



*Installation of SMI PET line at Egyptian
"National Company for Producing and Bottling natural water & olive oils"*

Water from the desert

At the western end of the Egyptian desert, on the border with Libya, around 300km south-west of Marsa Matruh, the Siwa Oasis offers its visitors an almost unique experience. The presence of water in the oasis encourages agricultural activities, related food processing businesses and a small number of factories specializing in the production of mineral water. Among these, the "National Company for Producing and Bottling natural water & olive oils" stands out. Owned by the Egyptian army and controlled by the NSPO (National Service Products Organization), it produces and markets Safi mineral water. NSPO chose SMI as a partner for the engineering study and the final installation of a complete 6,000bph PET SBM line.

The Siwa Oasis



The fertile lands of the oasis have enabled the development of agricultural production based mainly on olives, date palms and alfalfa which are flanked by small crops of other kinds of vegetables and fruit, mainly intended for local use. As well as its agricultural activities and food processing (dates and olives) companies, Siwa is also a prestigious industrial centre. Tourism is the second most important economic sector in the area, attracting around 10,000 visitors per year. The Siwa Oasis springs up out of nowhere with its palms and trees which extends, at 50km from the border with Libya, between the Qattara Depression and the Egyptian Sand Sea. In the oasis, located on the ancient trade route for dates which terminates at Memphis, there are over 300 freshwater springs

which water thousands of date palms and large olive plantations. Between Siwa and the capital Cairo, nothingness reigns, or rather 550km of sand. During the course of its long history, it has remained largely isolated from events which took place on the banks of the Nile and has developed independently from the rest of Egypt. Until the 1980s, the most common means of transport was carts pulled by donkeys. The new asphalt road connects Siwa to the city of Marsa Matruh, to the North-East. The oasis is located in a depression, whose depth reaches 60m below sea level, which stretches for around 82 km. The Siwa depression and its lakes, one of the most spectacular places in Egypt, are the remains of an ancient sea which later evaporated and which extended up to here.

Natural par excellence

Safi natural mineral water is known throughout Egypt for its high quality and many beneficial properties. Thanks to modern and sophisticated systems, water is extracted from a spring in the Siwa Oasis at a depth of 1,000m, from which it reaches the surface in a pure and uncontaminated state. As evidence of these characteristics, the National Company for Producing and Bottling natural water & olive oils obtained the ISO 9001: 2008 certification for its quality management system. In addition, production takes place under the direct supervision of the Ministry for Health and in accordance with international quality standards. Safi water is particularly recommended for diets that are lacking in sodium and is free from iron and manganese. Its high fluorine content helps to protect the teeth. In all stages of production, the Egyptian company uses fully automated machinery, to which, in response to growing market demand, a new bottling line has recently been added.

Engineering study and implementation

Asked about the main factors that led Safi – National Co. for Producing and Bottling to invest in a new 6,000bph bottling line, Gen. M. Moawad of Safi Bottling Water responds:

“Primarily, the strong increase in demand for Safi water. In order to bring our production capacity in line with market demand, it was absolutely essential to purchase a new 6,000bph PET line, which included a four cavity Smiform stretch-blow moulder for producing containers of 0.2/0.66/1.5l. The new facility will allow Safi to increase sales in Egypt and also to satisfy demand coming from abroad.”

The engineering study of the line for the new 6,000bph system was entrusted to SMI. The SMI project managers looked very closely into the production requirements of the National Co. for Producing and Bottling water & oils. Following a preliminary study, several inspection visits to the Sawi Oasis and careful evaluation of all logistical aspects, they drew up a

technical solution which was in line with the company's requirements, both in terms of production and finance. In order to guarantee maximum operating efficiency of the line, SMI also presented the customer with an accurate analysis of the cost dynamics (Total Cost of Operation), a 3D graphical simulation of the new system and a detailed study of the interactions between the different machines which co-exist on the line. All the Smiline conveyors were designed to respond appropriately to requests for fluidity and flexibility. The SMI systems allow, among other things, for optimal management of product flows, thanks to a careful study of the dynamics of accumulation, distribution and movement of the loose containers and packaged products. The modular structure of the Smiline conveyors easily adapts to various types of bottles and product flows, with format changeover times reduced to a minimum, which allows for the rapid switch from one type of production to another. A Smiform SR 4 rotary stretch-blow moulder has been placed at the “head” of the bottling line, which is capable of producing up to 7,200bph. M. Moawad comments: “During the process of growth of any company it is absolutely essential to have at your side an established and well-organised supplier, which guarantees that our company achieves maximum production efficiency in the quickest possible time. The technical solutions adopted by SMI for this project were designed with our requirements for rapid returns on investment and maximum energy saving in mind.”

Bottle design

The design and creation of the new PET containers of 0.25l / 0.66l / 1.5l, created by the Smiform designers, took account of the functional, economical and aesthetical requirements of the customer. The “design” of the new Safi water PET bottles is actually inspired by the Egyptian company's image and its logo, which includes the symbols for the sun, water and palm trees. In addition to their “design”, the “appeal” of the new PET containers results from the accuracy and precision with which Smiform has created the moulds used to produce them.

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