



Engine Inspection Form

Rig #

319

Date Maintenance Started

Monday, February 4, 2019

Date Maintenance Completed

Monday, February 4, 2019

Name

Alan Bural

My E-Mail

alan.bural@unitcorp.com

Additional Technicians

Yes

Total Hours:

8

Check all that apply

Randy Reid

Action Items

Fuel tank needs 12 volt battery charger

Fuel Tank Sample

Yes

#1 Engine Antifreeze

Red

#1 Engine Freeze Point

-30

Aftercooler?

Yes

Aftercooler Antifreeze

Red

#1 AC- Freeze Point

-20

#2 Engine Antifreeze

Red

#2 Engine Freeze Point

-20

Aftercooler?

Yes

Aftercooler Antifreeze

Red

#2 AC- Freeze Point

-20

#3 Engine Antifreeze

Red

#3 Engine Freeze Point

-25

Aftercooler?

Yes

Aftercooler Antifreeze

Red

#3 AC- Freeze Point

-20

Genset Comments

Air filters are not being changed
Replaced sheave end fan shaft bearing on #2
Replaced belt on #2.
Replaced left water manifold seals on #2.
Replaced idler shaft and bearings on #3

Generator

Email the following:

Mike Almond

Keith Mason

Nathan Arnett

Caleb Carpenter

David Baker

Work Order Status

Opened

Exciter Air Gap

	Top	Bottom	Left Side.	Right Side
Gen. #1	71	62	71	75
Gen. #2	61	66	66	73
Gen. #3	73	61	73	73
Gen. #4				

	#1	#2	#3	#4
Grease and inspect for wear	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Clean generator and blow out if necessary	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Check and record exciter air gap	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Generator Asset Information

	Model Number	Gen. Asset	KW.	1 or 2 Brg.	RPM
#1 Generator	AA27673013	24-912	1204	2	1200
#2 Generator	AA27673013	24-913	1204	2	1200
#3 Generator	AA27673013	24-925	1204	2	1200
#4 Generator					
Top Drive					

Generator

	Kato	MTU	Cat	GE	Marathon	Spectrum	Magnamax	Baylor
#1 Generator	<input checked="" type="checkbox"/>							
#2 Generator	<input checked="" type="checkbox"/>							
#3 Generator	<input checked="" type="checkbox"/>							
#4 Generator								
Top Drive								

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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Grease fan hub bearings and idler bearings	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Inspect and clean radiators. NOTE: Wash in opposite direction of air flow; (You should be able to see clearly through the radiators fins)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Test shutdown system	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Installed new belts		<input checked="" type="checkbox"/>		
Check & clean auxiliary oil filter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Make sure crank case filters and being serviced (On 3508, 3512)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

#3 AC- Extended Life

Pass	Test
Fail	

#3 Extended Life

Pass	Test
Fail	

#2 AC- Extended Life

Pass	Test
Fail	

#2 Extended Life

Pass	Test
Fail	

Belt Information

	Belt Number	Radiator Fan Bearing	Idler Bearing	Pulley Size	Shaft Size: Idler Shaft	Shaft Size: Fan Shaft
Record Information	5vx1180	ZA2115	ZA2107		19	67

#1 AC- Extended Life

Pass	Test
Fail	

#1 Extended Life

Pass	Test
Fail	

Genset Asset Information

	Asset #	Serial #	Hours	Manufacture	Model
#1 Engine	22-1398	LLA01759	31509	Cat	3512
#2 Engine	22-1390	LLA01791	32444	Cat	3512
#3 Engine	22-1396	LLA02075	32594	Cat	3512
#4 Engine					

ROTARY SCREW AIR COMPRESSOR MAINTENANCE CHART

Last Updated: SEPTEMBER 05, 2013

Rig #	319	Oil Type	R46		<input type="checkbox"/> Palasyn 45
MODEL #	50DG	SERIAL #	10A028	ASSET #	2-1195
HRS		W/O #		DATE	2/22/2018
COMPANY	Unit Drlg.	TECHNICIAN	Guy Phillips		
DESCRIPTION OF WORK AND PARTS USED					
<input checked="" type="checkbox"/> Completed	CHANGED OIL				
<input checked="" type="checkbox"/> Completed	CHANGED OIL FILTER				
<input checked="" type="checkbox"/> Completed	CHANGED AIR FILTER				
<input checked="" type="checkbox"/> Completed	CHANGED SEPERATOR				
<input checked="" type="checkbox"/> Completed	CLEANED RADIATOR				
<input type="checkbox"/> Completed	ADDED NEW OIL SAMPLE VALVE				
<input checked="" type="checkbox"/> Completed	CHECK AND INSPECT DRIVE COUPLINGS				
<input checked="" type="checkbox"/> Completed	DRAIN WATER FROM TANK				
<input checked="" type="checkbox"/> Completed	OPEN PANEL DOOR AND CHECK TO BE SECURE				
<input checked="" type="checkbox"/> Completed	CHECK ALL SIGNAL LINES (BLACK PLASTIC)				
<input type="checkbox"/> Completed	ENSURE IT IS CLEAN AND WASH WITH SOLVENT				
PALATEK COLD START					
<input type="checkbox"/> Completed	CHANGE ENGINE OIL, FILTER, AIR FILTER, FUEL FILTER AND TAKE AN OIL SAMPLE EVERY TIME YOU SERVICE THE RIG AIR COMPRESSORS.				
<input type="checkbox"/> Completed	YEARLY SERVICE THE AIR END OF THE COMPRESSOR (OIL AND ALL FILTERS)- MARK THE DATE ON THE FILTER.				
PALATEK AIR DRYER					
<input type="checkbox"/> Completed	CHANGED INLET AND OUTLET FILTER TO DRYER. USE ONLY PALATEK FILTERS.				
Condition of equipment					

ROTARY SCREW AIR COMPRESSOR MAINTENANCE CHART

Last Updated: SEPTEMBER 05, 2013

Rig #	319	Oil Type	R46 <input type="checkbox"/> Palasyn 45
MODEL #	50 DG	SERIAL #	10A030
ASSET #	2-1194		
HRS		W/O #	DATE
			2/22/2018
COMPANY	Unit Drlg.	TECHNICIAN	Guy Phillips
DESCRIPTION OF WORK AND PARTS USED			
<input checked="" type="checkbox"/> Completed	CHANGED OIL		
<input checked="" type="checkbox"/> Completed	CHANGED OIL FILTER		
<input checked="" type="checkbox"/> Completed	CHANGED AIR FILTER		
<input checked="" type="checkbox"/> Completed	CHANGED SEPERATOR		
<input checked="" type="checkbox"/> Completed	CLEANED RADIATOR		
<input type="checkbox"/> Completed	ADDED NEW OIL SAMPLE VALVE		
<input checked="" type="checkbox"/> Completed	CHECK AND INSPECT DRIVE COUPLINGS		
<input checked="" type="checkbox"/> Completed	DRAIN WATER FROM TANK		
<input checked="" type="checkbox"/> Completed	OPEN PANEL DOOR AND CHECK TO BE SECURE		
<input checked="" type="checkbox"/> Completed	CHECK ALL SIGNAL LINES (BLACK PLASTIC)		
<input checked="" type="checkbox"/> Completed	ENSURE IT IS CLEAN AND WASH WITH SOLVENT		
PALATEK COLD START			
<input type="checkbox"/> Completed	CHANGE ENGINE OIL, FILTER, AIR FILTER, FUEL FILTER AND TAKE AN OIL SAMPLE EVERY TIME YOU SERVICE THE RIG AIR COMPRESSORS.		
<input type="checkbox"/> Completed	YEARLY SERVICE THE AIR END OF THE COMPRESSOR (OIL AND ALL FILTERS)- MARK THE DATE ON THE FILTER.		
PALATEK AIR DRYER			
<input type="checkbox"/> Completed	CHANGED INLET AND OUTLET FILTER TO DRYER. USE ONLY PALATEK FILTERS.		
Condition of equipment			

power supply cord burnt in junction box, reposition lead and repair

Pump Inspection Form

Rig #

319

Date Maintenance Started

Tuesday, June 11, 2019

Date Maintenance Completed

Tuesday, June 11, 2019

Name

Guy Phillips

Job Title

Field tech

Travel Time to Rig:

1

Time at Rig:

12

Travel Time from Rig:

1

From:

Home

To:

Home

Total Hrs:

14

Pump Asset Info.

	Pump #1	Pump #2	Pump #3
Asset #	38-470	38-471	
Make	National	National	
Model	F1600	F1600	

1 Pump GENERAL INSPECTION CHECKLIST

	Inspect
Check all Oil Lines	<input checked="" type="checkbox"/>
Check all tied Bolts	<input checked="" type="checkbox"/>
Drain & Check Cleanouts	<input checked="" type="checkbox"/>
Check & Clean, gear end with diesel if needed	
Pony Rod Alignment	<input checked="" type="checkbox"/>
Check Pony Rods for Cracks & Wear (Replace if necessary)	<input checked="" type="checkbox"/>
Check Piston Rods for Cracks & Wear (Replace if necessary)	<input checked="" type="checkbox"/>
Check Clamps for Wear (Replace if necessary)	<input checked="" type="checkbox"/>
Check all bearings with mirror for Pitting & Flaking	<input checked="" type="checkbox"/>
Check all oil pump screen	<input checked="" type="checkbox"/>
Check pillow block bearings on independent pump	
On inspection replace pony rod seals (Regardless if the 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)	<input checked="" type="checkbox"/>

1 Pump "Continental Emsco" Checklist

	Inspect
Oil pressure and guage	<input checked="" type="checkbox"/>
Check pony rod wiper if equipped, if not equipped with wiper, get parts to correct.	<input checked="" type="checkbox"/>
Check to see if baffle plates are doweled in pump.	<input checked="" type="checkbox"/>

1 Pump Recommended Running Clearances

	Reading
Crosshead to slide - Left - Min .030 Max .045	.028
Crosshead to slide - Center - Min .030 Max .045	.031
Crosshead to slide - Right - Min .030 Max .045	.033
Main Bearing - Left - Min .005 Max .020	.004
Main Bearing - Right - Min .005 Max .020	.006
Pinion Shaft Bearing - Left - Min .002 Max .015	.005
Pinion Shaft Bearing - Right - Min .002 Max .015	.006
Crosshead Pin Bearing - Left - Min .002 Max .005	.002
Crosshead Pin Bearing - Center - Min .002 Max .005	.002
Crosshead Pin Bearing - Right - Min .002 Max .005	.001
Connecting Rod to Eccentric Bearing - Left - Min .002 Max .020	.002
Connecting Rod to Eccentric Bearing - Center - Min .002 Max .020	.004
Connecting Rod to Eccentric Bearing - Right - Min .002 Max .020	.003
Oil Pump Pinion Shaft to Main Gear, Backlash - Left - Min .010 Max .025	.017
Pinion Shaft to Main Gear, Backlash - Right - Min .010 Max .050	.032
Bull Gear Wear - Findings	Good
Pinion Gear Wear - Findings	Good
Pinion Gear Wear - Findings	
Discharge Dampner Charge Pressure - PSI Reading	1000
Suction Dampner Charge Pressure - PSI Reading	

#2 Pump GENERAL INSPECTION CHECKLIST

	Inspect
Check all Oil Lines	<input checked="" type="checkbox"/>
Check all tied Bolts	<input checked="" type="checkbox"/>
Drain & Check Cleanouts	<input checked="" type="checkbox"/>
Check & Clean, gear end with diesel if needed	
Pony Rod Alignment	<input checked="" type="checkbox"/>
Check Pony Rods for Cracks & Wear (Replace if necessary)	<input checked="" type="checkbox"/>
Check Piston Rods for Cracks & Wear (Replace if necessary)	<input checked="" type="checkbox"/>
Check Clamps for Wear (Replace if necessary)	<input checked="" type="checkbox"/>
Check all bearings with mirror for Pitting & Flaking	<input checked="" type="checkbox"/>
Check all oil pump screen	<input checked="" type="checkbox"/>
Check pillow block bearings on independent pump	
On inspection replace pony rod seals (Regardless if the 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)	<input checked="" type="checkbox"/>

2 Pump Recommended Running Clearances

	Reading
Crosshead to slide - Left - Min .030 Max .045	.034
Crosshead to slide - Center - Min .030 Max .045	.029
Crosshead to slide - Right - Min .030 Max .045	.036
Main Bearing - Left - Min .005 Max .020	.006
Main Bearing - Right - Min .005 Max .020	.004
Pinion Shaft Bearing - Left - Min .002 Max .015	.005
Pinion Shaft Bearing - Right - Min .002 Max .015	.005
Crosshead Pin Bearing - Left - Min .002 Max .005	.004
Crosshead Pin Bearing - Center - Min .002 Max .005	.002
Crosshead Pin Bearing - Right - Min .002 Max .005	.002
Connecting Rod to Eccentric Bearing - Left - Min .002 Max .020	.003
Connecting Rod to Eccentric Bearing - Center - Min .002 Max .020	.005
Connecting Rod to Eccentric Bearing - Right - Min .002 Max .020	.004
Oil Pump Pinion Shaft to Main Gear, Backlash - Left - Min .010 Max .025	.022
Pinion Shaft to Main Gear, Backlash - Right - Min .010 Max .050	.038
Bull Gear Wear - Findings	Good
Pinion Gear Wear - Findings	Good
Pinion Gear Wear - Findings	
Discharge Dampner Charge Pressure - PSI Reading	700
Suction Dampner Charge Pressure - PSI Reading	

2 Pump "Continental Emsco" Checklist

	Inspect
Oil pressure and guage	<input checked="" type="checkbox"/>
Check pony rod wiper if equipped, if not equipped with wiper, get parts to correct.	<input checked="" type="checkbox"/>
Check to see if baffle plates are doweled in pump.	<input checked="" type="checkbox"/>

Email the Following

Mike Almond

Frank Smith

Keith Mason

Nathan Arnett

Ticket Status

Open

Rig Inspection Form

Rig #

319

Date Maintenance Started

Monday, June 10, 2019

Date Maintenance Completed

Monday, June 10, 2019

Name

Guy Phillips

Job Title:

Field tech

Travel Time to Rig:

1

Time at Rig:

11

Travel Time from Rig:

1

From:

Home

To:

Home

Air Hoist Asset

	Asset #	Action Items:
#1 Asset 27-	73	
#2 Asset 27-		
#3 Asset 27-		

Air Hoist:

Inspect

Check oil in air motor.	<input checked="" type="checkbox"/>
Check grease in gear case.	<input checked="" type="checkbox"/>
Grease throttle valve.	<input checked="" type="checkbox"/>
Check brake system for wear.	<input checked="" type="checkbox"/>
Check cable for fraying.	<input checked="" type="checkbox"/>

Total Hrs:

13

Air Hoist Comment:

Change air supply valve

Block Asset

	Asset #	Action Items:
Block 5--	13	
Block 67-		

Block Inspection

	Inspect
Check grooves for wear	<input checked="" type="checkbox"/>
Check for Smoothness of Roll	<input checked="" type="checkbox"/>
Check for Play in Bearings	<input checked="" type="checkbox"/>
Ensure bolts are in place	<input checked="" type="checkbox"/>
Grease all Zerks	<input checked="" type="checkbox"/>

Block Comment:

Shelves are getting deep

Electric Brake Asset

	Asset #	Action Items:
Asset # 66-		
DS	..007	
ODS	.005	

Disc Size	Qty of VCI Discs	X new	X min (4.000000)	Y new	Y min	Z new	Z min
36	1	0.12	0.54	2.75	2.31	---	---
	2	0.24	0.66	2.75	2.31	---	---
	3	0.36	0.78	2.75	2.31	2.75	2.31
	4	0.48	0.90	2.75	2.31	2.75	2.31

Drawworks Drum Shaft Asset

	Asset #	Action Items:
Asset # 15-	73	

Electric Brakes Inspection

Inspect

Inspect plumbing (must meet Unit specs) Note: contact the maintenance department for instructions.	<input checked="" type="checkbox"/>
Take air gap reading.	<input checked="" type="checkbox"/>
Ensure brass shifting collars suspend off of sleeve OD.	<input checked="" type="checkbox"/>
Ensure vents are in place and clean.	
Grease all Zerks.	<input checked="" type="checkbox"/>
Inspect bearing clearance.	<input checked="" type="checkbox"/>

Electric Brake Air Gap Readings

	Drillers Side:	Off Drillers Side
Top	.056	.063
Back Left	.063	.052
Back Right	.059	.059

Dry Cooler Inspection**Inspect**

Flush Dry Cooler	<input checked="" type="checkbox"/>
Clean strainer	<input checked="" type="checkbox"/>
Check water pressure	<input checked="" type="checkbox"/>

Dry Cooler Asset**Asset #****Action Items:**

Asset # 78-	377
-------------	-----

Dry Cooler Water pressure**Readings:**

Inlet	19lbs
Outlet	23lbs

Drawworks Drum Shaft Inspection**Inspect**

Grease all zerks.	<input checked="" type="checkbox"/>
Change all filters	<input checked="" type="checkbox"/>
Clean screens	<input checked="" type="checkbox"/>

Inspect oil lines.	<input checked="" type="checkbox"/>
Check oil level	<input checked="" type="checkbox"/>
Check oil quality	<input checked="" type="checkbox"/>
Clean pickup screens	<input checked="" type="checkbox"/>
Inspect clutches for wear	<input checked="" type="checkbox"/>
Inspect clutches for air pressure	<input checked="" type="checkbox"/>
Insect tight member teeth for wear and grease.	<input checked="" type="checkbox"/>

Brake Linkage Asset

Asset #	Action Items:
Asset # 15-	73

Drawworks Readings

	Jack Bearing Readings:
DS	.004
ODS	.003
Other	.003
Other	.005
Other	

Brake Linkage Inspection

	Inspect
Grease all zerks.	<input checked="" type="checkbox"/>
Ensure linkage is tight.	<input checked="" type="checkbox"/>
Inspect break bands for cracks and wear.	<input checked="" type="checkbox"/>
Check brake block bolts and ensure bolts are tight.	<input checked="" type="checkbox"/>
Check brake block thickness, record thinnest.	<input checked="" type="checkbox"/>

Brake Linkage Readings

	Readings:
DS	1 1/8"
ODS	1 3/16"
Brake block thinnest reading	1 1/8"

Input Asset

Asset #	Action Items:
Asset # 15-	73

Input Inspection

Inspect
Inspect for leaking seals. <input checked="" type="checkbox"/>

Input Readings

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

Output Inspection

Inspect
Grease all zerks. <input checked="" type="checkbox"/>
Inspect oil system. <input checked="" type="checkbox"/>

Output Readings

Jack Bearing Readings:
DS .004
ODS .003
Other .001
Other .002
Other

Rotary Counter Shaft:

Inspect
Grease all zerks. <input checked="" type="checkbox"/>
Inspect oil system. <input checked="" type="checkbox"/>

Rotary Counter Shaft Readings

Jack Bearing Readings:
DS .005

ODS	.003
Other	.005
Other	
Other	

Mud Pumps Asset

	Asset #	Action Items:
Asset # 1 38-	470	
Asset # 2 38-	471	
Asset # 3 38-		

Mud Pumps Inspection

	Inspect
Fill out pump inspection report.	<input checked="" type="checkbox"/>
Check piston rods and replace if worn.	<input checked="" type="checkbox"/>
Check rod clamps and replace if worn.	<input checked="" type="checkbox"/>

Mud Pump Comment:

Change lube pump and motor On number one mud pump

Independent Pump Drive#1

	Inspect
Inspect belts and sheave grooves for wear.	<input checked="" type="checkbox"/>
Inspect chains and chain sprockets for wear.	
Inspect clutch and clutch drum.	
Check air lines and record PSI.	
Record bearing play on engine side of shaft.	
Record bearing play on pump side of shaft.	

Pipe Spinners Asset

	Asset #	Action Items:
Asset # 41-	71	

Rotary Table Asset

	Asset #	Action Items:
Asset # 44-	73	

Pipe Spinners Inspect:

Inspect	
Ensure spinner is hung level with drill pipe.	<input checked="" type="checkbox"/>
Inspect drive chain and rollers for wear. (Clean if needed)	<input checked="" type="checkbox"/>
Grease all zerks.	<input checked="" type="checkbox"/>
Check hanger springs.	<input checked="" type="checkbox"/>

Rotary Table Inspect:

Inspect	
Pull top off and wash mud out of table.	
Inspect through bore.	
Record main bearing play.	<input checked="" type="checkbox"/>
Record pinion bearing play.	<input checked="" type="checkbox"/>
Record backlash play in gears.	<input checked="" type="checkbox"/>
Check quality of oil.	<input checked="" type="checkbox"/>

Rotary Table Readings

Readings:	
Main Bearing play	.008
Pinion Bearing play	.005
Backlash play in gears	.019

Swivel Asset

Asset #	Action Items:
Asset # 50-	41

HPU Comment:

Repair leaking hydraulic lines on HPU

Swivel Inspect:

Inspect	
Clean mud accumulation around top seals and install mud guard.	<input checked="" type="checkbox"/>
Roll check swivel for smoothness of roll.	<input checked="" type="checkbox"/>
Record endplay readings. Radial out.	<input checked="" type="checkbox"/>
Check quality of oil.	<input checked="" type="checkbox"/>

Swivel Readings

	Readings:
Record endplay reading	.001

Crown Inspect:

	Inspect
Inspect grooves for wear.	<input checked="" type="checkbox"/>
Check for play in bearings.	<input checked="" type="checkbox"/>
Check for smoothness of roll.	<input checked="" type="checkbox"/>
Grease all zerks.	<input checked="" type="checkbox"/>

HPU:

	Performed
Run HPU & check for leaks	<input checked="" type="checkbox"/>
Change all filters.	<input checked="" type="checkbox"/>
Ensure Rig Manage knows to change HPU oil once a year.	<input checked="" type="checkbox"/>

Email the following:

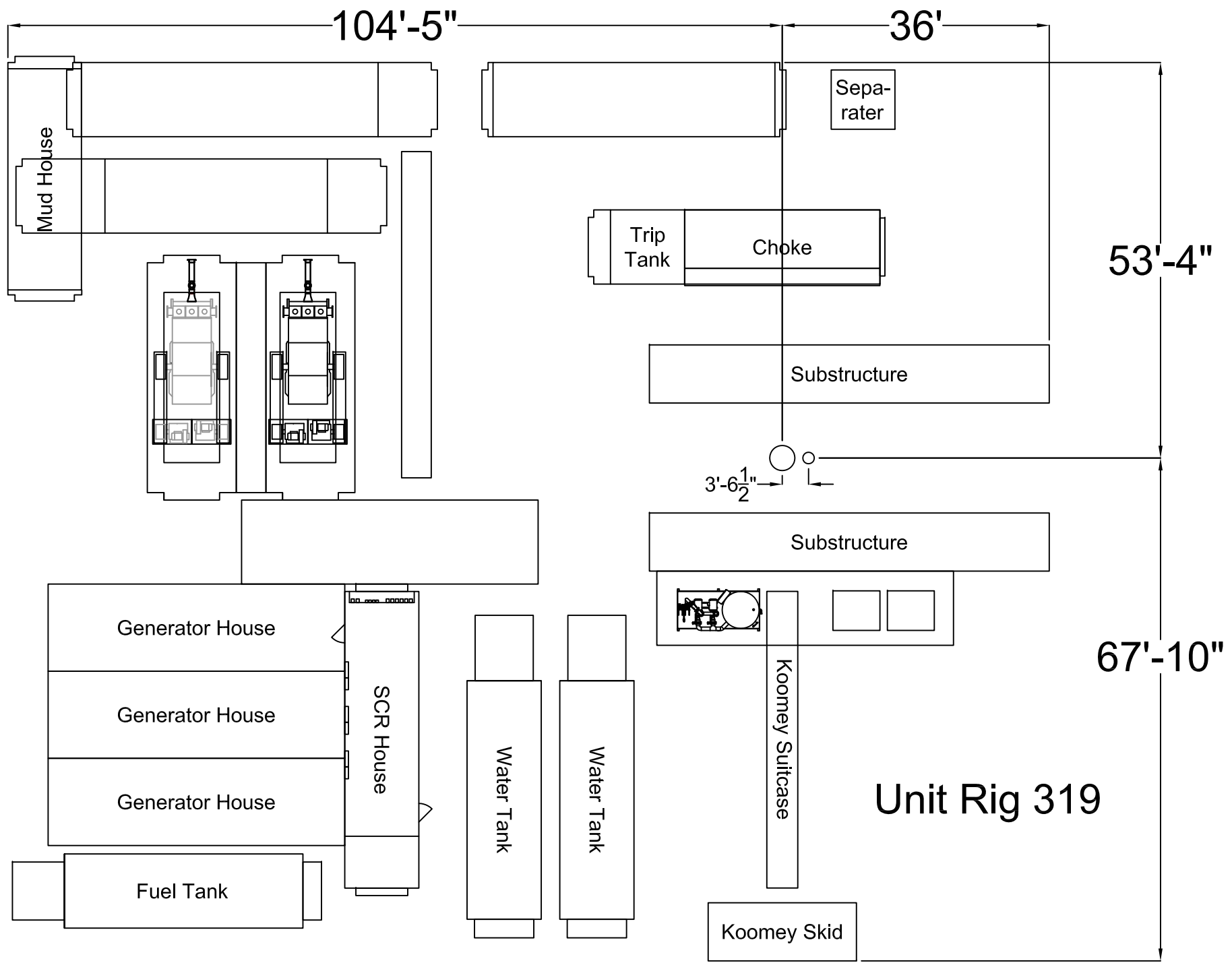
Mike Almond

Frank Smith

Nathan Arnett

Ticket Status

Open



Unit Rig 319