4.2.3 Land

4.2.3.1 Land use

Main land uses in the area of study are:

- residential (Deir Ali is the most important inhabited centre, with 1,800 persons; some isolated houses are present);
- industrial (a ceramic factory near LAB site);
- agricultural (zones North-East of Deir Ali).

No previous use is documented for LAB site.

4.2.3.2 Soil and subsoil

In **Fig.4.10** the geological map is showed. LAB site is situated in a valley whose geological formation is classified as "Proluvium – Rock debris", of the Quaternary period.

Information on the lithology give a diffused presence of basaltic compact and massive layers, on the top of a porous and cracked rock layer.

Fine grained, well-crystallized varieties are predominant with presence of Chlorite, Carbonate, Zeolite, Iron Hydroxides. Lenses of volcanic tuff are very frequent among the basalt and the sources of basalt ereption are not known.

Local investigations, in order to drill a well, give the following lithologic sequence from the surface down to 219 m (see also **Fig.4.11**):

- 2m, red brown clayey layer with some grains of Quaternary basalt
- 78m, massive and compact basaltic rocks green and greenish-grey or dark-brown in colour
- 10m, cracked basaltic rocks contains porous filled of calcite or zeolite crystals and red sandy basalt
- 25m, sand basaltic rocks
- 35m, basaltic rocks contains porous filled by carbonate or zeolite crystal and red basaltic sands with volcanic tuffs, the cement of the tuffs is carbonate; ash material after nated by basalt

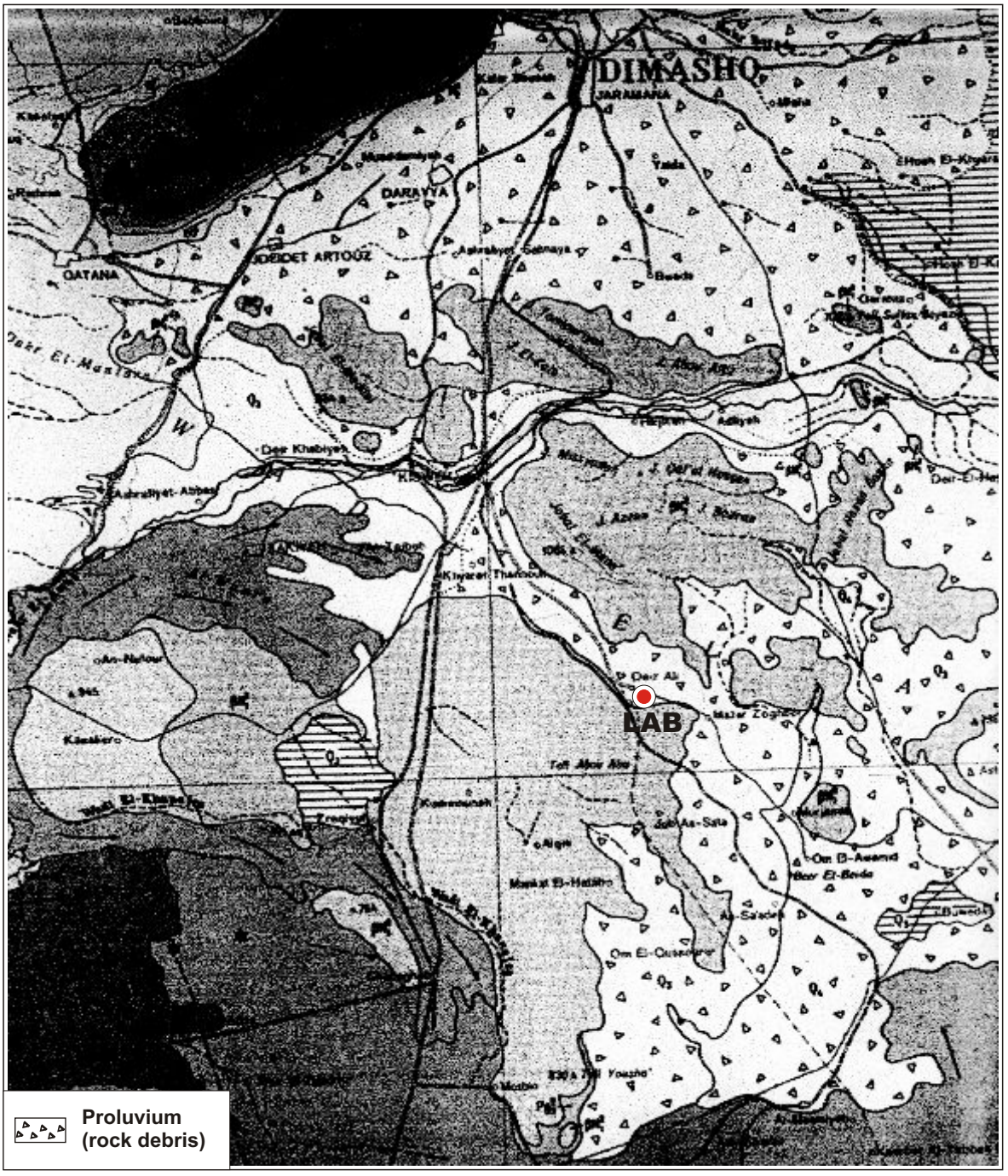

Fig. 4.10: Geological map

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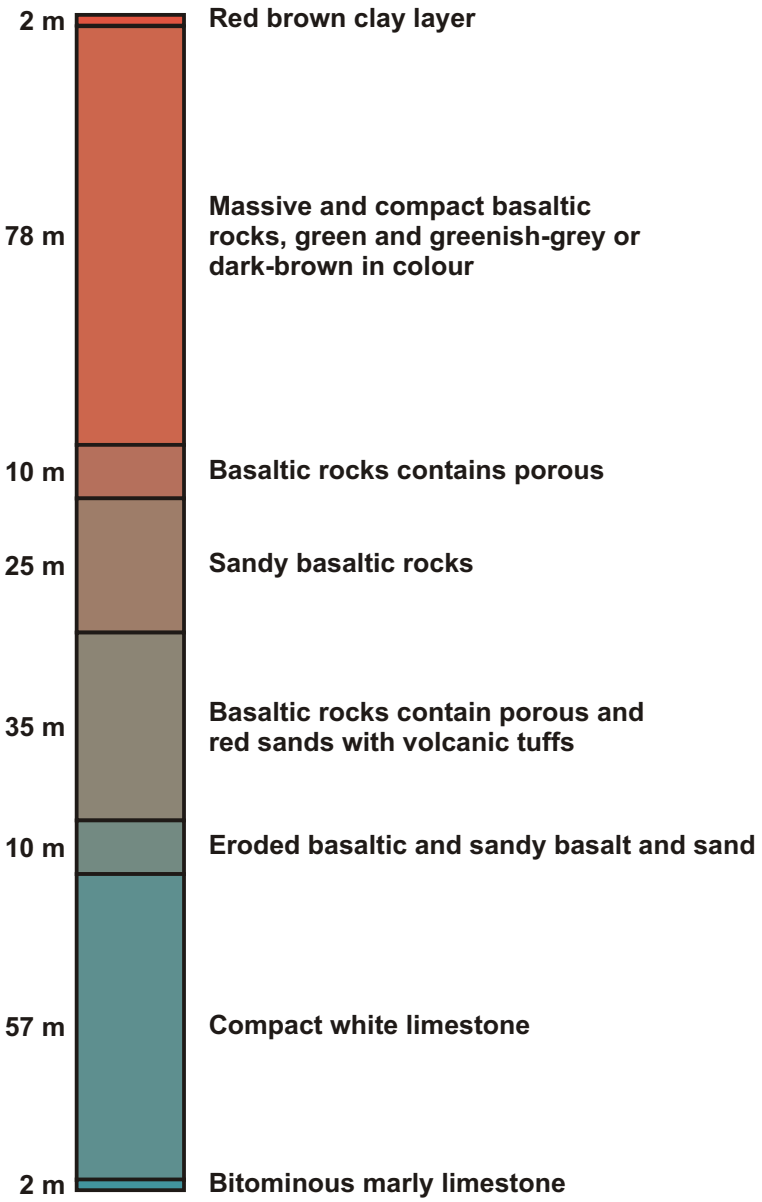

Lithological section of the LAB site from the well drilled at 215 m depth

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Fig. 4.11: Lithological section

- 10m, eroded basaltic and softy basaltic sand
- 57m, compact white limestone with fractures (Middle Eocene), Paleogen age
- 2m, black bituminous marly limestone (Middle Eocene), Paleogen age.

All the basaltic rocks are Neogen age (Middle Meocene N,B) and over lain on the paleogen limestone unconformity.

4.3.3 Other components

4.3.3.1 Noise

As for air emissions, also for noise emissions the highway traffic is to be considered the main source in the area.

Typical noise levels at the border of such a highway can be about 80 dB(A). Their influence at the border of the nearest inhabited areas (farms south of LAB site) can be estimated in about 60 dBA, on the base of the following equation [3*]:

LAeq = 10 log(1,8 F V2 K/d) con K= 1V/ 1040 + 23,5 p/vd,

where

F=hour vehicle flow
V=mean vehicle velocity
d=distance between road middle line and receptor
l=light vehicle percent
p=heavy vehicle percent

In the present case (see also 4.3.1):

F=540 auto/h,
V=100Km/h,
d=15m,
l=64%,
p=36%.

* [3] Equation proposed by US Federal Highway Administration, "Rumore e Vibrazioni, effetti, valutazione e criteri di difesa", Mario Cosa, A.Cocchi, S.Collatina, G.Cosa, L.Rocco, M.Vicoli, Maggioli Editore, 1990

4.3.3.2 Landscape

LAB site is located in a plain, desert area. In the following photos some imagines of the zones around the site are reported.

In **Fig.4.12**, first photo, the heights of Tell Salalem, quite in front of LAB West side, are visible. The dark, partially rocky type of soil is clearly visible, from this and the following images.

In photo 2, the ceramic factory in front of LAB North side is visible; in photo 3 Deir Ali village is visible, North East of LAB site.

In **Fig.4.13**, photo 4, a corner of LAB site yard is shown and, more distant, the farm, in front of LAB South side.

4.3.3.3 Flora and fauna, ecosystems

In all the region changes in vegetation typologies are in progress, due to desert areas expansion from East to West.

Two shrub types were identified [c]:

-associations of Artemisia (of the desert steppe specie) and Anabasis syriana

-Poterium Spinosum (rosas), progressively disappearing because it needs more water.

Neither particular autochthonous species, both vegetal, flora and fauna, nor ecosystems were identified in the area.

[c] information gained from University of Damascus, Faculty of Sciences, Department of Botany

Photo 1: From LAB site toward west. The thin line in the middle is the Highway

Photo 2: From LAB site toward north

Photo 3: From LAB site toward east. On the right the LAB site fence and far, in the middle, Dear Ali Village are visible

Fig. 4.12: Landscape around the LAB site

Photo 4: From LAB site toward south

Photo 5: Soil

Fig. 4.13: Landscape around the LAB site

4.4 Baseline data synthesis

In the following table main features of environmental components status in the area of study is summarized.

Environmental Factor/ Component	Present status	Note
Air	Main air emission source is presumably traffic along the highway. Minor emissions from the ceramic factory.	Traffic pollutant influence can be considered mainly limited to some hundred meters around the road.
Water	No river are present. Water supply comes from groundwater wells. Five wells are present in LAB site and Daaboul propriety	Principal groundwater quality parameters: Conductivity 700 µS/cm Total hardness 11 °F
Land *Soil and Subsoil*	Land use in the area is limited to small inhabited areas (Deir Ali) and isolated houses. Some cultivated zones are present (farm near the site, areas north-east of Deir Ali). No previous use for LAB site is documented. Thin soil layer (red brown clayey layer), with underlying compact basaltic rocks and cracked basaltic rocks.	---
Noise	Noise emissions come mainly from traffic along the highway	About 80 dB(A) near the highway, about 60 dB(A) near the site and the farm
Landscape	The area is a plain, rocky desert one, among two main mountains groups. Small, isolated buildings are present. About 700 meters from LAB site a ceramic factory is present.	---
Flora and Fauna, Ecosystem	In all the region changes in vegetation typologies are in progress, due to desert areas expansion from East to West. Neither particular autochthonous species, both vegetation, flora and fauna, nor ecosystems were identified in the area	---