

Functional Analysis- Bore well Drilling Operator

Role	Bore well drilling Operator	
Job Purpose	A bore well drilling operator is responsible for setting up and operating portable drilling rig to drill wells, starting and controlling the drilling actions by lowering of well casing into the well bore	
Function	1	Carry out Pre-operation checks on bore well drilling equipment
Purpose	P1	This unit/task covers the following: <ul style="list-style-type: none"> Pre-operation checks Reporting and documentation
Activities		Pre-operation checks
	1.	Check fluid levels of engine crank case, radiator coolant and battery electrolyte levels as per operational manual of the equipment
	2.	Check the condition of hose/pipes/clamps for normal functioning
	3.	Check all mounting bolts are tightened as per the manual
	4.	Check levers and control cables are in proper working conditions
	3.	Check all electrical parts and wiring
	5.	Check for tires-damages and bulges and replace if required as per the set procedures
	6.	Check Rear Axle- Steer cylinders for damage, leaks, secure pivot pins, damaged hydraulic hoses and replace if required
	7.	Check for abnormal noises or vibrations; if detected, determine their cause and repair as necessary
	8.	Check for service brake and parking brake operation
		Reporting and documentation
9.	Maintain a pre-operational check logbook to record all activities performed before starting the drilling operation	
10.	Report defects precisely to the supervisor if beyond scope of his role	
Function	2	Carry out bore well drilling operation
Purpose	P2	This unit/task covers the following: <ul style="list-style-type: none"> Bore well drilling operations Reporting and documentation
Activities		Bore well drilling operations
	1.	Attach the pipe to the gripper casing pipe and connect it to the rotate motor attached to the rig mast
	2.	Drill the casing pipe into the ground until it reaches the surface of the hard rock and leave the pipe inside the ground
	3.	Choose the appropriate drill rods and connect them to the rotator motor
	4.	Connect the appropriate drill bit to the hammer that is attached to the drill rod
5.	Start the drilling of drill rods inside the casing pipe	

		Monitor air & hydraulic pressure gauge, engine & compressor temp gauge
	6.	Monitor RPM, air discharge temperature and pressure, engine water temperature and pressure and sump pressure displayed in the compressor unit
	7.	Monitor hydraulic oil filter clog indicator, air filter element and compressor air filter elements
	8.	Coordinate with the junior operators at regular intervals while operating the machine for better performance
	9.	Change the drill bits if the drilling process slows down by monitoring the RPM levels
		Reporting and Documentation
	10.	Communicate problems accurately to others, such as maintenance personnel
	11.	Document and communicate concerns to appropriate personnel, such as supervisor, mechanic
Function	3	Carry out maintenance and troubleshooting of the bore well drilling equipment
Purpose	P3	This unit/task covers the following: <ul style="list-style-type: none"> • Basic maintenance and troubleshooting • Reporting and documentation
Activities		Basic maintenance and troubleshooting
	1.	Replenish lubricants and fluids as per the running of the machine or as per the schedule
	2.	Tighten the bolts of mounting joints after drilling is done
	3.	Perform housekeeping activities wherever required
	4.	Check battery levels, condition of the terminals and carry out minor repairs
	5.	Ensure all the tools are kept in the designated place after usage
	6.	Turn off the main power from panel completely before carrying out maintenance work
	7.	Ensure that appropriate tools are used while troubleshooting
	8.	Dispose waste as per the guidelines of the site/ organization
		Reporting and Documentation
9.	Complete all documentation as per the prescribed standards in a timely manner	
10.	Report defects precisely to the supervisor if beyond scope of his role	
Organizational Knowledge	K1.1	The organization's procedures and guidelines related to breakdown & maintenance services
	K1.2	The performance standards & procedures followed in the company
	K1.3	Reporting structure in the company
	K1.4	Escalation matrix for reporting unresolved problems
	K1.5	Timeframe in which the complaint/problem should be resolved
	K1.6	Work target and review mechanism with supervisor for obtaining/ giving feedback related to performance process
	K1.7	Location of tools

	K1.8	Contact person in case of queries on procedure or equipment
	K1.9	Location and process for storage and disposal of waste material
	K1.10	Safety Policy of the company
Technical Knowledge	K2.1	Components of Drilling machine and its functioning
	K2.2	Basics of engine transmission, their use and function
	K2.3	Basic auto-electrical functioning and repairs
	K2.4	Different types of hydraulic mechanisms and principles of friction
	K2.5	Significance and methods of lubricating different parts of the drilling machine
	K2.6	Compressor maintenance like radiator coolant level, battery electrolyte level, hydraulic oil filter elements
	K2.7	Air filter restriction indicators and gauges
	K2.8	Controls, levers and switches in order to operate drilling machine
	K2.9	Procedure of filling diesel, coolant in the machine
	K2.10	Factors that affect equipment stability, such as ground and supporting conditions
	K2.11	Different Drilling Machines used in water drilling
	K2.12	Actual and potential hazards, such as overhead utilities, guide wires, other equipment, personnel and vehicular traffic.
	K2.13	Radius requirements of rods and equipment setup requirements
	K2.14	Indicators pertaining to compressor such as RPM, Air discharge, water temperature and pressures during the drilling process
	K2.15	Hydraulic system of the machine and how it works
Generic Skills	SA1	Writing Skills
	SA3.1	Record any deviations/ incidents as per prescribed norms
	SA2	Reading Skills
	SA2.1	Read and comprehend basic English to read manuals of operations
	SA2.2	Read instructions, guidelines/procedures/rules related to the worksite and equipment operations
	SA2.3	Comprehend basic sign and symbols at the worksite
	SA3	Oral Communication (Listening and Speaking Skills)
	SA3.1	Give clear instructions to co-workers, subordinates and other persons
	SA3.2	Use correct technical terms while interacting with supervisor
Domain Specific Skills	SB1	Decision Making
	SB1.1	Decide when to conduct maintenance checks
	SB2	Plan and Organize
	SB2.1	Work with supervisors/ team mates to carry out work related tasks
	SB2.2	Plan work according to the required schedule and location
	SB2.3	Plan for cleaning and lubricating the appropriate equipment every day
	SB3	Customer Centricity
	SB3.1	Provide service of the highest order to ensure customer satisfaction
	SB4	Problem Solving
	SB4.1	Identify immediate or temporary solutions to resolve mechanical issues
SB4.2	Judge when to seek assistance from supervisor	

	SB5	Analytical Thinking
	SB5.1	Identify cause and effect relations in his area of work
	SB6	Critical Thinking
	SB6.1	Analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently