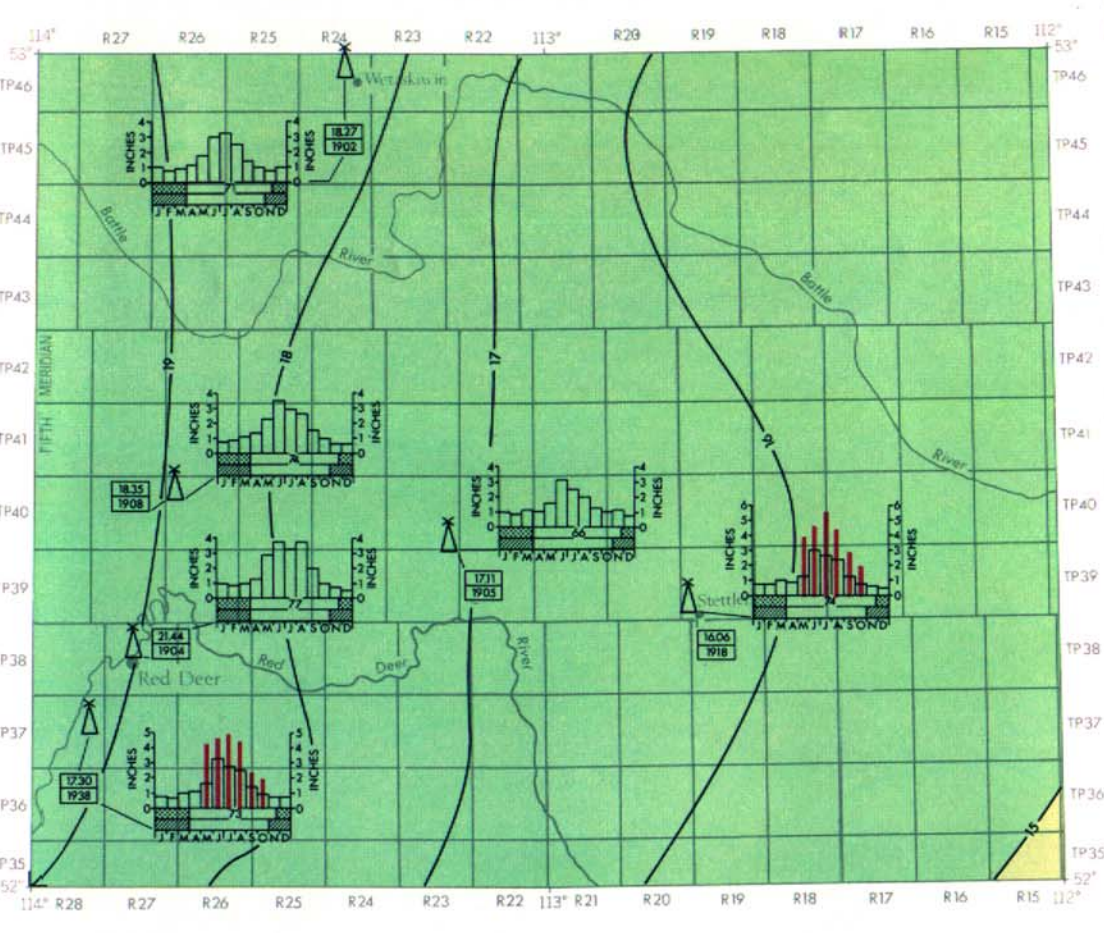


METEOROLOGY

LEGEND

- Mean annual precipitation:
  - 18 to 20 inches
  - less than 15 inches
- Isohyet, mean annual precipitation in inches
- Meteorological station
- Precipitation data:
  - Mean annual precipitation in inches
  - Comment on observation
- Mean monthly precipitation\*
- Period when surface is usually more covered
- Figure indicates percent of mean annual precipitation falling in this period
- \*Precipitation estimate on basis of the Thornthwaite Method

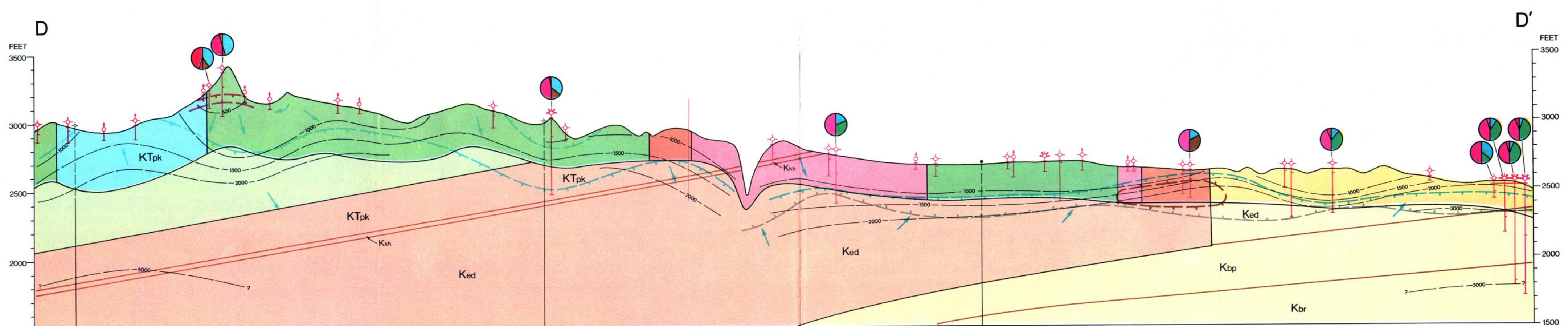
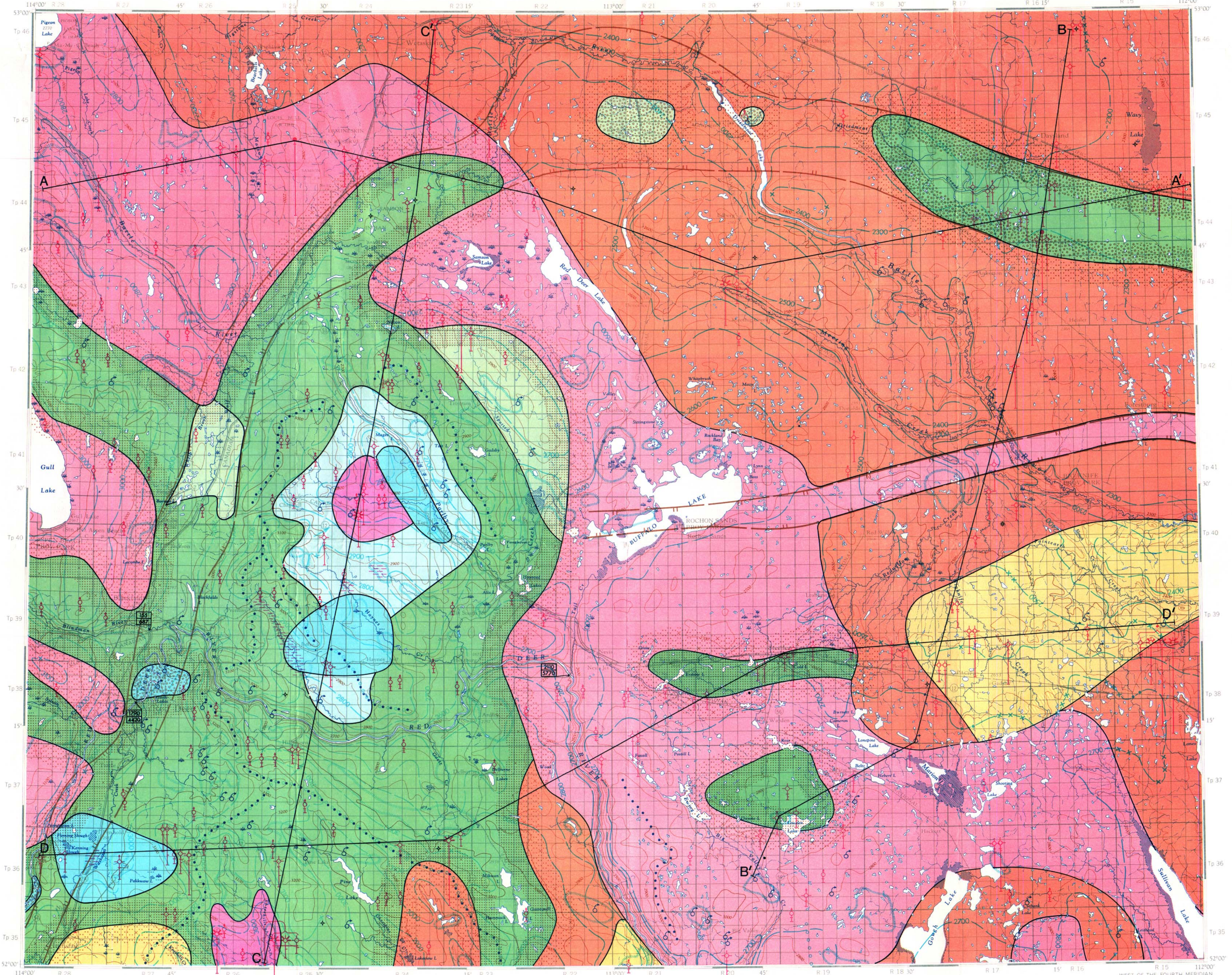
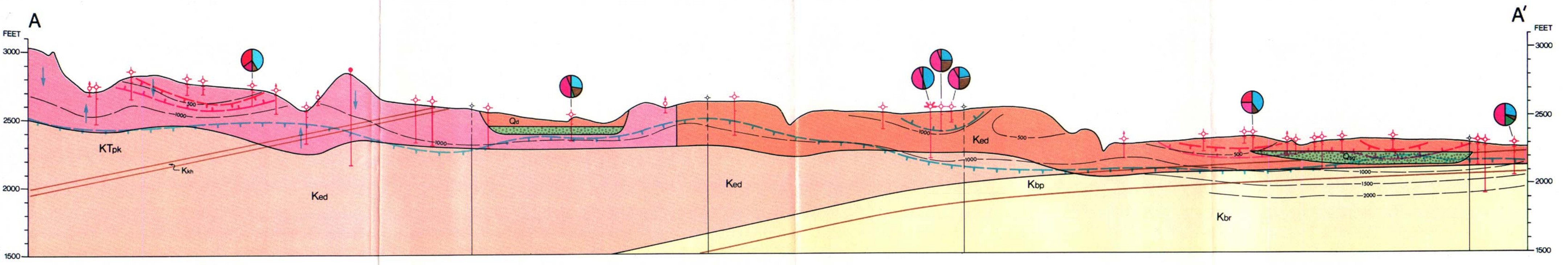
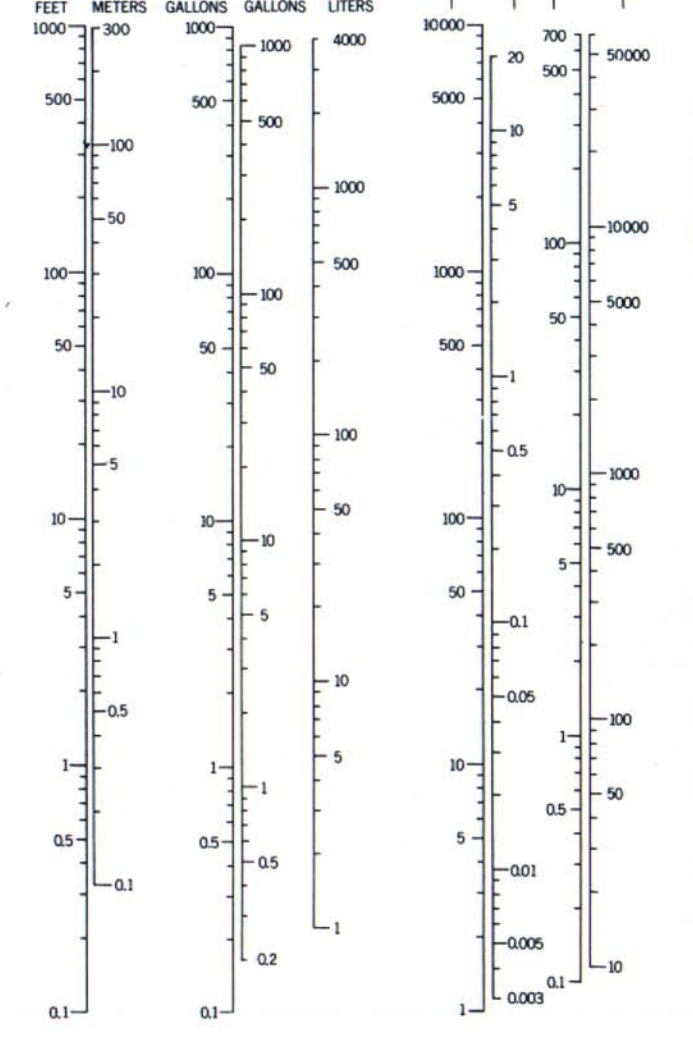


Sources of data: *Climate Map of Alberta, (London, 1968) and Monthly Record of Meteorological Observations (Meteorological Branch, Canada Department of Transport)*

MAIN MAP LEGEND

- Topography:
  - Surface contours (interval 100 feet)
  - elevation
  - depression
  - approximate
- Geology:
  - Geological boundary
  - QUATERNARY: Unconsolidated deposits
  - CRETACEOUS:
    - KTpa: Parkapoo Formation
    - Km: Kneehills Member
    - Ke: Edmonton Formation
    - Ker: Bearpaw Formation
    - Kar: Belly River Formation
  - Sand and gravel
  - Bentonitic sandstone
  - Bentonitic siltstone
  - Braided valley
- Hydrography:
  - Lake, intermittent
  - Marsh, meadow
  - Stream, intermittent
  - Stream, indefinite
  - Rough, fall
  - Irrigation canal or ditch
  - Area covered by a salt precipitate
  - Surface water divide
  - Spring
  - Stream gauge:
    - area in square miles
    - average annual discharge in cubic feet per second
- Groundwater Hydrology:
  - Nonpumping water level contour (elevation in feet) and vertical component of groundwater movement
  - Groundwater divide
  - Boundary of area of artesian flow
  - Direction of groundwater flow
  - Boreholes, Wells and Other Works:
    - Shothole
    - Depth of shothole
    - Borehole
    - Depth of borehole
    - Water well
    - Depth of well
    - Water well, flowing
    - Water well, 20-year safe yield calculated from a pump test of sufficient length to reflect regional hydrologic conditions
    - Water well, 20-year safe yield calculated from a good bail test or a short pump test
    - Recharge pit
    - Location of test well
    - Oil well\*
    - Gas well\*
    - Abandoned oil or gas well\*
- Groundwater Probability†:
  - Average expected yield of wells (in imperial gallons per minute) established from pump or bail tests, etc.
  - estimated from flow regime, lithology, etc.
- Hydrochemistry:
  - Total dissolved solids in parts per million
  - Isogram along which calcium + magnesium constitute 60 per cent of total cations; teeth indicate direction of lesser calcium + magnesium content
  - Isogram along which sodium + potassium constitute 60 per cent of total cations; teeth indicate direction of lesser sodium + potassium content
  - Isogram along which calcium + bicarbonate constitute 60 per cent of total anions; teeth indicate direction of lesser calcium + bicarbonate content
  - Isogram along which sulfate constitute 60 per cent of total anions; teeth indicate direction of lesser sulfate content
  - Isogram along which chloride constitute 60 per cent of total anions; teeth indicate direction of lesser chloride content

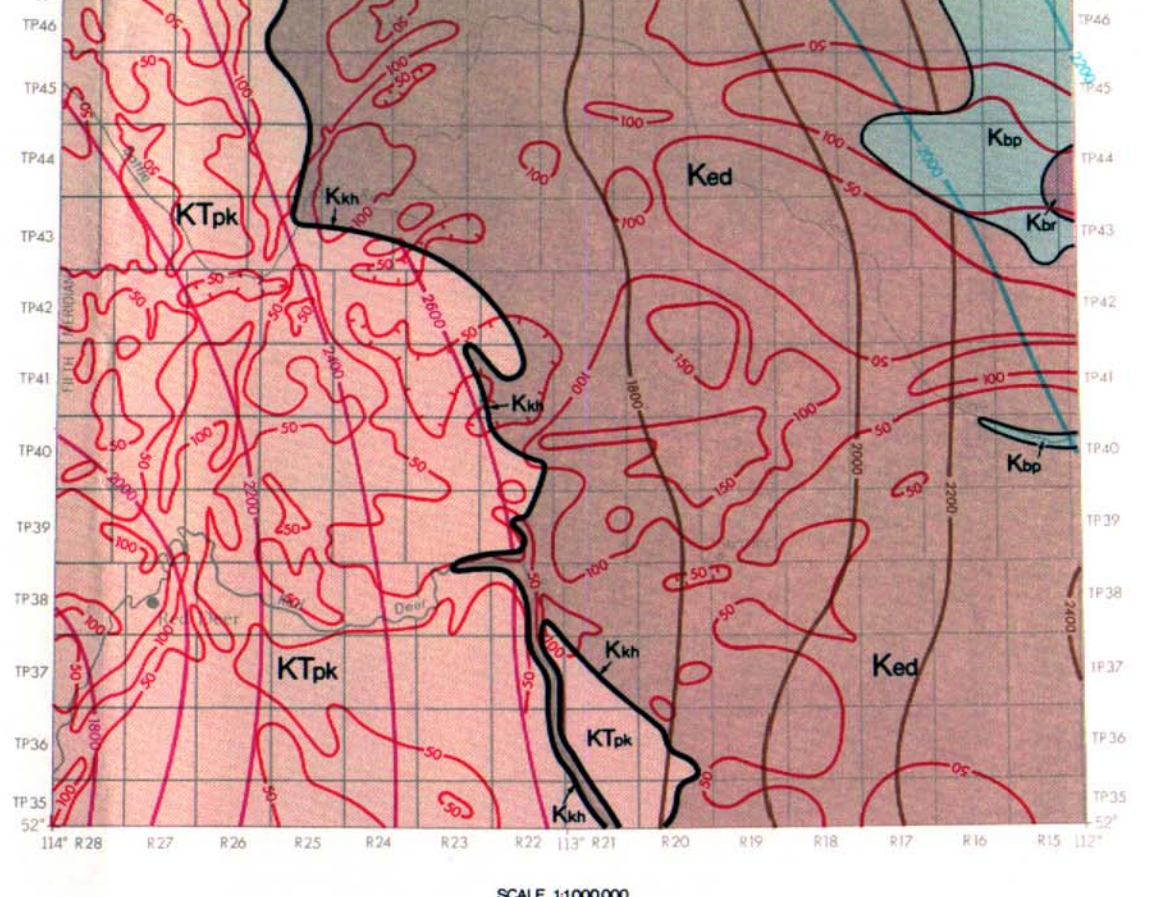
CONVERSION TABLE LOGARITHMIC SCALE



GEOLOGY

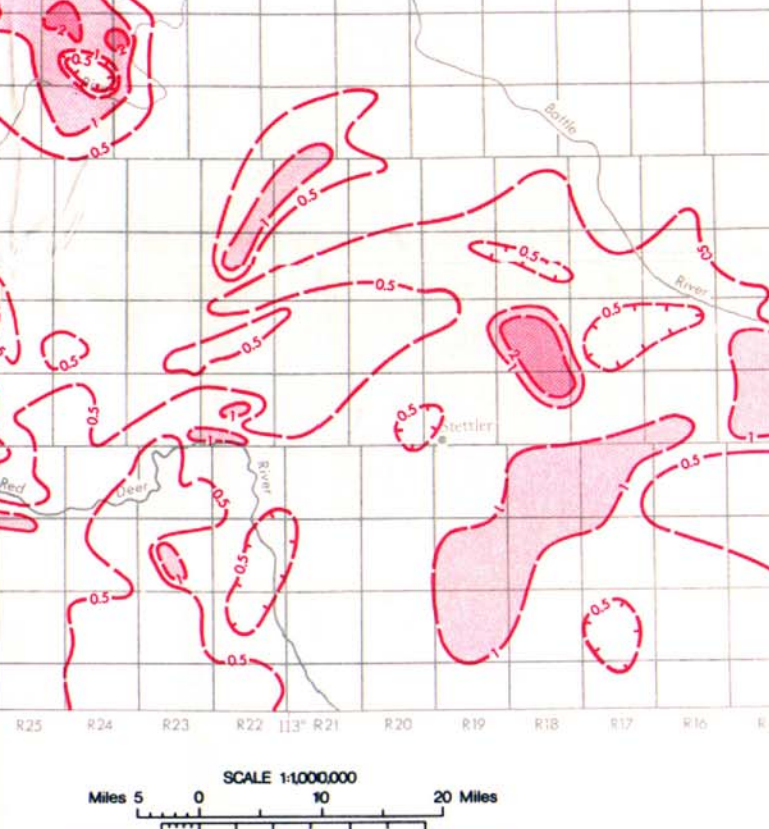
LEGEND

- KTpa: Parkapoo Formation: sandstone, siltstone, minor coal
- Km: Kneehills Member, Edmonton Formation: silt, shale
- Ke: Edmonton Formation: siltstone, sandstone, coal, shale
- Ker: Bearpaw Formation: shale
- Kar: Belly River Formation: sandstone, siltstone, shale
- Rock unit boundary
- Thickness of surficial deposits in feet
- Structure contour on top of Kneehills Member
- Structure contour on top of Bearpaw Formation
- Structure contour on top of Belly River Formation



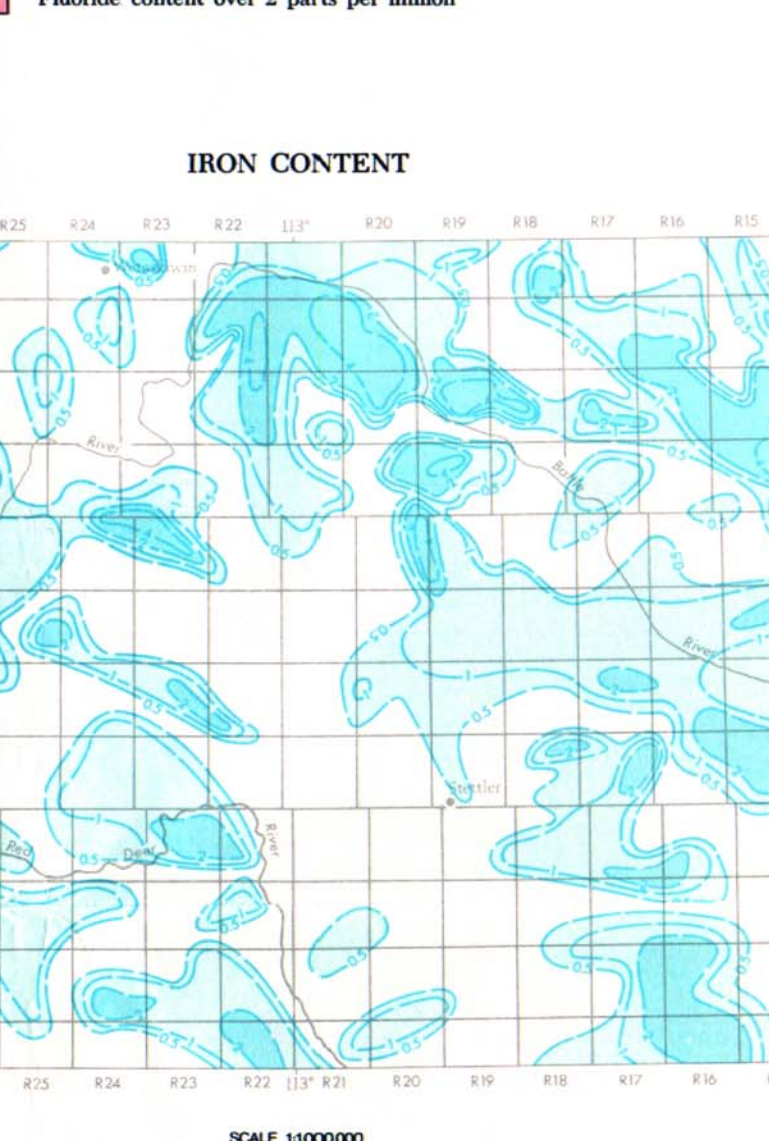
FLUORIDE CONTENT

- Fluoride content in parts per million
- Fluoride content ranging between 1 and 2 parts per million
- Fluoride content over 2 parts per million



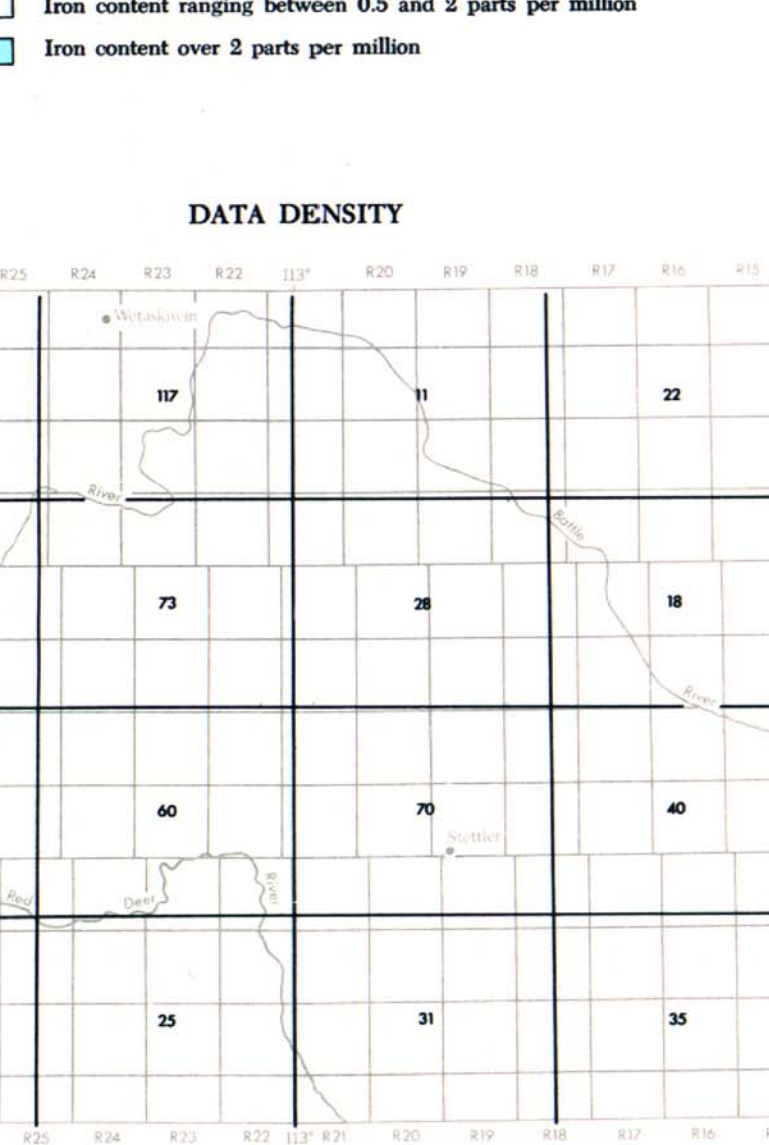
IRON CONTENT

- Iron content in parts per million
- Iron content ranging between 0.5 and 2 parts per million
- Iron content over 2 parts per million



DATA DENSITY

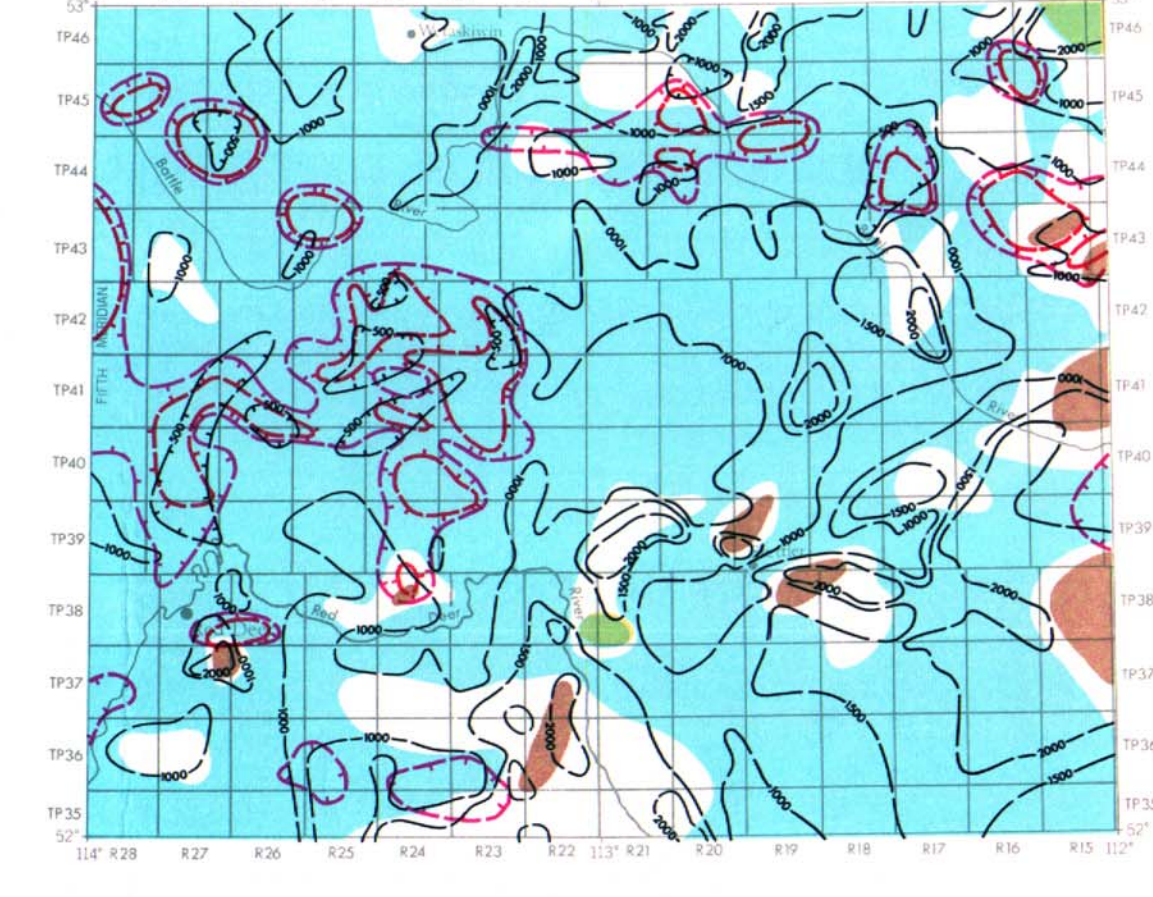
- Number of data points in each section of the map area used in construction of the yield area and hydrochemical maps.



HYDROCHEMISTRY

LEGEND

- Total dissolved solids in parts per million
- Bicarbonate + carbonate constituting over 60 per cent of total anions, on equivalents per million basis
- Sulfate constituting over 60 per cent of total anions, on equivalents per million basis
- Chloride constituting over 60 per cent of total anions, on equivalents per million basis
- Isogram along which calcium + magnesium constitute 60 per cent of total cations; teeth indicate direction of lesser calcium + magnesium content
- Isogram along which sodium + potassium constitute 60 per cent of total cations; teeth indicate direction of lesser sodium + potassium content



HYDROGEOLOGICAL MAP RED DEER AREA ALBERTA

Hydrogeology by E. Gordon Le Betou and R. Green, 1970, based on data collected in 1969. Cartographic editing by R. Green. Drawn by H. Weiss.