

## **THE REALITIES OF IMPLEMENTING AN HSE MANAGEMENT SYSTEM IN A JOINT ORGANISATION OF MIXED CULTURES AND LANGUAGES**

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Groupement Berkine (GB) is the joint operating organisation formed in 1998 between Sonatrach, and Anadarko Algeria Company, a wholly owned subsidiary of Anadarko Petroleum Corporation. GB manages and operates the development assets of the parent companies in blocks 404 and 208 in the Berkine Basin.

Initial contacts between the companies started in 1986 with a Production Sharing Agreement being signed in 1989. Following extensive successful exploration, first oil was produced in 1998. The current production capacity is 285,000 BPD, which is expected to double by 2007.

GB is staffed from a wide range of different cultural backgrounds comprising Algerian nationals together with North Americans and Western Europeans. There are 3 main spoken languages (French/Arabic/English); French and English languages are the working languages.

The cultural mix is compounded further by a range of HSE system implementation challenges. In addition to the language and cultural differences, the rotational nature of the workforce adds to the communication difficulties of the organisation, as well as the normal transitional nature of oil & gas prospecting from seismic exploration, through project development and into operations of more than 10 fields.

**KEYWORDS:** Safety Management; Algeria; Different Values; Different Cultures; Different Languages

### **OBJECTIVE OF THIS PAPER**

This paper describes some of the ongoing challenges that we face in implementing HSE Management Systems in Groupement Berkine, and some of the activities we have undertaken to implement these changes. The paper is presented in three parts;

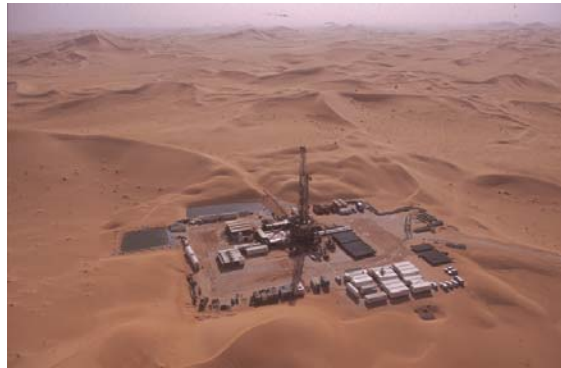
1. History of Groupement Berkine
2. Groupement Workforce Relationships
3. The Challenges which face Groupement Berkine
  - a. The background from where Algerian Safety Culture has developed
  - b. The challenges within Groupement Berkine today
  - c. The direction to attain international best HSE practices

The paper is the result of over four years experience gained by the authors, and gives an insight into some of the real issues that are faced on a daily basis.

### **HISTORY OF GROUPEMENT BERKINE**

Groupement Berkine is a non-asset holding, joint operating venture (51%: 49%) between Sonatrach and the Anadarko Corporation. Sonatrach invited Anadarko into Algeria in the late '80s, to assist in boosting exploration effort in the country.

Anadarko was awarded the licences to explore in four blocks in the east of the country, blocks 404, 208, 211 and 245, and established a base camp in Hassi Messaoud, to provide logistic and material support to its seismic and exploration drilling activities. After extensive seismic work and the drilling of a number of exploration wells, 12 fields of significant production potential were discovered from 1993 to 1998.



The first phase of development required a total investment of approximately \$200 million, which included the development of the HBNS field to produce 60,000 barrels per day from a single oil & gas separation "train". An EPC Contract was established with Brown & Root/Condor and first oil was produced in May 1998. All produced gas is re-injected back into the reservoir.

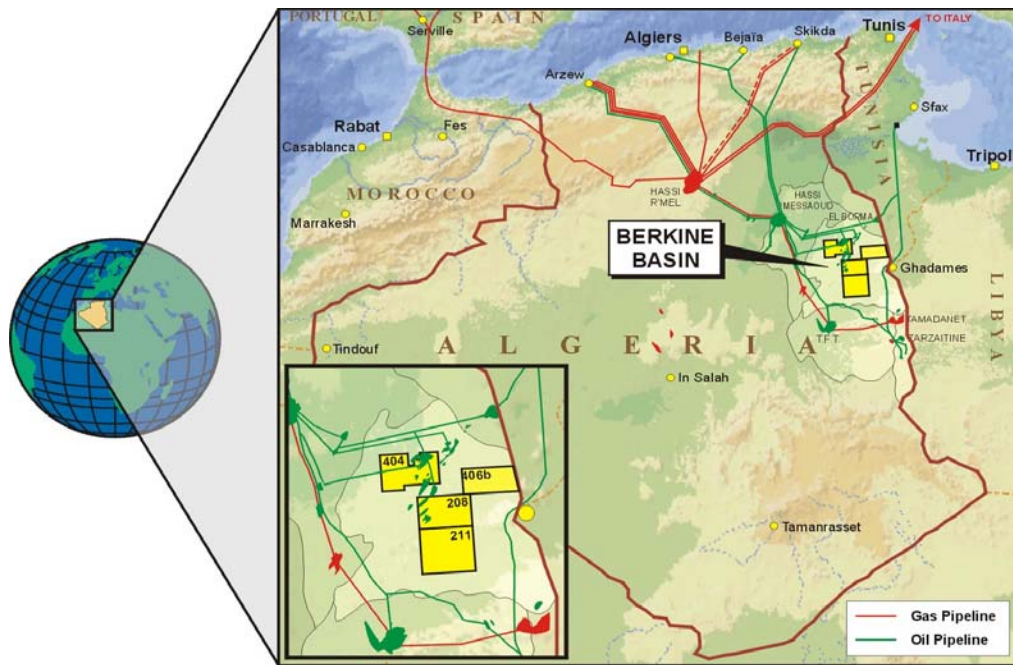


In 1999, the agreement for the second phase of development was signed, requiring a further \$700 million to design and construct three additional oil & gas processing trains, plus the necessary additional gas compression and water injection facilities to extend production to 285,000 barrels per day. Construction, commissioning and start-up were completed in April 2002. The four trains now produce from two main fields HBNS and HBN, and five satellite fields, in all totalling nearly one quarter of Algeria's oil production. In order to keep pace with developments, five rigs are drilling up the reservoirs, and wells are currently being completed and commissioned at an average of one per week.

The formation of the joint Sonatrach/Anadarko "Groupement Berkine" was initiated in 1998. The Groupement is staffed by employees of both parent companies, together with a number of national and expatriate sub-contractors. The Groupement is also about to embark on a new development in Block 208, which is located some 60 miles to the south of HBNS.

With all the oil & gas developments that are rapidly taking place in the country, the challenges placed upon the workforce and the environment is significant.

### WHERE WE ARE LOCATED



### GROUPEMENT WORKFORCE RELATIONSHIPS

This section sets out the underlying complexities associated with the day-to-day working relationships of the Groupement personnel, and describes some of the activities that the Groupement have taken on board to overcome any identified discrepancies. There are many advantages of bringing together different cultures in the workforce; these predominantly result in everyone learning from each other's perspectives.

### MIX OF NATIONALITIES

There are approximately 400 Algerian nationals and 160 expatriates employed within the organisation, with around 16 nationalities from as far afield as Canada, United States of America, Belgium, Holland, France, Italy, Trinidad, New Zealand, Australia, Peru, Hungary, South Africa, Germany and the UK.

## STATUS

Sonatrach being a State owned company ensures for its staff a fairly stable employment - practically guaranteed - and provides for them and their families an extensive social protection programme. Sonatrach is becoming now more conscious about cost reduction and is undertaking programmes which remind us of what most of the international oil and gas operators have had to undertake through the 1990's of "contracting out" its workforce and services, as part of the cost reduction exercises and downsizing.

As with most joint organisations, there are real and perceived differences in positional status amongst the staff and contractors, and the different levels of management within the organisation. This criterion is held at a higher level of importance amongst some of our colleagues with more traditional values, than others within the Groupement. However, status does make a lot of difference to some people who have only worked in highly denominated and multi-layered organisations, in comparison to those that have experienced the past decade of working elsewhere within "flat management structures".

## VALUES

The Groupement Berkine HSE values are set out in the HSE Policy. The policy and the HSE Management System now has the joint agreement of both sets of parent companies' senior management groups, to enable the HSE function to set its course in the same direction as other like minded Oil and Gas Producers' members in the international oil and gas community.

Environmental values are presently being tested in Algeria, and particularly within the Groupement. Historically, the country has yet to establish an infrastructure that is able to manage its domestic and industrial waste effectively. Until fairly recently, the country has had very little motivation or pressure do so. However, with the advent of international loans requiring formal Environmental Impact Assessments (EIA) to be undertaken as part of the commercial agreements, and many senior government officials recognising the commercial and social benefits of good environmental standards, there is a need to establish recycle and regeneration infrastructures across the nation. Groupement has already taken the initiative in conducting EIAs at the start of every field development.

One of the action points raised in our EIA has resulted in the establishment of environmental steering and technical committee groups within the Hassi Messaoud region, to review the methods used, and the criteria set for the treatment of cuttings associated with drilling waste. Groupement Berkine and the other operators are presently working towards better environmental standards in this way.

The differences in the "perceived values" that each nationality brings to the Groupement are sometimes evident. For example, the Algerian culture is very strong on inter-personal relationships. This is less apparent with the Western culture, which is usually focussed singularly on the business in hand.

## PROCEDURAL BUSINESS PROCESS VS. PRAGMATISM

Another noticeable difference in working practices that is evident within the Groupement is the impact of some of the more bureaucratic procedural business processes. As we try to modernise and streamline our practices and procedures, we do our best to jointly consider those that are

effective and efficient for Groupement. Procedures that have been designed for use within a large single organisation need to be adapted for combined organisations such as GB, particularly when the business performance improves with a lesser administrative workload. Challenging the procedures when they do not work is itself a cultural challenge for many people.

One good example of this process is the development of the Groupement Berkine Permit-to-Work (PTW) Procedures. In 1997, the joint organisation recognised the need to establish safe systems of work ahead of introducing hydrocarbons into the new plant that was under construction. In recognition that it was impracticable to expect to implement comprehensive offshore standards in the Sahara Desert, it was decided to take the framework of a PTW Structure familiar to Sonatrach staff since the 1960's, and develop the procedure to ensure all the key elements of a safe system were included. Experience from the subsequent years of operation has now shown we are in a better position to make the changes to elevate the safety standards to the next higher plane, and as such, the PTW System is presently being augmented.

We need to regularly take stock of all these processes, and work to the solution that takes us forward to the benefit of both parent companies and partners.



#### OUR “CULTURAL MIX”

As has already been discussed above, we have a wide range of different nationalities, with the rich mix of different cultures that the Groupement has fostered. Locally, we can identify Algerians with more traditional values. Many people who have worked for the national operator for many years will be well versed in the company's methods and procedures of doing business, and may often need convincing of different methods needed to meet Groupement objectives. Many of the younger staff have been raised and educated in a society that is now exposed to the same day-to-day exposure to Satellite TV and the Internet, that is available anywhere else in the world. Contemporary values are much more readily adaptable to working within GB methods.

From an expatriate perspective, there are differences between the “West Texan” and “North Sea Tiger” cultures. When one adds the International “Mercenary” culture - in the financial sense - of the long-term expatriates to the equation, there is certainly an interesting mix of people from totally different backgrounds, adding to the challenge of implementing consistent sets of standards and business processes.

### OUR DIFFERENT LANGUAGES

Communication is one of the most difficult aspects of Groupement's business. The HSE function by definition requires good communication, to enable it be an effective factor in improving business performance. Groupement has therefore instigated extensive language training to address this issue.

### THE WORK PATTERNS

To amplify the difficulties in communication, this is exacerbated by the complexity in work patterns. The vast majority of people at Groupement Berkine work a phased 28 day on/28 day off rotational cycle. Job handover is also difficult when the back-to-back usually travels to a different national or international airport destination, some people never see their counterpart for many months. This is further complicated by some that work 12 on/11 off, some Algerians work a normal Saturday to Wednesday week. Anadarko works to the international Monday to Friday cycle.

The transient nature of oil & gas work also complicates matters for many people in the management team, particularly in the HSE function. The HSE function covers all aspects of the business, and all departments interface with the HSE managers. The exploration of oil starts with seismic data acquisition at very remote desert locations, which brings its own logistic problems, particularly in emergency response. Exploration and development drilling also takes place remotely, as does the well completion and servicing activities. When we add plant design, fabrication, construction and production activities across the field - any combination of these will be taking place at any given time - across more than 10 oil fields, we start to develop some indication of the scale of task in trying to develop and implement HSE Management Systems at Groupement Berkine.

All of the above factors bring their own challenges to the organisation's success, particularly in communication with one another!

### **AN INSIGHT INTO THE CHALLENGES WHICH FACE GROUPEMENT BERKINE**

On the basis of the foregoing information relating to the multi-cultural mix in the workforce, we can see one dimension of the challenges that Groupement Berkine is faced with. When we add the **background** from where the Algerian Safety Culture has developed from, we can start to recognise the full picture of the **challenges** that face Groupement Berkine today. To conclude our paper, we will present our opinions on the **direction** in which Groupement Berkine will need to go to attain international best HSE practices.

### **BACKGROUND FROM WHERE ALGERIAN SAFETY CULTURE HAS DEVELOPED.**

The background to Algeria's Safety Culture was originally derived from the French Regulatory Model, i.e. based upon the institutions of occupational medicine and the labour inspectorate.

In 1967, the first formal Algerian Safety Legislation was established with a National Charter and an Ordinance upholding French health and safety law, whenever it was not covered by local legislation and rules.

#### ESTABLISHMENT OF THE ALGERIAN LEGISLATION

In 1970, the National Institute of Hygiene and Safety (NIHS) and the Body for the Prevention of Accidents in Construction (OPREBAT) were established, in a similar context to the French set up. Furthermore, in 1988, a law was introduced with the goal of aligning Algerian Standards to those recognised internationally (Loi No 88-07 du 26 Janvier 1988 relative à l'hygiène a la sécurité et le médecine du travail). This legislation is the most significant, as the responsibility for HSE in the workplace now rests with the Employer – in our case, Sonatrach.

#### PARALLELS WITH THE EU LEGISLATIVE MODEL (EXAMPLE UK)

Loi No 88-07 in Algerian Law is similar in principle to UK's Health and Safety at Work etc Act 1974. It places the onus upon senior management for the implementation of health and safety policy, and the requirement to provide the necessary resources to prevent accidents in the workplace. By definition, it has similar requirements to the French Health & Safety Law of 1976.

An Algerian Environmental Agency was created in 1993, followed by the Algerian National Safety, Hygiene & Occupational Medicine Council – 1996. These bodies are the Algerian equivalents to the Environmental Agency (and SEPA), and Employee Medical Advisory Service. The following paragraph lists the Regulatory Bodies in place in Algeria.

#### REGULATORY BODIES

The following organisations are identified as Algerian Government sponsored organisations that have an interest in the health, safety and environmental aspects of work activities throughout the country:

- 1) Direction de la Protection du Patrimoine (DPP) – an independent organisation whose resources are mainly targeted towards the Oil & Gas Industry. The DPP conducts independent checks and inspections on all new facilities, from design through to commissioning, and grants the necessary approvals to produce oil.
- 2) Algerian Labour Inspectorate (part of the Public Health Ministry) – there is a legal obligation to report all accidents in the workplace that involve employees. Significantly, there is no obligation to report accidents that involve employees of sub-contractors, as that is deemed the responsibility of the sub-contractor. The “compte rendu” accident reports are submitted to the authority principally as a means of social recompense from the accidents/illness, and not as a means to learn lessons from the event.
- 3) Le Haut Conseil de l'Environnement et du Développement Durable (HCEDD) – this is the new Ministry of the Environment that has been set up in Algeria, with the role of setting Environmental Targets for industry. It has not yet been established long enough to give any measurable indication of improvement, however, Groupement Berkine along with several other operators in the region, are now facing more pressure to clean-up the solid, liquid and airborne emissions from our businesses. (*See note above on EIAs*)

The intent therefore, to attain improved HSE Standards in the workplace is reasonably clear within Algeria, however in practice, it is not always effective, as there are insufficient resources allocated to meet the scale of the problem in the country.

#### MAIN HEALTH, SAFETY AND ENVIRONMENTAL DIFFERENCES TO THE EU (UK EXAMPLE)

At present, there is no independent national enforcement body in existence in Algeria for neither Health & Safety, nor for the protection of the Environment. The Safety Culture is still developing, and apart from locally introduced initiatives in the industry sector (e.g. by the Hassi Safety Council), there is little regulatory pressure to share lessons learned nationally amongst the industry sector, by systems such as Safety Alerts.

The "Regulator" has not been set up as a learned body and does not provide technical advice or guidance; it is purely an administration function which deals in claims for accident compensation only. Under-reporting of accidents is also a major problem nationally, and as with most societies, we have much work to gain everyone's understanding on the need to report accidents and incidents in the workplace.

#### THE CHALLENGES WITHIN GROUPEMENT BERKINE TODAY

##### ROTATIONAL NATURE OF THE WORK

Essentially, everyone who works a rotational format lives two separate lives! After 28 days in the desert, Groupement personnel take off for 28 days relaxation and regeneration. This involves periods of adjustment for every individual returning to the field, and returning home.

##### INTERNAL COMMUNICATIONS

As highlighted earlier in the paper, we have numerous languages and cultures to deal with, as well as the logistical difficulties of installing suitable communications hardware in a desert environment. To make progress in communications in general, Groupement needs to adopt a communication strategy that encompasses the "people" communication issues, as well as the communication "hardware" needs of the business.

##### AIMS AND OBJECTIVES FROM THE PARENT COMPANIES

We have pointed out some of the differences in values that each parent company embraces. There are different perspectives on one organisation that has its sights set firmly in Algeria, to another that operates internationally, but predominantly in a regulatory environment. Groupement needs to adopt the best of both sets of corporate HSE requirements. Key Performance Indicators (KPIs) are recently evolved management jargon that mean different things to different people. Groupement Berkine has a need to set KPIs that are specific, measurable objectives with the agreement of both parent organisations.



#### ASSET PROTECTION VERSUS PEOPLE PROTECTION

With effective HSE management systems in place, Groupement can move towards an integrated approach which encompasses asset protection as well as safety of individuals, and the damage to the environment. By adopting hierarchical risk reduction principles – remove the source hazard where practicable; reduce the realised consequences; engineering controls; procedures; personal protective equipment (PPE) etc – we will achieve the win-win situation for the safety, environmental and production KPIs.

#### ENCOURAGEMENT IN DECISION TAKING, AND DELEGATION

As with all other successful businesses, the management level at which critical decisions are made with regard to the HSE impacts upon the business, needs to take cognisance of the wider impacts these decisions affect. We cannot expect success with a culture of moving issues up the chain of command, which is inherent in much of Groupement's business. Confidence must therefore be developed in placing appropriate delegation levels, to execute these decisions.

#### ACCEPTANCE OF RESPONSIBILITIES FOR OUR ACTS AND OMISSIONS

Many would argue that human nature itself is the main source of a "blame culture". In our everyday lives, the media rarely assist us in trying to look more positively on the outcome of accidents, hence it becomes exacerbated and even more difficult to change.

One of the most important aspects of making the effort to move away from apportioning blame is gaining a clearer understanding of the responsibility and accountability issues. Groupement itself needs to align itself to a position where we are able to look forward to changes in the way we conduct business.

#### FOSTERING A POSITIVE REPORTING CULTURE

At present, the legislative driver in Algeria is financial redress for the individual, and not "lessons to learn" for the organisation. There is presently reluctance within Groupement to report accidents, incidents and near-misses. By fostering a positive reporting culture, we can start to gain lessons from human errors and omissions.

#### MANAGEMENT, EDUCATION AND COMMITMENT

No-one becomes a competent manager overnight. Groupement therefore needs to train and educate all levels of its staff in understanding the key principles and benefits of effective HSE management systems to realise the benefits. As with all successful businesses, Groupement requires the leadership to make the necessary changes to bring about the improvements in HSE performance.

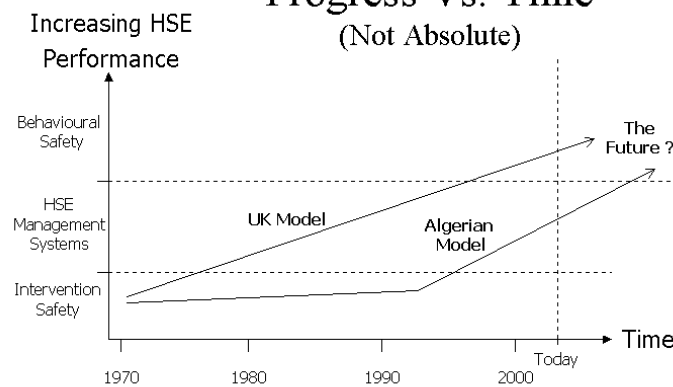
#### HSE "TIME-LINE"

The following HSE "Time-line" describes a typical development of HSE progression against time. The two graphs plot the progress of HSE within the UK, and the second plot shows the relative Algerian model. The plots are not precise, but indicative of the HSE

cultures in existence at any given time for the oil and gas industries. Three distinct phases are identified:

1. “Intervention Safety” – our heritage.
2. Implementation of the HSE Management approach - this is where Groupement Berkine working is today. This is discussed in three contexts; People, Plant and Systems.
3. Behavioural Issues - currently in vogue in EU, for future Groupement Berkine consideration, and not explored further at this point.

## Representation of HSE Progress Vs. Time (Not Absolute)



### “INTERVENTION SAFETY”

The following activities are examples of our “inheritance”:

- We have a relatively large number of fire fighters employed by Groupement Berkine; this is a tradition Groupement has inherited from Sonatrach. The approach for the intervention team is literally to fight the fires when they happen, and hence the balance in resources is traditionally directed towards mitigation of consequences, and less to the prevention of fires. Prevention duties are assigned to the prevention team only. This approach is similar to that adopted in the UK in 1970’s.
- Our plants are engineered to international codes and offshore design standards. There is some degree of over-capacity in the engineering integrity of the plant, though there are benefits in constructing robust facilities at remote locations.
- Measurement of “Safety” Performance is still reactive (frequency rates only), Groupement have not developed active indicators as yet. Groupement’s own lost-time accident frequency rate (for those accidents that have been reported), is no worse than the national average. However, as stated earlier, we do need to create a “positive reporting culture”, to obtain more accurate reactive indicators.

**IMPLEMENTATION OF THE HSE MANAGEMENT APPROACH**

The following HSE management activities are currently being implemented within Groupement Berkine:

**PEOPLE**

- Training in HSE Management techniques is being undertaken across all disciplines and departments, led by an Algerian Professor in HSE Management. The training is conducted in French and English, and the cross-cultural issues, which relate to all parties are being addressed.
- French and English Language Training is a priority for everyone. As stated earlier in this text, effective communication will be improved by addressing the language barriers.
- HSE information is now integrated into the training provided for Operations and Maintenance staff. O & M staff are now being taught the basic safety concepts required for work on the plant, in addition to Prevention and Intervention staff. The aim is now to integrate safety into the role of line management.
- HSE Inductions are now being undertaken for all new starts and visitors. All the basic requirements for general safety and well-being at the field locations are being addressed.

**PLANT**

Following on from our stated objective of improving our risk management strategy, the following list of activities gives examples of the improvements we have made:

- Hydrocarbon inventory minimisation – we have installed and commissioned Custody Transfer Meters at our Central Processing Facility, replacing the need for large Crude Oil Storage Tanks. This has required a change in the Algerian Legislation relating to oil movements metering, and has taken over 4 years to implement.
- All new plant has been fully HAZOPed to international standards, and all the actions generated by the study have been closed out.
- In our efforts to change our focus from “putting the fire out, to preventing the fire from occurring in the first instance” – we have made extensive use of the latest Gas Detection Technology throughout our new plant.
- A Computerised Maintenance Management System is in use at the plant, linked to safety criticality of equipment parts. This determines the spares stock as well as prioritising critical maintenance activities.
- Operationally, the performance of the plant and the drilling is good, and losses are maintained at a minimum. Training simulators have been developed and used extensively for training of the operations staff, particularly in simulating plant upsets and emergency conditions.

**SYSTEMS**

The following activities are a result of the efforts we have made to implement HSE management systems at Groupement Berkine:

- The Groupement Berkine HSE Policy and Management System has now been approved by senior management.

- HSE Dept has direct influence on Groupement Berkine senior management. The HSE function has a direct reporting link to the General Managers.
- The Groupement HSE Plan is continuously being monitored for performance, and developed with experience gained.
- Better communications (both methods and hardware facilities), to enable the correct HSE messages to be relayed to all. We have internet access in the desert, and the same opportunities to relay messages rapidly, as anywhere else in the world.
- Emergency Response capabilities are being improved continuously – ER is not easy with the logistical difficulties posed by a desert environment, and the diversity of different companies within Groupement Berkine. Our biggest challenge is restricted by the lack of an effective medical infrastructure in the Hassi Messaoud/Hassi Berkine region.
- Accident and Incident Reporting is actively being encouraged.

#### **THE DIRECTION TO ATTAIN INTERNATIONAL BEST HSE PRACTICES**

The third phase following “Intervention Safety”, and “HSE Management Systems” is perhaps, “Behavioural Safety”. Groupement Berkine is not ready for this step in direction, though the following considerations may well influence our direction in the future:

- Staff Cost reduction - for example, by the reduction in the number of expatriates in the Groupement workforce. Like all businesses, there will be progressive pressure to reduce the operational expenditure within Groupement Berkine. As our workforce gains in experience and expertise, then the emphasis to reduce numbers will become more apparent.
- Full compliance with regulations - establishment of an HSE Regulatory Body? There are early indications of environmental pressures being applied on the industry, there is no reason to suggest that we may also be more forcefully required to raise safety standards across the industry.
- Outside advantage of looking at the success (or failure) of HSE initiatives used elsewhere in the world, before taking action internally. Groupement Berkine is in a strong position to adopt good practices tried and tested elsewhere.
- Algeria is committed politically to aligning itself with International Best Practices – this is quoted at the highest government levels.

Like everywhere else in the world, we will only succeed with our own senior management’s commitment and effective leadership!

### **CORPORATE MATURITY**

In summary, Groupement Berkine is a very new organisation and in terms of maturity in HSE performance - we still have some way to catch up with the major international oil and gas operators - but we are making visible progress!



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