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GEOLOGICAL SURVEY

Helium surveys over known geothermal resource areas  
in the Imperial Valley, California

By

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This report is preliminary and has not been  
edited or reviewed for conformity with U.S.  
Geological Survey standards and nomenclature.

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The concentration of helium in the soil gas was measured over the Dunes, East Mesa, Brawley and Salton Sea geothermal areas (fig. 1). Figures 2 through 5 illustrate the good correlation observed between the helium concentration (in ppm) and the temperature gradients in these areas. This strongly supports the possible utility of helium sniffing as a quick, inexpensive tool for geothermal reservoir prospecting.

## Contents

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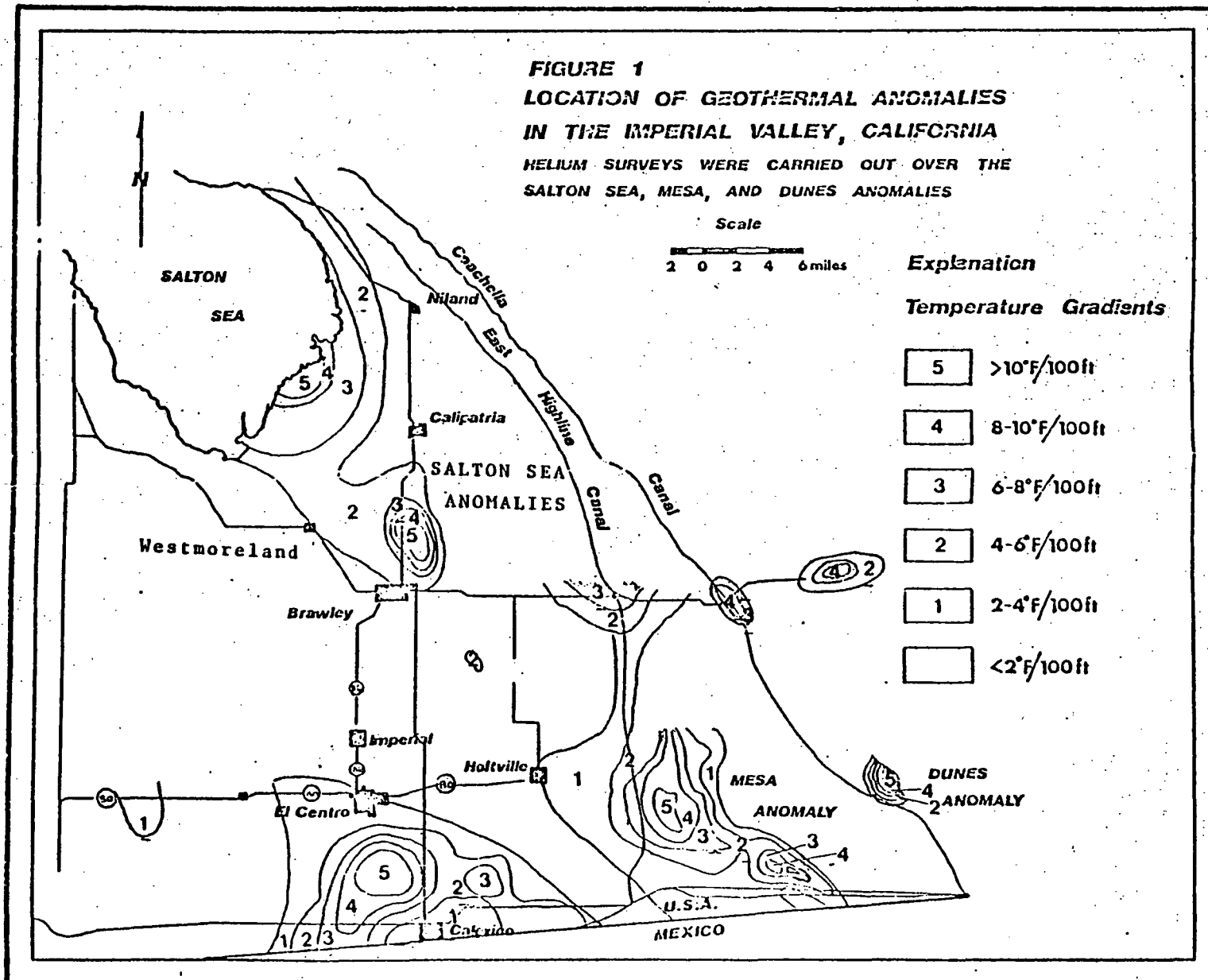
### Summary

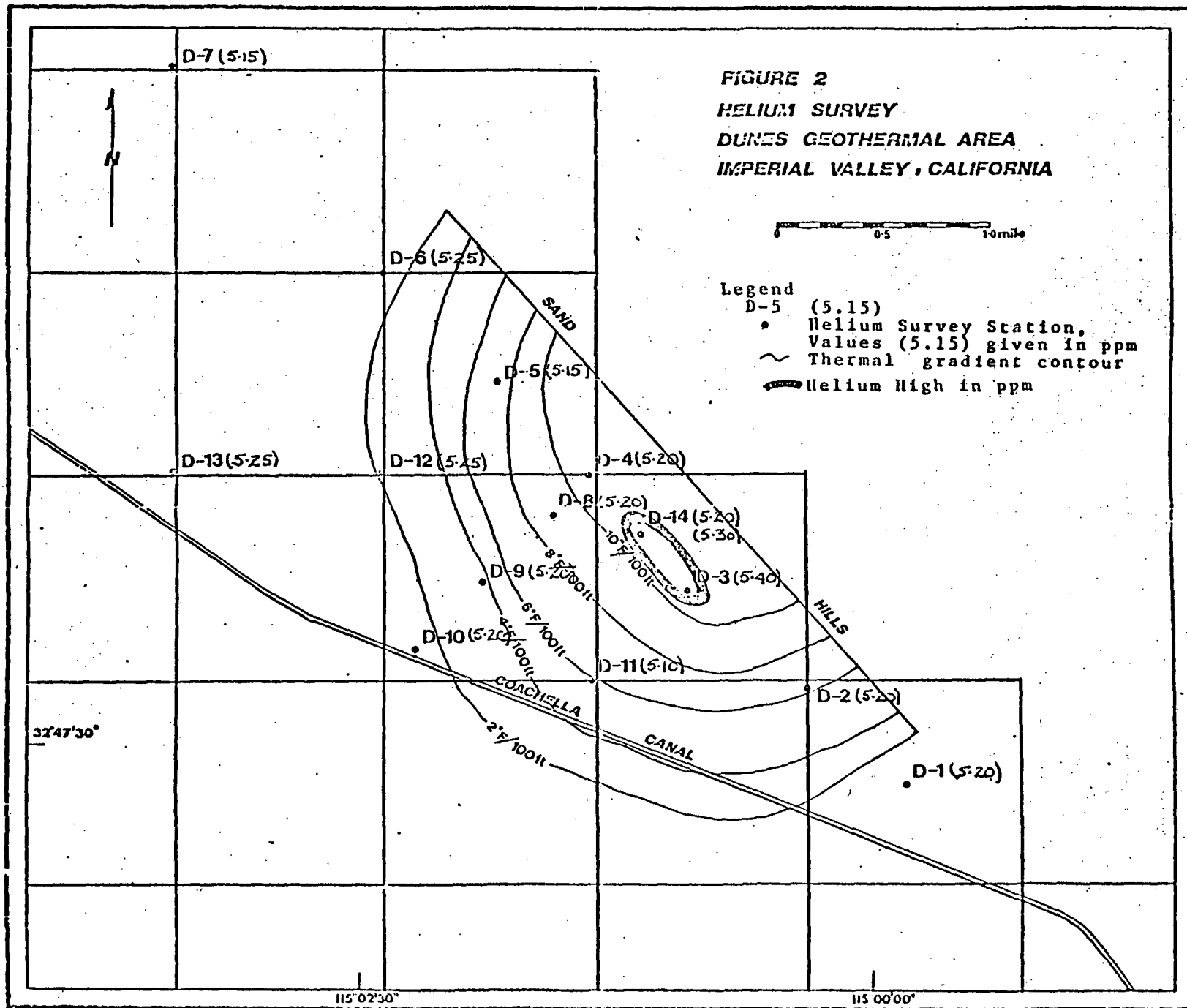
## Illustrations

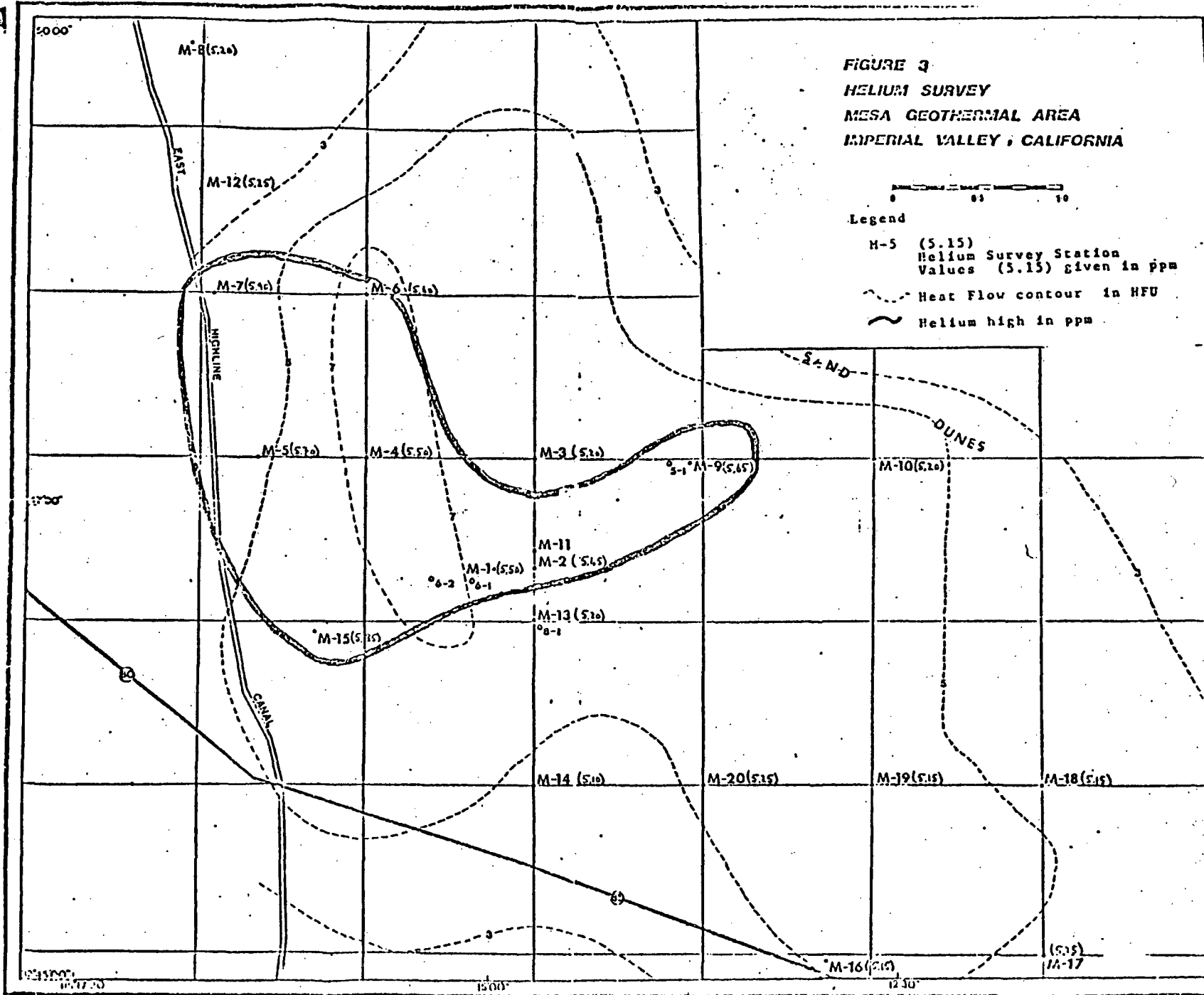
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- Figure 1. Location of geothermal anomalies in the Imperial Valley, California
2. Helium survey Dunes geothermal area, Imperial Valley, California
  3. Helium survey Mesa geothermal area, Imperial Valley, California
  4. Helium survey Salton Sea geothermal area, Imperial Valley, California
  5. Helium survey Salton Sea geothermal area, Imperial Valley, California

**FIGURE 1**  
**LOCATION OF GEOTHERMAL ANOMALIES**  
**IN THE IMPERIAL VALLEY, CALIFORNIA**  
 HELIUM SURVEYS WERE CARRIED OUT OVER THE  
 SALTON SEA, MESA, AND DUNES ANOMALIES

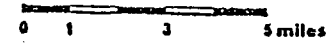






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**FIGURE 4**  
**HELIUM SURVEY**  
**SALTON SEA GEOTHERMAL AREA**  
**IMPERIAL VALLEY, CALIFORNIA**



**Legend**  
 S-5 • Helium Survey Station  
 6°F ~ Thermal gradient contour

