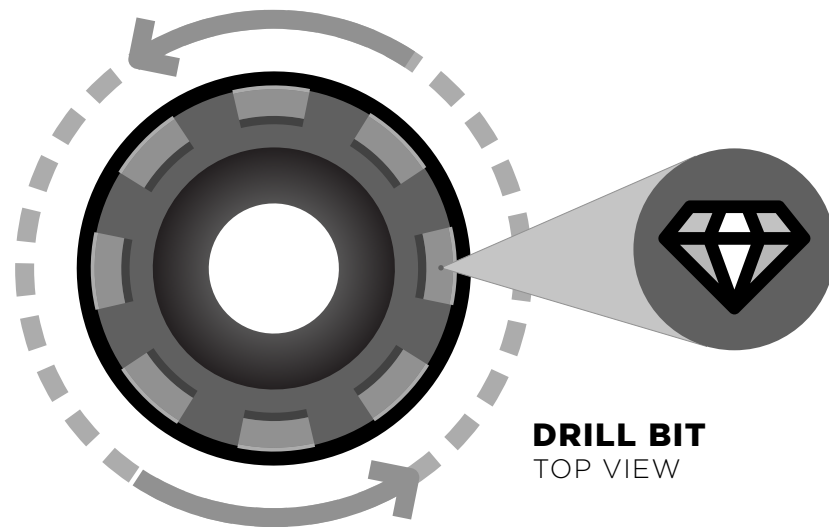




# EXPLORATORY DRILLING

## UNDERSTANDING THE PROCESS



DRILL BIT  
TOP VIEW

### AKA DIAMOND CORE DRILLING

Diamond core drilling uses a cylindrical bit with embedded industrial diamonds, which rotates at the end of drill rod (or pipe). The opening at the end of the diamond bit allows a solid column of rock to move up into the drill pipe and be recovered at the surface without invasive digging.

#### STRENGTH



#### DURABILITY



#### IMPACT



### WHO DOES THE DRILLING & WHY?

Geologists are essentially Earth detectives. They use science to uncover the story of how our planet was formed over billions of years, from stardust to the modern world we know today. One of their tools for gathering clues is exploratory core drilling. This precision sampling technique enables them to study rocks that are buried deep in the Earth and otherwise inaccessible to humans, with no excavation required.

## BY THE NUMBERS | EXPLORATORY DRILLING IN PRACTICE

A drill pad is the physical space occupied by all equipment, materials, and personnel needed to perform the exploration. For scale, the figure below illustrates the approximate size of a drill pad in comparison to a regulation soccer field.



SOCCER FIELD

### DRILL PAD SIZE

50' x 50'

2,500 SQ. FT. | .057 ACRES  
(1/20 of 1 acre)

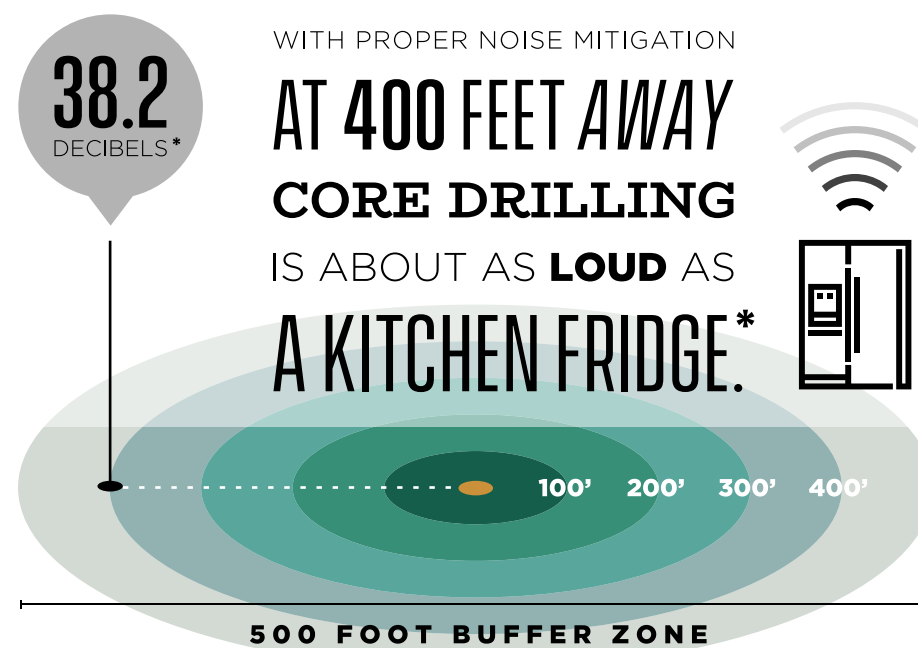


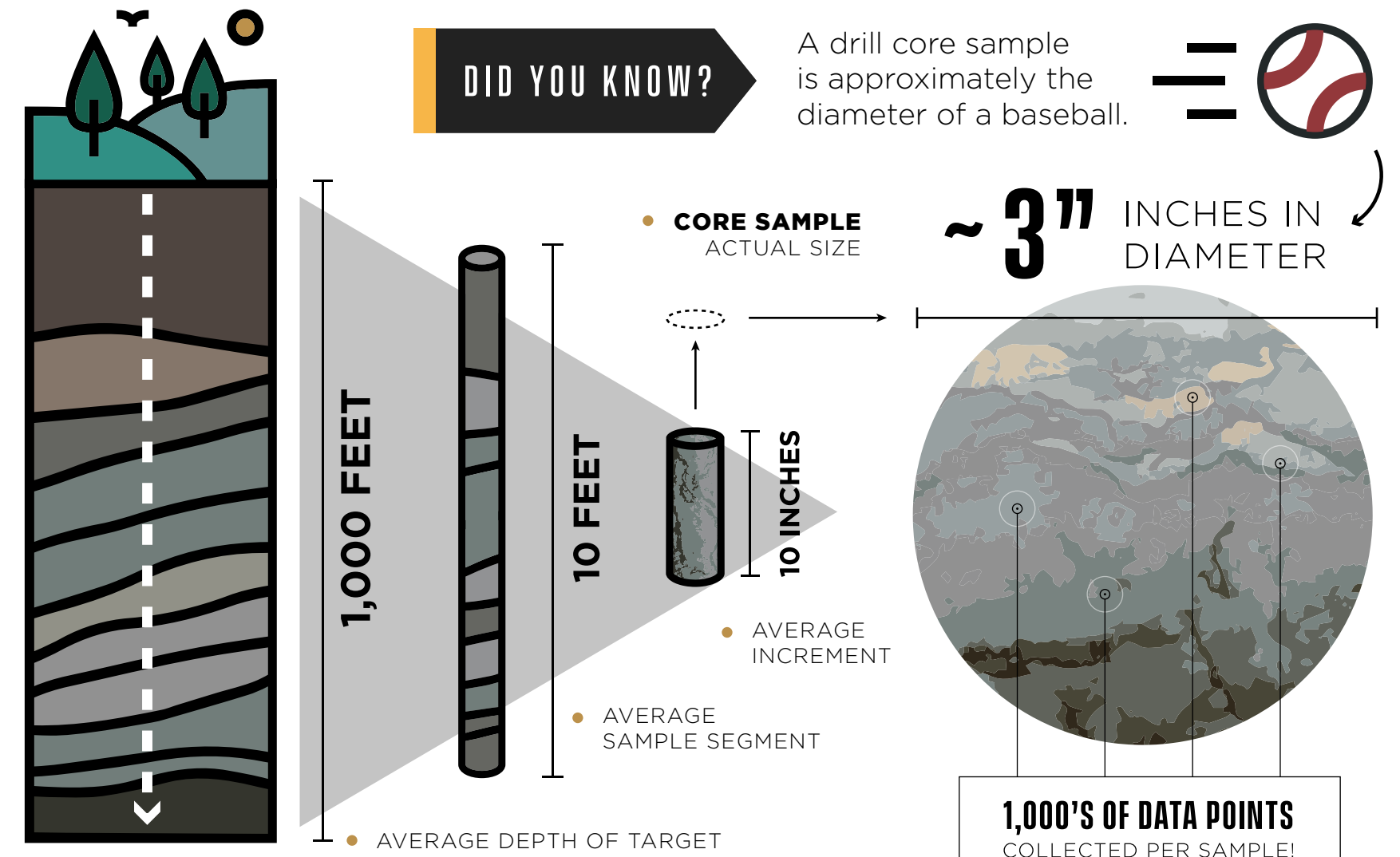
Fig. 2 : IDEA Drilling; <https://www.ideadrilling.com/technical-sheets/>

### DID YOU KNOW?

A drill core sample is approximately the diameter of a baseball.

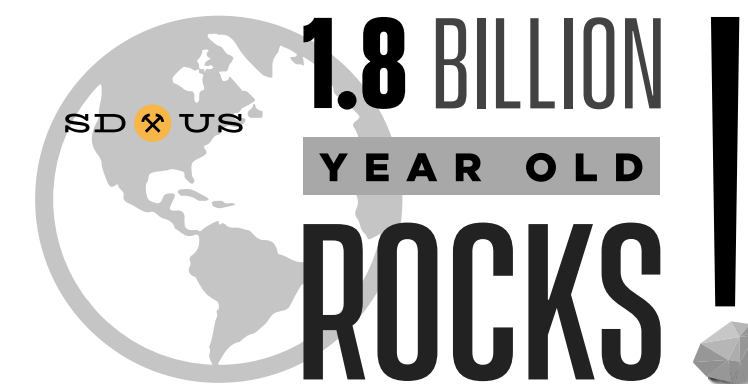


~ 3" INCHES IN DIAMETER



## BIG DATA IN A SMALL PACKAGE

A technical team of geologists must gather numerous data points (clues!) and work to piece them all together in order to gain a full understanding of Earth's history as told by...



### KEY DATA POINTS FROM CORE SAMPLE

- Lithology
- Alteration
- Rock quality (RQD)
- Geochemistry
- Mineralization
- Structure
- Geometry
- Fluorescence
- Photography

Fig. 1 : MN DNR; [https://files.dnr.state.mn.us/lands\\_minerals/mineral\\_faq/mn\\_minexpact.pdf](https://files.dnr.state.mn.us/lands_minerals/mineral_faq/mn_minexpact.pdf)