



**MINISTRY OF ENERGY AND MINERAL RESOURCES**  
**Mineral Status and Future Opportunity**

**DOLOMITE**

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**2014**

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## Dolomite

### 1. Introduction

Dolomite ( $\text{CaCO}_3\text{MgCO}_3$ ) is a sedimentary rock occurs as a sedimentary deposit similar in nature to limestone. Most dolomite deposits are as a result of replacement of Mg instead of Ca during the recrystallization of limestone (Dolomitization), while some dolomite precipitates directly from seawater. The dolomite rocks contain more than 50% of both calcite and dolomite minerals in which dolomite is more abundant than calcite.

Theoretically, pure dolomite contains:

CaO: 30.4%

MgO: 21.8%

CO<sub>2</sub>: 47.8%

Impurities in dolomite include: Clay minerals and chert.

### 2. Uses

The uses of dolomite are classified as follows:

- Direct applications of dolomite (Agriculture, Cement mortar, and treatment of cracks).
- Uses of selectively calcined dolomite (produce, Magnesium oxychloride cement, Magnesium oxysulphate cement, Inorganic magnesia foams, and silicate bricks)
- Chemicals from dolomite (Magnesium oxide, magnesium hydroxide, magnesium carbonate).

### 3. Locations

Dolomite in Jordan found in many different areas these are: Fig. (1)

#### 3.1. The Area Between Wadi Isal and Wadi Ahemir Iasal

It is located about 30km west of Karak and is defined by the following coordinates: (Palestine Belt)

E: 201400 – 202300

N: 1067650 – 1068550

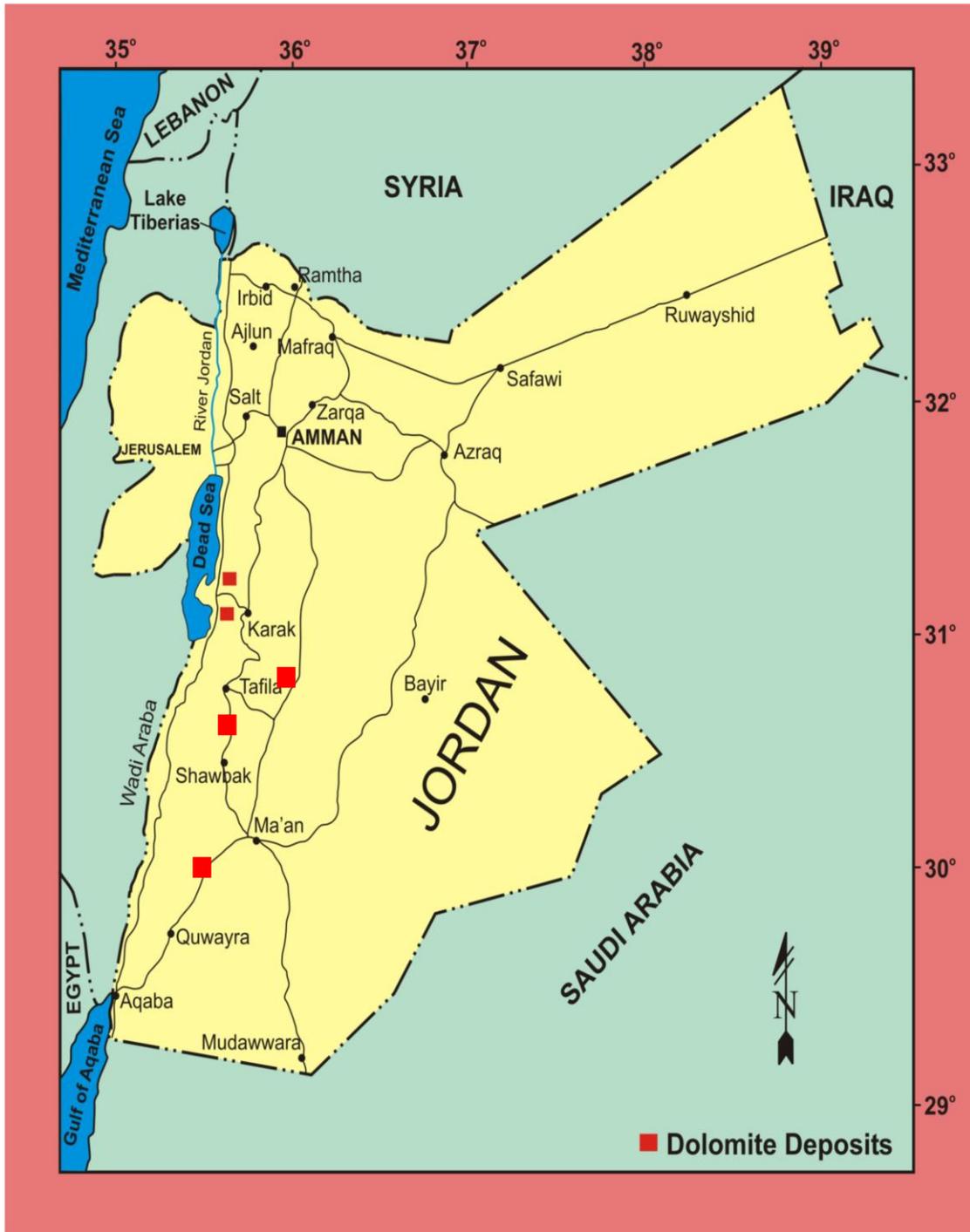


Figure (1): Location map of Dolomite deposits in Jordan.

### 3.2. Ghour Al-Haditheh Area

It is located about 25km west of Karak, 0.5km east of Al-Haditheh and is defined by the following coordinates: (Palestine Belt):

**E:-** 201.200 – 202.500

**N:-** 1077.500 – 1079.000

### 3.3. Other Locations

- **Ein Lahtha area:** is located about 17km south of Tafila.
- **Al-Ena area:** is located about 28km north east of Tafila.
- **Ras En Naqab area:** is located about 50km south of Maan.

## 4. Geological Setting

Dolomite found in rocks of all ages, and is generally associated with limestone. In general, dolomite can be found throughout Jordan in the Burj Dolomite – Shale Formation of Cambrian age and in Naur, Hummar and Wadi Es-sir formations. Dolomite deposits which occur in Wadi Isal and Ghour Al-Haditheh areas belongs to Wadi Es-Sir Formation (Turonian) (Figures 2 &3).

## 5. Reserves

**Table (1):** Reserves of Dolomite.

Area	Reserve (Mt)
The area between Wadi Isal and Ahemir Isal	62
Al-Haditheh	20
Ein Lahtha	Not determined
Al-Ena	Not determined
Ras En Naqab	Not determined

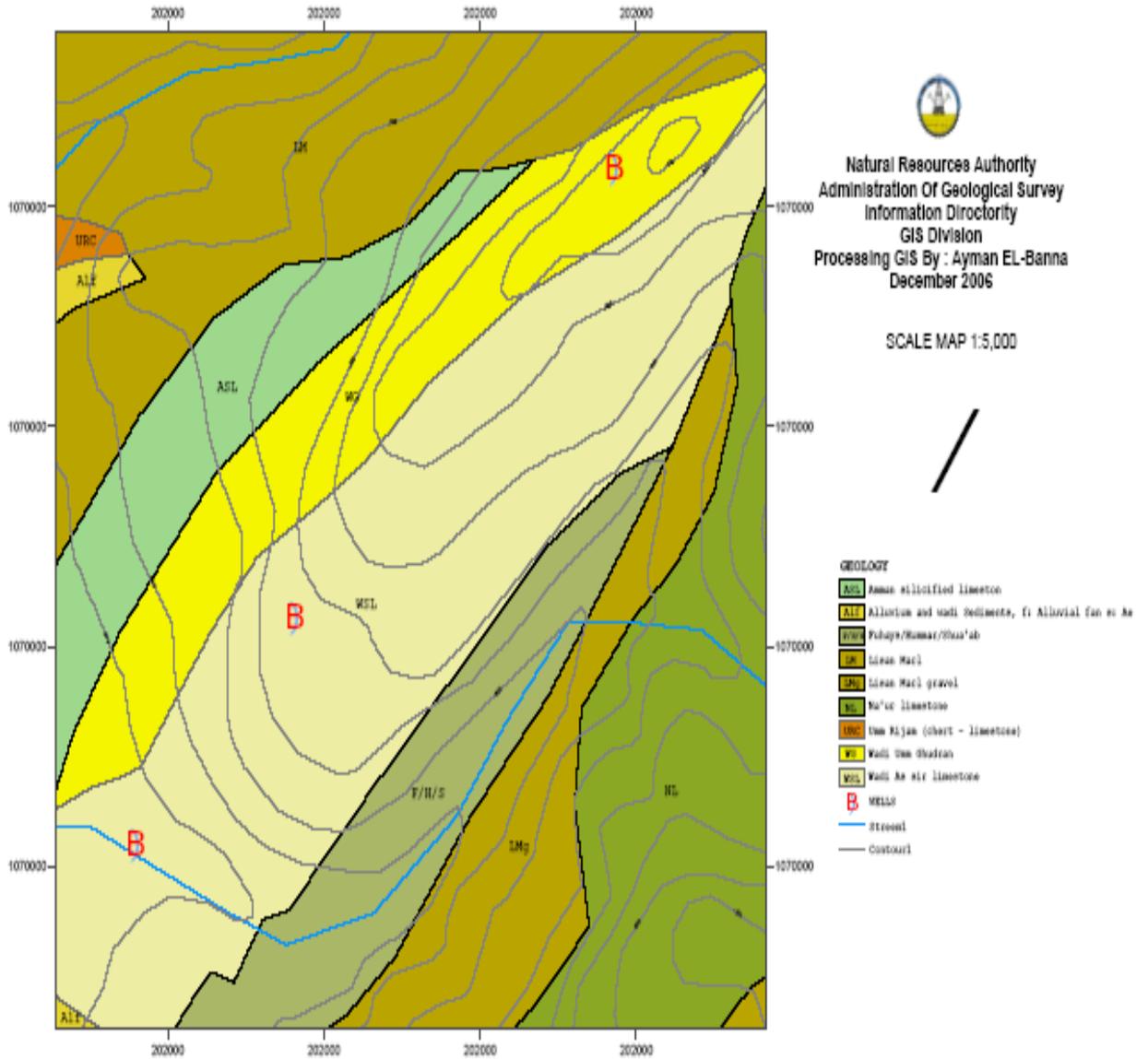


Fig. (2) Geological Map Of The Area Between Wadi Isal & Wadi Ahemir Isal.

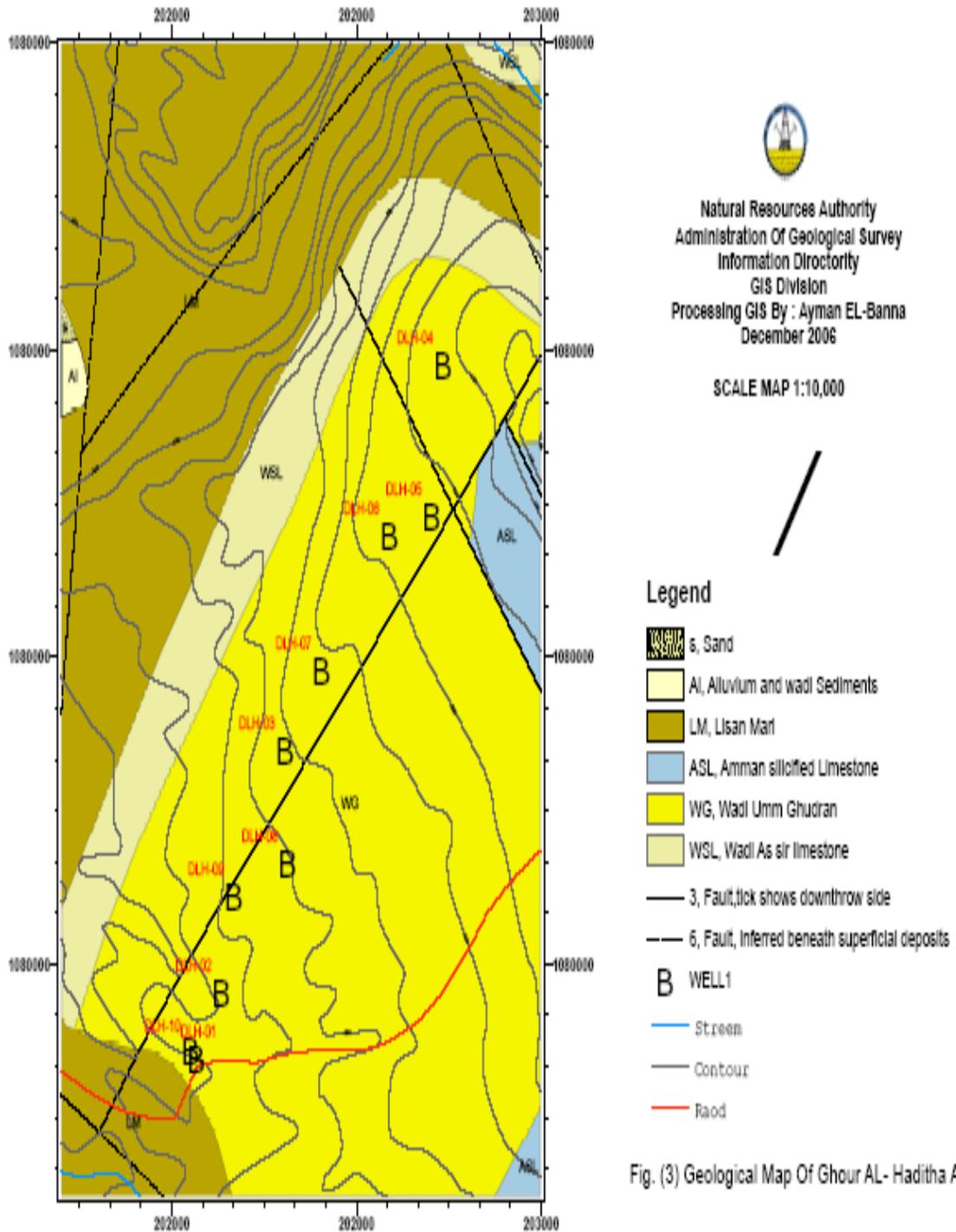


Fig. (3) Geological Map Of Ghour AL- Haditha Area

## 6. Mineral Properties

### 6.1. Chemical Properties

**Table (2):** Chemical properties of Dolomite at the area between Wadi Isal and W di Ahemir Isal.

<b>MgO %</b>	1.77 – 18.98%
<b>SiO2 %</b>	0.95 – 6.44%
<b>CaO %</b>	31.13 – 46.7%
<b>Fe2O3 %</b>	0.12 – 1.36%

**Table (3):** Chemical properties of Dolomite at Ghour Al Haditheh area.

<b>MgO %</b>	1.74 – 20.2%
<b>SiO2 %</b>	0.45 – 24.2%
<b>CaO %</b>	21.55 – 50.9%
<b>Fe2O3 %</b>	0.1 – 3.57%

**Table (4):** Chemical properties of Dolomite at Ein Lahtha area.

<b>MgO %</b>	16.7%
<b>CaO %</b>	35.9%

**Table (5):** Chemical properties of Dolomite at Al Aina area.

<b>MgO %</b>	14.42 – 18.72%
<b>CaO %</b>	33.86 – 35.9%
<b>Fe2O3 %</b>	0.81 – 1.6%

**Table (6):** Chemical properties of Dolomite at Ras En Naqab area.

<b>MgO %</b>	15.93 – 18.95%
<b>SiO2 %</b>	31.4 – 34.9%
<b>CaO %</b>	2.38 – 2.82%
<b>Fe2O3 %</b>	0.53 – 0.96%

## **6.2. Mineralogical Properties**

### **6.2.1. Ghour Al Haditheh Area**

Dolomite and calcite is the major constituent with minor amount of Gypsum, Quartz and Kaolinite.

## **7. Background**

- In 1988, NRA studied the dolomite deposits in the area between Wadi Isal and Wadi Ahemir Isal, The study includes drilling of three inclined borehole, sampling, and reserve estimation.
- In 1991, NRA studied the dolomite deposits in the Al-Haditheh area. The study includes drilling of ten boreholes, sampling and reserve estimation.

## **8. Investment Opportunities**

Currently, there is no exploitation of dolomite, but the mineral is open for investment. Mining and exploration companies are invited for investment and evaluation of the reserves for:

- **Glass Industry:** as the dolomite one of the main raw material and form 5 – 10% of glass industry.
- **Ceramic industry:** Dolomite can be used in high thermal resistance ceramic, this is an investment opportunity for uses the dolomite in this new industry in Jordan.

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