

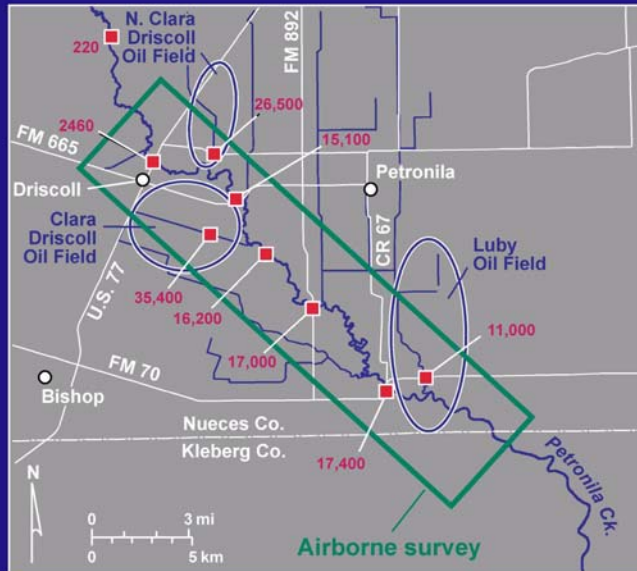
DELINEATING PETRONILA CREEK SALINITY SOURCES USING AIRBORNE GEOPHYSICS

J. G. Paine, H. S. Nance, and E. W. Collins
 Bureau of Economic Geology
 The University of Texas at Austin



Research Sponsor
 Texas Commission on
 Environmental Quality

PETRONILA CREEK



■ TDS (mg/L), 2/05

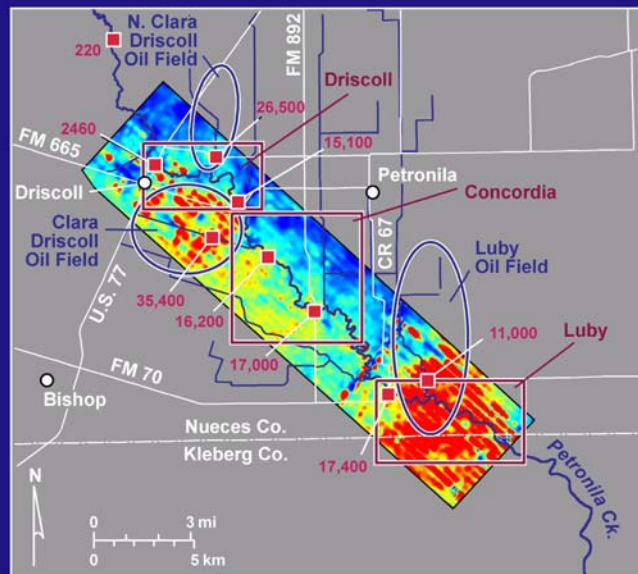


GEM-2A Geophex

Aircraft	Helicopter
Flight height	60 m
Expl. depth	1 - 100 m
EM instrument	GEM-2A
Bird height	30 m
Frequencies	0.45, 1.4, 4.2, 13, 39 kHz
Sample rate and spacing	10 Hz, ~4 m
Magnetometer	Cesium vapor
Bird height	30 m
Sample rate and spacing	10 Hz, ~4 m
Navigational accuracy	<5 m

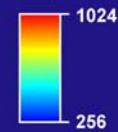
The GEM-2A consists of a single pair of induction coils and bird-mounted magnetometer and GPS. Multiple primary EM frequencies can be selected between about 400 Hz and 40kHz.

PETRONILA CREEK



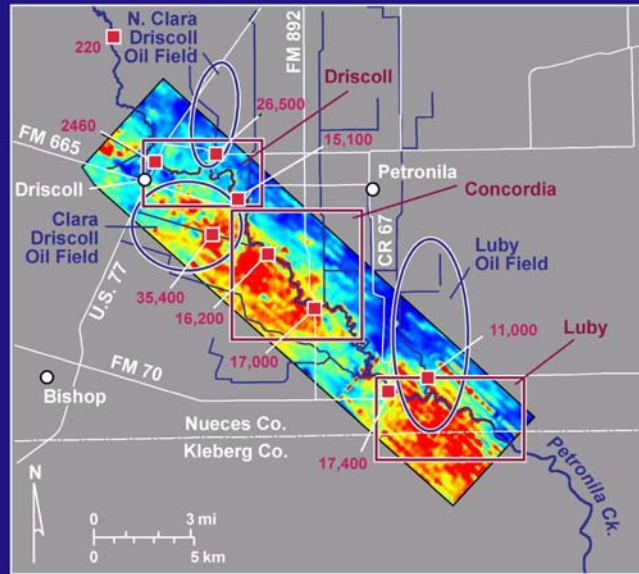
1350 Hz

App. cond.
(mS/m)



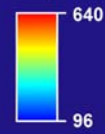
■ TDS (mg/L), 2/05

PETRONILA CREEK



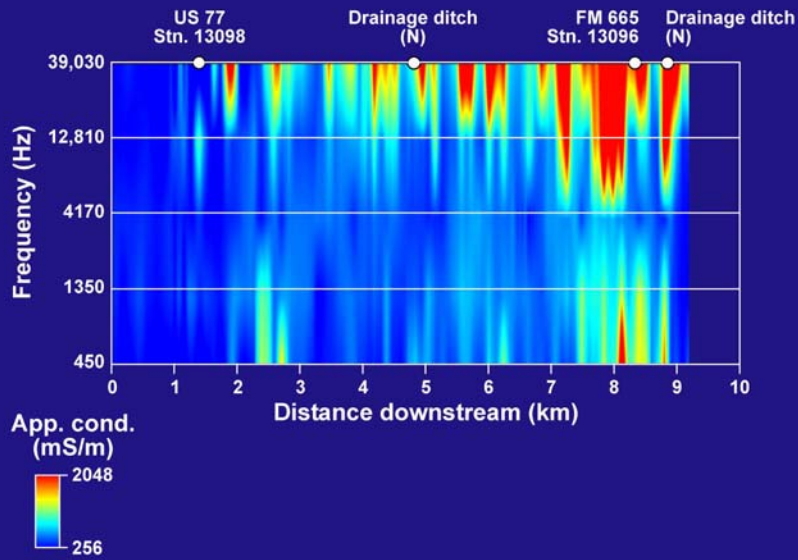
12,810 Hz

App. cond.
(mS/m)

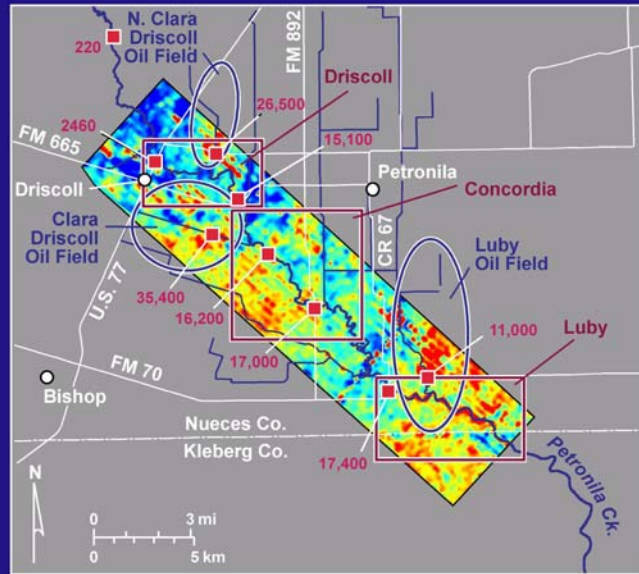


■ TDS (mg/L), 2/05

CREEK-AXIS COMPOSITE, DRISCOLL AREA

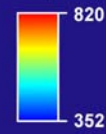


PETRONILA CREEK



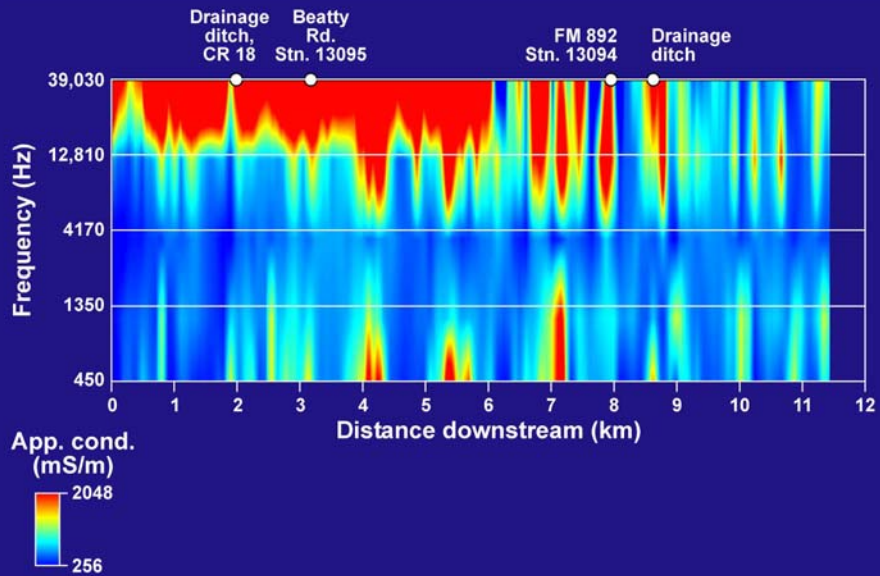
4170 Hz

App. cond.
(mS/m)

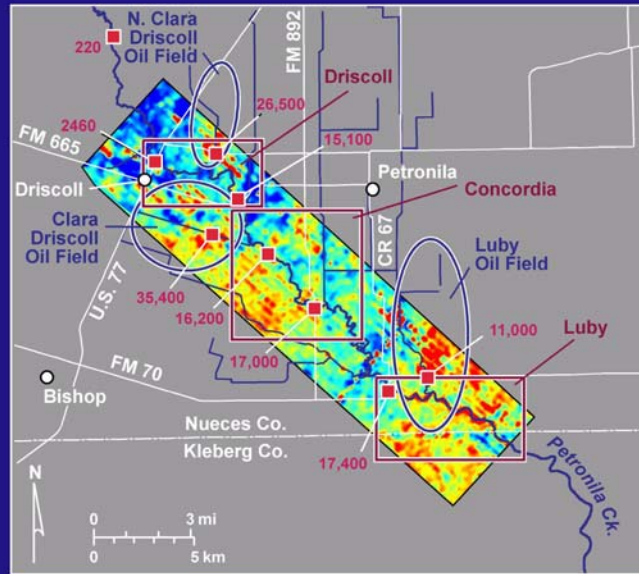


■ TDS (mg/L), 2/05

CREEK-AXIS COMPOSITE, CONCORDIA AREA

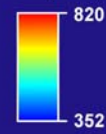


PETRONILA CREEK



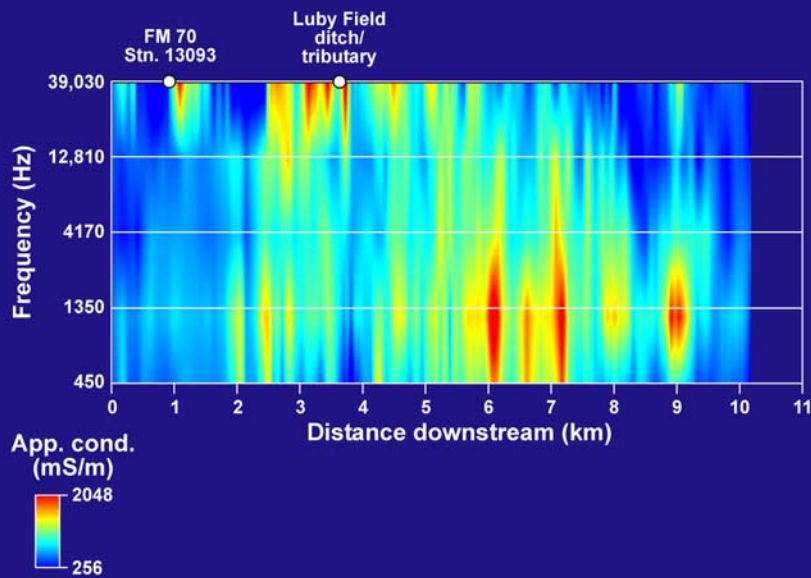
4170 Hz

App. cond.
(mS/m)

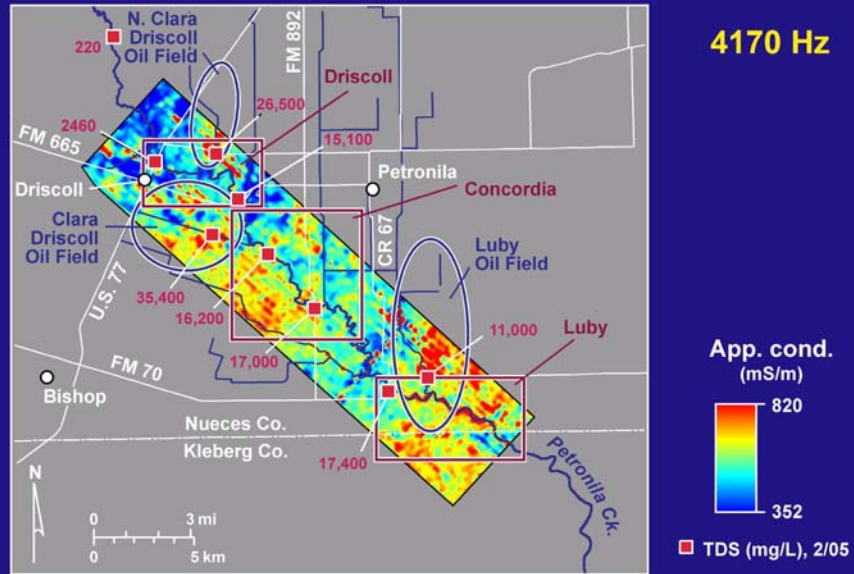


■ TDS (mg/L), 2/05

CREEK-AXIS COMPOSITE, LUBY AREA

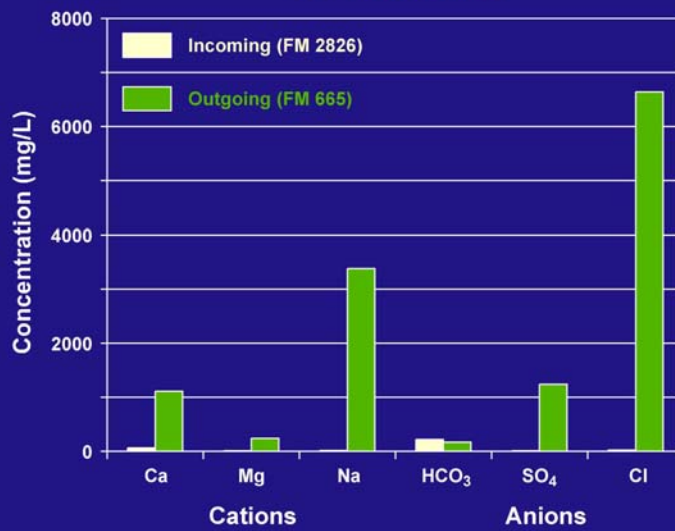


PETRONILA CREEK

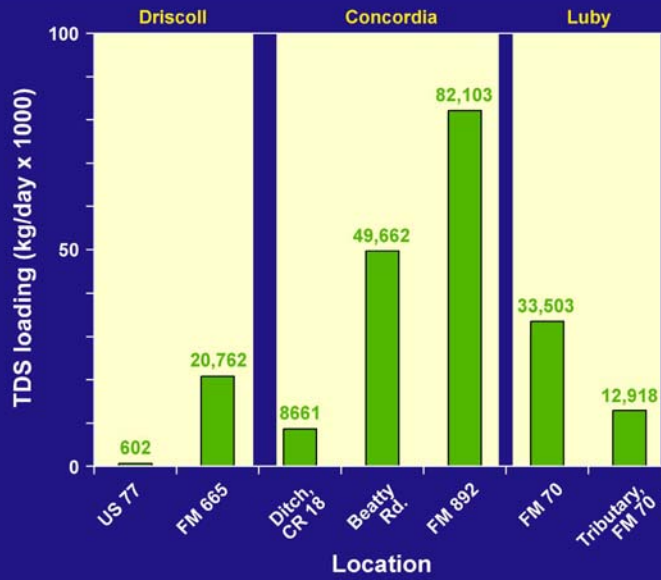


PETRONILA CREEK MAJOR IONS

Driscoll Area

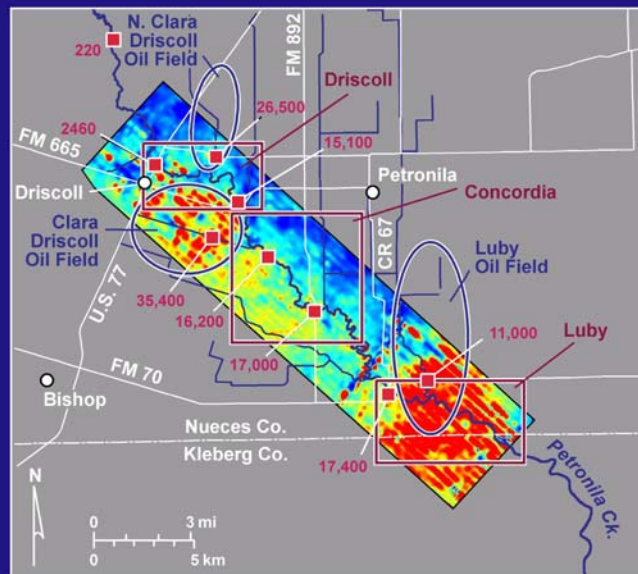


PETRONILA CREEK TDS LOADING



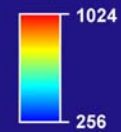
Flow and TDS
EA, Feb. 2005

PETRONILA CREEK



1350 Hz

App. cond.
(mS/m)



■ TDS (mg/L), 2/05

DITCH ALONG CR18 NEAR DRISCOLL



CONDUCTIVITY LOG, BOREHOLE NU-0501

