Aquifer Vulnerability Map of the Inyan Kara Group, Blackhawk Quadrangle

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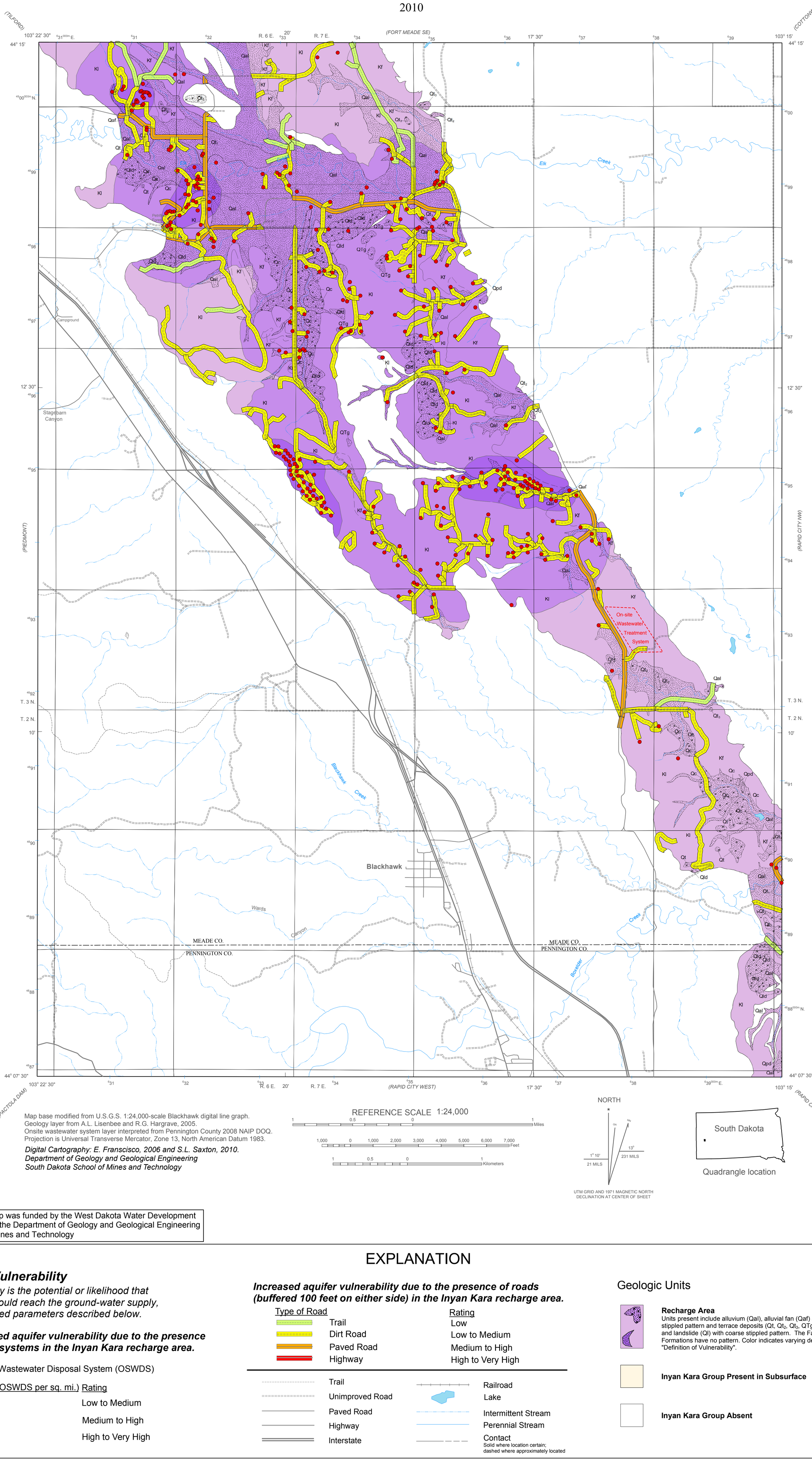

Map base modified from U.S.G.S. 1:24,000-scale Blackhawk digital line graph.
Geology layer from A.L. Lisenbee and R.G. Hargrave, 2005.
Onsite wastewater system layer interpreted from Pennington County 2008 NAIP DOQ.
Projection is Universal Transverse Mercator, Zone 13, North American Datum 1983.

Digital Cartography: E. Franscisco, 2006 and S.L. Saxton, 2010.
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REFERENCE SCALE 1:24,000

1 0.5 0 1 Miles

1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

1 0.5 0 1 Kilometers

NORTH

1° 10' 21 MILS

13° 231 MILS

UTM GRID AND 1971 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

South Dakota

Quadrangle location

The preparation of this map was funded by the West Dakota Water Development District in association with the Department of Geology and Geological Engineering South Dakota School of Mines and Technology

EXPLANATION

Definition of Vulnerability

Aquifer vulnerability is the potential or likelihood that any contaminant could reach the ground-water supply, based on designated parameters described below.

Areas of increased aquifer vulnerability due to the presence of on-site septic systems in the Inyan Kara recharge area.

On-Site Wastewater Disposal System (OSWDS)

Density (number of OSWDS per sq. mi.)	Rating
0 - 10	Low to Medium
10 - 40	Medium to High
40 - 81	High to Very High

Increased aquifer vulnerability due to the presence of roads (buffered 100 feet on either side) in the Inyan Kara recharge area.

Type of Road	Rating
Trail	Low
Dirt Road	Low to Medium
Paved Road	Medium to High
Highway	High to Very High

Trail
Unimproved Road
Paved Road
Highway
Interstate
Railroad
Lake
Intermittent Stream
Perennial Stream
Contact
Solid where location certain; dashed where approximately located

Geologic Units

Recharge Area
Units present include alluvium (Qal), alluvial fan (Qaf) and terrace deposits (Qt_1) with stippled pattern and terrace deposits (Qt, Qt_2, Qt_3, QTg), pediment (Qpd), colluvium (Qc) and landslide (Ql) with coarse stippled pattern. The Fall River (Kf) and Lakota (Kl) Formations have no pattern. Color indicates varying degree of vulnerability; see "Definition of Vulnerability".

Inyan Kara Group Present in Subsurface

Inyan Kara Group Absent