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PERMIT TO WORK Overview

**SAPIA HSEEC Meeting
11 July 2019**

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DISCUSSION POINTS

1. Documents used in the Permit to Work System.
2. Completion of Safety and Hot Work Authorization and Work Permit.
3. Risk Assessment.
4. PTW Training Requirements
5. Lessons Learned

DOCUMENTS USED IN PTW SYSTEM

- **Permit to Work Procedure SAF/PR/OPS/002** – Reviewed as per our document review cycle, after an incident and/or changing risk profile.
- **Objectives and scope:**
 - To ensure that when the unit or the equipment has been handed over to Maintenance, Production or Contract personnel or any other person performing work on PetroSA property **all possible precautions have been taken to prevent harm or injury to people, damage to the unit, the environment or equipment.**
 - Addresses the issue of WORK PERMITS / SAFETY and HOTWORK AUTHORISATIONS required to perform work in a safe and efficient manner.
 - **Put into effect proper planning and preparation.**
 - Outlines roles and responsibilities for the PTW system

DOCUMENTS USED IN PTW SYSTEM

1. **SAFETY and HOTWORK AUTHORISATION**
2. WORK PERMIT
3. **HIRA (Hazard Identification Risk Assessment)**
 - i. Maintenance
 - ii. Confined Space Entry
4. MSDS (Material Safety Data Sheet)
5. **Documents Covered by Other Procedures e.g.**
 - i. Electrical Isolation Permit
 - ii. Radio Active Source Control Doc

3 LEVELS OF RISK & REQUIRED DOCUMENTS

RISK OF FIRE

**SAFETY AUTHORIZATION
HOTWORK AUTHORIZATION.
WORK PERMIT**

**HIGH RISK
(e.g. confined space)**

**SAFETY AUTHORIZATION
WORK PERMIT**

LOW RISK

WORK PERMIT

SAFETY and HOT WORK AUTHORIZATION

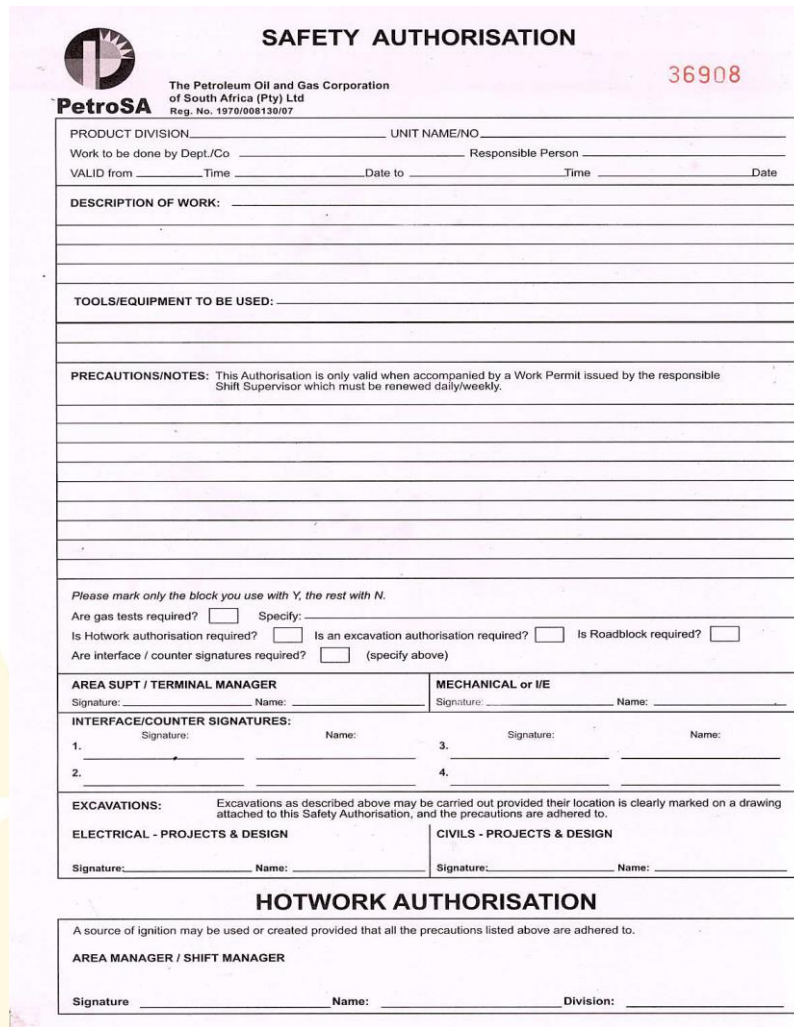
This is the **pink document** that authorizes one to obtain a **WORK PERMIT** for high-risk or hot work.

- Issued for a time period from one day up to one calendar year.
- Authorised by the Area Production Manager)
- Safety and Hot Work Authorization consists of three parts:

i. Safety Authorization

ii. Excavation Authorization

iii. Hot Work Authorization



The form is titled "SAFETY AUTHORISATION" and includes the PetroSA logo and company details: "The Petroleum Oil and Gas Corporation of South Africa (Pty) Ltd Reg. No. 1970/008130/07". A reference number "36908" is printed in the top right corner.

The form contains several sections for data entry:

- PRODUCT DIVISION** and **UNIT NAME/NO**
- Work to be done by Dept/Co** and **Responsible Person**
- VALID from** (Time and Date) and **Date to** (Time and Date)
- DESCRIPTION OF WORK:** (Multiple lines for text)
- TOOLS/EQUIPMENT TO BE USED:** (Multiple lines for text)
- PRECAUTIONS/NOTES:** (Multiple lines for text)
- Please mark only the block you use with Y, the rest with N.**
 - Are gas tests required? ☐ Specify: _____
 - Is Hotwork authorisation required? ☐ Is an excavation authorisation required? ☐ Is Roadblock required? ☐
 - Are interface / counter signatures required? ☐ (specify above)
- SIGNATURES:**
 - AREA SUPT / TERMINAL MANAGER** (Signature and Name)
 - MECHANICAL or I/E** (Signature and Name)
 - INTERFACE/COUNTER SIGNATURES:** (Four numbered slots for Signature and Name)
 - EXCAVATIONS:** (Text: Excavations as described above may be carried out provided their location is clearly marked on a drawing attached to this Safety Authorisation, and the precautions are adhered to.)
 - ELECTRICAL - PROJECTS & DESIGN** (Signature and Name)
 - CIVILS - PROJECTS & DESIGN** (Signature and Name)
- HOTWORK AUTHORISATION**
 - A source of ignition may be used or created provided that all the precautions listed above are adhered to.
 - AREA MANAGER / SHIFT MANAGER** (Signature, Name, and Division)



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EXAMPLES OF HIGH RISK AND HOT WORK

REQUIRING SAFETY AUTHORIZATION:

- Entry into confined spaces.
- Bypassing or rendering inoperable any Fire or Safety Protective System.
- Maintenance on Smith Lock or similar mechanisms.
- Overriding of ESD and/or trip systems.
- Installation of temporary piping.
- Work involving X-RAYS or GAMMA RAYS
- Chemical cleaning
- Hot bolting i.e. flogging up under normal process conditions
- **All activities require a Safety Authorisation and Work permit**

EXAMPLES OF HOT WORK:

- Use spark producing tools, equipment or methods i.e. grinding, chipping, grit blasting, jackhammers etc.
- Use of open flames or fires
- Use of, or access by any internal combustion engine.
- Stress relieving e.g. post weld heat treatment
- Use of non-classified equipment in classified areas.
- **The above require a Safety Authorisation, Hotwork Authorisation and a Work Permit**



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WORK PERMIT

This is the **BLUE** document which permits one to perform the work as stipulated.

- The Work Permit is primarily a one day permit; although it can be issued for a time period of maximum seven days.
- Applicable when Safety & Hotwork Authorisation is involved
- Must be authorised by the Area Production Manager or when low risk work is involved and the issuer is on shift for the period.
- **NB: Authorization, Acceptance and acknowledgments:**

		WORK PERMIT																																													
PetroSA The Petroleum Oil and Gas Corporation of South Africa (Pty) Ltd Reg. No. 1970/008130/07		PSM SCORE		A	B	C	D																																								
		RA REQUIRED		3 "Whats"																																											
		232613		PPA Informal																																											
		(HIRA)		PPA Formal																																											
		DATE:																																													
		DAILY		EXTENDED: Valid until.....																																											
PRODUCTION DIVISION		UNIT NAME/NO																																													
Issued to Responsible Person		Department/Company																																													
Equipment Name/No																																															
Work to be done:																																															
☐ Work must be done as specified on Safety Authorisation No		Attached																																													
☐ ELECTRICAL ISOLATION is required.		Permit Number																																													
MECHANICAL ISOLATION OF EQUIPMENT: It is certified that the equipment: (Mark blocks with Yes or No)																																															
☐	Is fully spaded off from other systems as per attached list, pressure free and safe to do the work described above.																																														
☐	Is fully spaded off from other systems as per attached list, but may be under pressure and/or contain a hazardous product.																																														
☐	Specify Hazards																																														
☐	Is isolated but not spaded from other systems and may be under pressure and/or contain hazardous product.																																														
☐	Specify Hazards																																														
☐	Does not require isolation from other systems for the work to be carried out safely																																														
☐	Is not isolated: To be isolated by instrument/Analyser Dept.																																														
Protective Equipment must be worn to do the work safely (tick those required)																																															
☐	GOGGLES	☐	GLOVES	☐	SPECTACLES	☐	FACE SHIELD																																								
☐	☐		EAR PROTECTION		☐																																										
☐	SAFETY HARNESS																																														
Other Specify																																															
SPECIAL PRECAUTIONS to do the work Safely																																															
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DATE	TIME	STATE	TEST TAKEN BY	WVOL	SPECIFY	WVOL	TEST TAKEN BY																																								
Gas Tests ARE required ☐ (Mark with Yes or No)																																															
Flammable Gas% LEL																																															
Oxygen% VOL																																															
Toxic gas..... ppm Specify																																															
Additional tests to be recorded overleaf on original and copy if required.																																															
Handed over by Production Department I have confirmed that the equipment condition is as certified above and the work can be carried out safely if all the precautions and conditions are adhered to																																															
Shift Supervisor: 1. Name: Time:																																															
Continuation: 2. Name: Time:																																															
Acceptance of work: I have read and understand and accept all precautions and conditions specified for this work and undertake to make all people involved fully aware of all precautions to be taken and all hazards involved.																																															
RESPONSIBLE PERSON Name: Time:																																															
Continuation: (Signature) Name: Time:																																															
Completion of work: The work HAS/HAS NOT been completed.																																															
Shift Supervisor (Signature) Name: Time:																																															
Responsible Person (Signature) Name: Time:																																															



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RISK ASSESSMENT

Questions to ask before issuing Work Permit. The 3" Whats":

1. What can go wrong?
2. What can cause it ?
3. What can we do to prevent it going wrong?



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Potential Seriousness Matrix

SERIOUSNESS	A INJURY	B NUMBER OF PEOPLE AT RISK	C ENVIRONMENT AL	D EQUIPMENT
1 SLIGHT	Minor Injury	1 - 2	Slight Damage or Impact	Slight Damage or Loss
2 MINOR	Medical Case	3 - 10	Minor Damage or Impact	Minor damage or Loss
3 MODERATE	Lost Time Injury	11 - 25	Moderate damage or Loss	Moderate Damage or Loss
4 MAJOR	Permanent Disability	26 - 50	Major Damage or Loss	Major Damage of Loss
5 CATASTROPHIC	One or more fatalities	51+	Catastrophic damage or Loss	Catastrophic damage or Loss



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Risk Assessment Required

PSM Score	Risk Assessment Required	People to be involved
Any one of: A1 B1 C1 D1	"3 Whats"	Shift Supervisor and Responsible Person
Any one of: A2 B2 C2 D2	HIRA	Shift Supervisor, Engineering Forman and Responsible Person
Any one of: A3 B3 C3 D3	HIRA	Production Area Supt, Shift Sup, Reliability & Eng Serv Manager, Safety Dept, Engineering Supt / Responsible Eng Person
Any one of: B4 C4 D4	HIRA	Area Prod Man, Area Supt, Shift Sup, Reliability & Eng Serv Manager, Safety Dept, Engineering Supt / Responsible Eng Person
Any one of: A4 A5 B5 C5 D5	HIRA	Operations Manager, Area Prod Man, Area Supt, Shift Sup, Reliability & Eng Serv Manager, Safety Dept, Engineering Supt / Responsible Eng Person

PSM SCORE	A	B	C	D
RA REQUIRED	3 "Whats"			
232613 (HIRA)	PPA Informal			
	PPA Formal			



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Unit: _____

Equipment: _____

Production Name: _____

Signature: _____

Date: _____

Service Name: _____

Signature: _____

Date: _____

Task description: _____

Work Permit ☐

Safety Authorization ☐

Hot Work Authorization ☐

AUTHORIZATION NO: _____

PERMIT NO: _____

1. TRADE: What trade/trades are involved in the task?

Mechanical ☐

Welding/braze making ☐

Electrical ☐

Instrumentation ☐

Other ☐

No trade ☐

2. HAZARD: (What can cause harm/damage on this task? Tick and give rating)

1. HAZARDS	Yes/No	Rating
High temperature on equipment		
Electricity		
Hazardous position/Bad ergonomics		
Chemicals/Hazardous substances		
High pressure		
Power/Restricted vision/Bad lighting		
Confined space		
Work in elevated position / High Structures		
Unguarded slip/trip		
Heavy loads/Suspended loads		
Flammable or Explosive material		
Lazars or Flying material/Break		
Unstable work piece		
Using of High pressure equipment/HPIC		
Moving or rotating machinery		
Sharp Edges		
Health hazard		
Excavation/Incorrect shoring		
Environmental (Temp/Wind/Rain/Animals)		

Likelihood: What are the chances of it happening?					
Frequency	Rare <0.1	Unlikely 0.1 - 1%	Moderate 1 - 10%	Likely 10 - 50%	Almost Certain >50%
People	1	2	3	4	5
One or more fatalities	A				
Permanent disability	B				
Lost time injury	C				
Medical Case	D				
Minor Injury	E				

High risk

Moderate Risk

Medium Risk

Low Risk

1. HAZARDS (Cont.)

Yes/No

Rating

High wind on structure		
Nitrogen pressure		
H ₂ S may be present		
Other (List)		

2. PREVENTATIVE MEASURES: (What must be done to prevent an incident from occurring)

Electrical lock-out		Cool down equipment		Contain sparks with canvas	
Pressure release / De-Pressurize		Barricade area		Other (List)	
Secure/Stabilize work piece		Covering of reservoir/Drains			
Venting/Purging		Equipment to be padded			
100% Standby required		Equipment to be teamed out			
Running water available		Fire Extinguisher available			

3. PERSONAL PROTECTIVE EQUIPMENT

Gum boots		Breathing Apparatus		Leather Safety Boots / Shoes	
PVC Gloves		Special Clothing		Leather wrap around boots	
Other Type Gloves		Wrap around Safety Goggles		Air-line mask	
Safety Harness / Lanyard		Hard Hat with chin strap		Safety Spectacles	
Face Shield		Ear Protection		Dust mask	
PVC Suit		Leather Apron		Benzene mask	

4. Additional signatories of people who attended the HIRA

Person signing on permit briefed

Name:	Signature:

Name:	Signature:

WHAT CAN BE DONE TO MINIMISE THE HAZARD? (RSK)

WHAT CAN GO WRONG? (RSK)

HAZARD BY

HAZARDS / RISKS COMMUNICATED TO ME: NAME: SURNAME / SIGNATURE

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EXAMPLES OF LOW RISK WORK

REQUIRING JUST A WORK PERMIT:

- Disconnecting an electrical motor
- Remove or replace lagging
- Cleaning or removing of strainers/filters on low pressure, non-toxic or non-hazardous systems
- Replacing pressure gauges
- **Only a Work permit required for these type of jobs**

WORK NOT REQUIRING WORK PERMIT

- Work of any normal operating nature done by Production.
- Normal activities inside **Workshops** i.e. repairing a pump seal, grinding, cutting and welding.



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PERMIT TO WORK TRAINING REQUIREMENTS

- Training presentation a **4 hour session** for all levels of employees
- **Refresher training every 2 years**
- No Practical Training provided other than with Risk Assessment exercise.
- Training is inclusive of an Assessment. **Required assessment pass mark:**
 - Permit Authorizers (Managers) =100%
 - All employees (Accept) = 80%
- Assessments marked by attendees. This enables clarity on what may have been misunderstood, to address their concerns and ensures better knowledge than 80%.

1



SAFETY STANDARDS

ELEMENT
5.52

APPOINTMENT
PERMIT TO WORK

NAME:	PERS NO:	DIVISION:
INTERNAL TRAINING COURSES	DATE	SIGNATURE TRAINING OFFICER
PERMIT TO WORK	10/07/2019	B SCHOEMAN
SMITH LOCKS	N/A	Name
GAS TESTING	N/A	Signature
TYPE OF GASTERSTER TRAINED IN: N/A		

APPOINTED TO :	AUTHORISE	ISSUE	ACCEPT
Safety and Hotwork Authorisation	N/A	N/A	YES
Work Permit	YES	YES	YES
Smith Lock Operation	N/A	N/A	N/A
Gas testing	N/A	N/A	N/A

NO ✖ OR ✔ MAY BE USED. ENTER YES OR NO AS APPLICABLE IN EVERY BLOCK.

COMMENTS: Certified to ACCEPT AUTHORISE & ISSUE Work Permits as well as ACCEPT SAFETY & HOTWORK AUTHORISATIONS

VALID FROM 10/07/2019 TO

APPOINTMENT BY: SIGNATURE: DATE :

VALIDITY EXTENDED FROM : TO :

EXTENTION AUTHORIZED BY : SIGNATURE : DATE :

ACKNOWLEDGEMENT

I CERTIFY THAT I KNOW AND UNDERSTAND THE CONTENTS OF THE FOLLOWING PROCEDURES / INSTRUCTIONS AND UNDERTAKE TO STUDY THEM AT REGULAR INTERVALS:

PERMIT TO WORK SAF/PR/OPS/002

SMITH LOCK TRAINING

GAS TESTING

SIGNATURE : DATE : 10 July 2019

BV027



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LESSONS LEARNED

- Majority of incidents e.g. IOD's can be attributed to inadequate Risk Assessments
- Culture Issues (old hands)?



Did you do a Risk Assessment before commencing your task?



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QUESTIONS?

THANK YOU.....