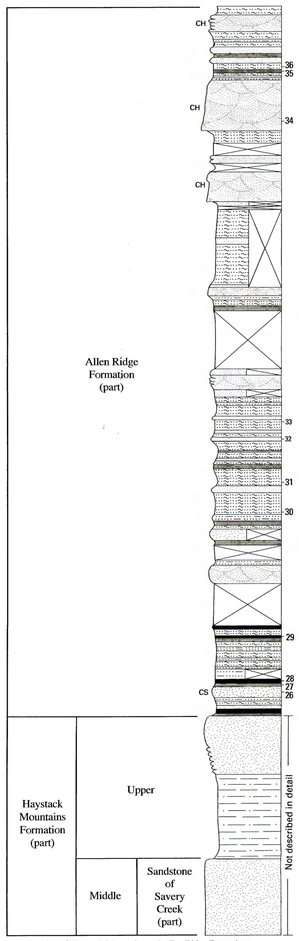
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

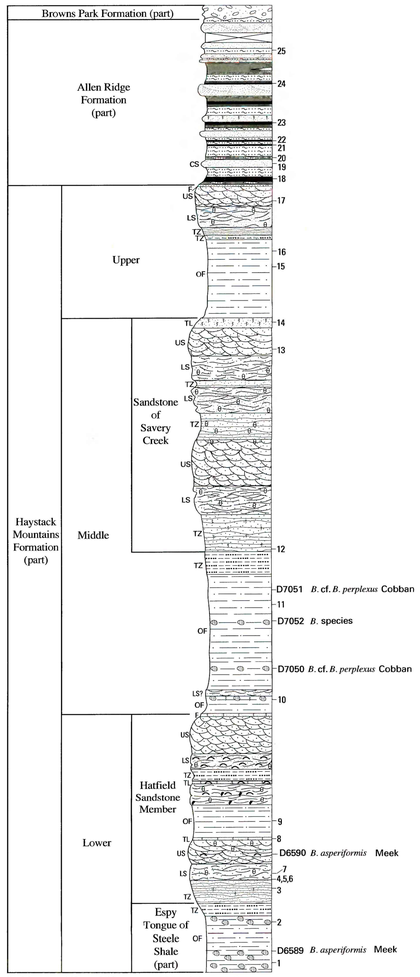
Prepared in cooperation with the
WYOMING WATER DEVELOPMENT COMMISSION

WATER-RESOURCES INVESTIGATIONS REPORT 91-4000
PLATE 1

COLUMNAR SECTIONS



Partial section of Haystack Mountains and Allen Ridge Formations measured in NW1/4 sec. 1 and NE1/4 sec. 2, T. 13 N., R. 89 W., and SE1/4 sec. 35, T. 14 N., R. 89 W., 6th P.M., Carbon County, Wyoming. Modified from Barclay (1976)



Partial section of Haystack Mountains and Allen Ridge Formations measured in the northwestern part of sec. 31, T. 14 N., R. 88 W., 6th P.M., Carbon County, Wyoming. Modified from Barclay (1976)

EXPLANATION

LITHOLOGY AND SEDIMENTARY STRUCTURES

- Conglomerate, minor sandstone
- Sandstone
- Trough-crossbedded sandstone
- Trough and tabular crossbedded sandstone
- Hummocky and swaley crossbedded sandstone
- Interbedded sandstone and shale
- Sandstone, silty
- Shale with thin sandstone or siltstone beds
- Mudstone (claystone to clayey siltstone), subfissile
- Shale (clay-shale to clayey silt-shale), contains substantial amounts of expandable clay minerals
- Carbonaceous shale
- Coal
- Partly covered sandstone
- Covered interval
- Unconformity
- Bioturbated
- *Ophiomorpha* or *Thalassinoides* burrows
- Very thin kaolinite bed in carbonaceous shale or coal
- Limestone concretions
- Fossil oyster shells
- Shale clasts, mostly cobble-sized

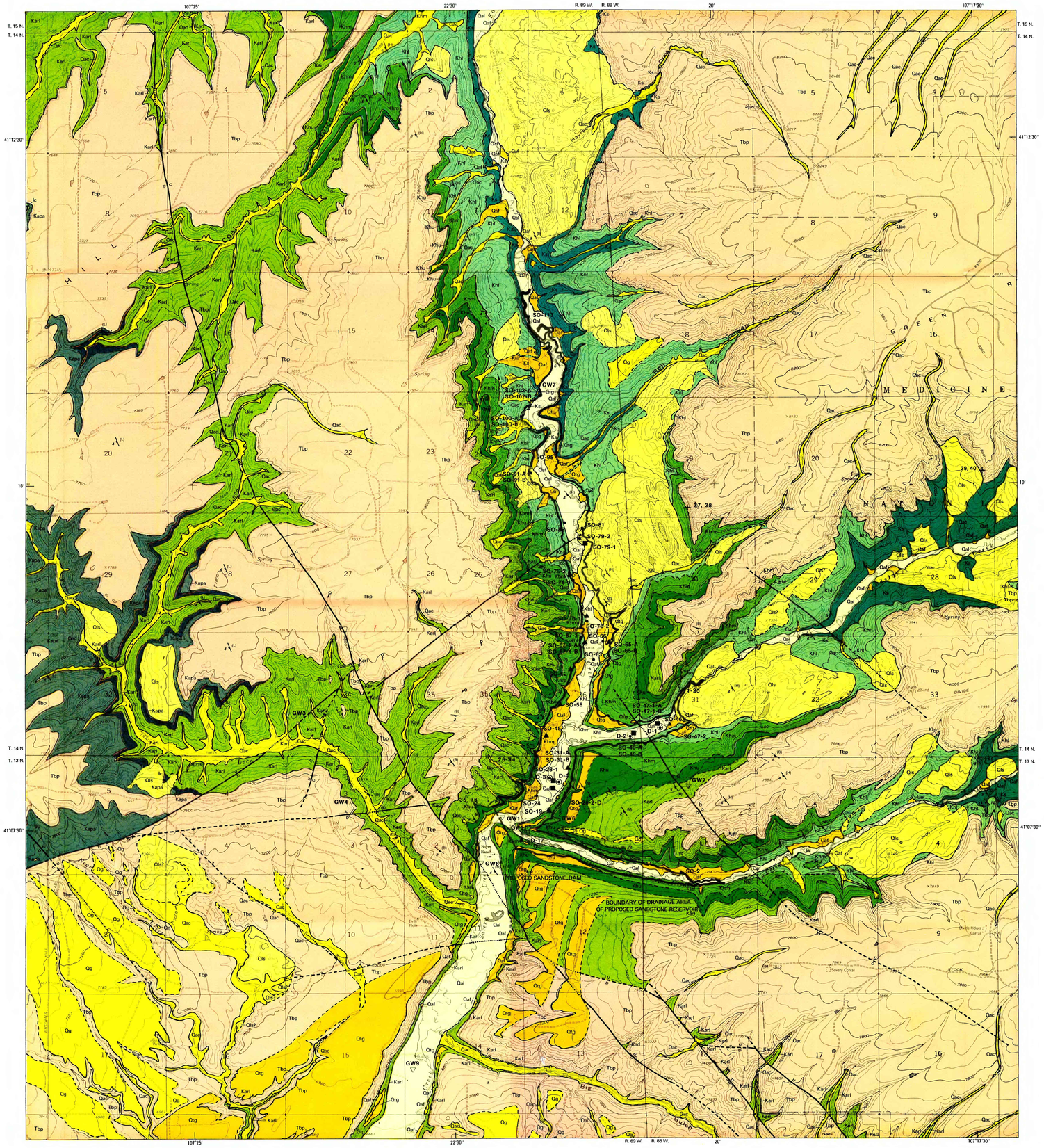
ROCK SAMPLES AND FOSSIL COLLECTIONS

- 10 — Rock sample number in table 5
- D6590 — U.S. Geological Survey Mesozoic fossil locality number; with species of genus *Baculites* at locality

DEPOSITIONAL ENVIRONMENTS

- OF Offshore
- TZ Transition zone
- LS Lower shoreface
- US Upper shoreface
- F Foreshore
- TL Transgressive lag
- CH Channel
- CS Crevasse splay

FEET / METERS: 0/0, 50/10, 100/30


107°25'
22'30"
R. 89 W.
R. 88 W.
20'
107°17'30"
T. 15 N.
T. 14 N.
T. 13 N.
41°12'30"
41°07'30"
10'
Kapa
Karl
Khm
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Ks
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