

STRASBURG NW QUADRANGLE
 COLORADO
 DEPARTMENT OF THE INTERIOR
 GEOLOGICAL SURVEY

DESCRIPTION OF MAP SHEETS

Qal ALLUVIUM (HOLOCENE)-- Sand and fine gravel along present main stream channels; generally light grayish yellow, included flood deposits of sand and fine gravel on low terraces formed on older alluvium and small alluvial-fan deposits. Generally about 15-30 feet thick in channels and 3-10 feet thick in flood deposits.

Qpc FINNEY CREEK ALLUVIUM (HOLOCENE)-- Clayey sand and silt, partly gravelly, yellowish-brown to dark-grayish-brown; commonly has alternating darker and lighter colored flat even beds a few inches to 1 foot thick, has much silty material. Commonly forms vertical banks along main streams with a terrace 5-20 feet above the channel; occurs in most tributary channels and as thin pond or bog clay deposits in small deflation basins; commonly overlain by 1-3 feet of flood silt and sand along Kiowa Creek. Mostly 5-15 feet thick; locally about 25 feet thick.

Qes DOLAN SAND (HOLOCENE)-- Mostly medium to coarse sand; partly silty and has numerous very coarse grains and granules; grayish-orange and grayish-yellow to light-yellowish-brown. Many grains are subrounded to well rounded and frosted to polished; some grains have partial iron-oxide coatings. Forms gently undulating surface and low dunes trending southeasterly. Sands derived from northwest, mostly from valleys of Kiowa and Box Elder Creeks. Mostly 5-25 feet thick.

Qp PLEISTOCENE DEPOSITS-- Gravel and sand and some thin clay beds and lenses; possibly thick local deposits of silt and clay; generally grayish orange, grayish yellow, or pale yellowish gray; locally has dark-yellowish-orange limonitic parts and some black manganeseiferous parts. Small to large amounts of calcite (CaCO₃), especially in older soil profiles. Mostly stream deposits derived from the south in southwestern quarter of quadrangle deposits are derived from the Dawson and Castle Rock(?) formations, include numerous cobbles and some boulders from the latter, and were deposited by easterly and northeasterly flowing tributary streams. Small amounts of loess (clayey silt to fine sand). Because of intricate overlapping of deposits and consequent difficulty in mapping, some deposits of Holocene age are included; thin unappreciable sheets of silt and sand, mostly in northern and eastern parts, and thin colluvial deposits, particularly in southwestern quarter. Generally 10-20 feet thick but may extend 30 feet northern and eastern areas.

Unconformity

Tcr CASTLE ROCK CONGLOMERATE(?) (OLIGOCENE)-- Poorly consolidated conglomerate and sandstone capping Kiowa-Box Elder Creek divide; white to light-gray and grayish-yellow. Sandstone, arkosic, thin- to thick-bedded; contains pebbles and cobbles mostly 1-2 feet but as much as 3 feet in diameter. Boulders, cobbles, and pebbles are of granite, gneiss, quartzite, white quartz sandstone, and quartzitic chert pebble conglomerate; some cobbles and pebbles are of black chert, pink and gray rhyolite tuff, and pale-brown to light-gray petrified wood. Numerous white bone fragments of large mammals, deeply weathered and mostly waterworn, were found in sec. 1, T. 5 S., R. 64 W. A waterworn fragment of a lower premolar of a benthotherid of Chadron (early Oligocene) age (identified by G. E. Lewis, July 13, 1971) was found at the fossil locality shown on map. Sand and very calcareous soil of Pleistocene age overlying these deposits were not mapped separately because of poor exposures. About 20-40 feet thick.

Unconformity

Tdv DAWSON ARKOSE (PALEOCENE AND EOCENE)-- Arkose, conglomerate, and clay. Mostly white to pale-grayish-yellow coarse-grained conglomeratic arkose and granite granule to pebble conglomerate and some grayish-green to gray and olive-green pebbly sandy clay, in beds about 5-25 feet thick. Some conglomerate beds consist mostly of white quartz cobbles. Arkose and conglomerate beds have both red and gray granite pebbles; these beds are locally limonitic and in a few places include moderate-grayish-brown to grayish-brown very ferruginous hard thin lenses or yellow jarositic(?) crusts; locally contain very small amounts of black manganese oxide(?) grain-coatings in lenses and incipient concretionary form; clay beds and small balls are common near base of beds, and small amounts of brown to black carbonaceous material are found locally in low small lenses and lentils. Bedding of arkose and conglomerate varies from tabular to low-angle crossbedding, with easterly dipping crossbeds predominating. Contains one or more thin red or red-mottled clay layers or lenses, mostly at top of a thick greenish clay interval. No diagnostic fossils were found, but from relationships with underlying Paleocene strata the formation is believed to be mostly of Eocene age. About 200 feet thick in quadrangle.

Td DENVER FORMATION (PALEOCENE)-- Clay, siltstone, shale, sandstone, and lignite beds. Clay, siltstone, and sandstone beds, are commonly fairly pure and plastic. Many thin siltstone and sandstone beds or parts of beds are highly calcareous and hard. Sandstone beds are about all very fine grained to medium grained, mostly fine bedded, medium light gray to grayish yellow (weathers grayish brown to yellowish brown), slightly to moderately limonitic, and some have very ferruginous sandstone concretions and a few small to very large calcareous concretions. Clay and sand ironstone as concretions a few inches in diameter and as thin lenses are common, generally associated with sandstone. Lignite beds are lenticular to persistent; five thick beds are in upper 210-230 feet, and many thin beds are in underlying 200-300 feet. Lignite beds typically have numerous flat persistent layers of white-weathering, pale-brown kaolinite and kaolinized fine-grained sandstone, and interbedded carbonaceous shale and clay; clay blebs less than half an inch in diameter are common in the lignite. The top of an interval of locally or regionally important sandstone aquifers lies 200-250 feet below the thick lignites. Imprints of carbonaceous leaves are common and palm(?) leaves are less common on bedding planes of some sandstone and siltstone beds. Age designation of formation here is based on regional work of Brown (1943, 1962). Upper 350 feet of formation is at surface or just below Quaternary deposits in quadrangle.

Outcrop of lignite bed-- Dashed where slight traces of bed; beds are not shown separately in very narrow outcrops.

Subtop of main lignite bed-- Approximately located; queried where extension of bed is uncertain; better identified bed shown in Graphic Sections, sheets 2 and 3; Et, top, and Eb, base of E lignite bed.

Contact-- Approximately located.

(Tdv) Contact of Dawson Arkose (Tdv) and Denver Formation (Td) below Quaternary deposits-- Approximately located.

5625 Structure contours drawn on top of E lignite bed-- Showing elevation, in feet; approximately located in areas with little or no control; contour interval 25 feet.

4250 Structure contours drawn on base of main coal zone of Laramee Formation-- Showing elevation, in feet; contour interval 50 feet.

022 Coal exploration drill hole-- Number designates drill hole in Graphic Sections, sheets 2 and 3.

W4 Water well containing lignite beds-- Number designates well in Graphic Sections, sheets 2 and 3.

4178 Oil and gas wells-- Described in table 1.

4178 Oil test hole, abandoned-- Showing depth, in feet, to base of main coal zone of Laramee Formation.

4169 Oil test hole with shows of oil and gas, abandoned.

4169 Oil and gas well-- Showing depth, in feet, to base of main coal zone of Laramee Formation.

4163 Oil well-- Showing depth, in feet, to base of main coal zone of Laramee Formation.

***** Abandoned coal mine.

x Gravel pit.

o Fossil locality.

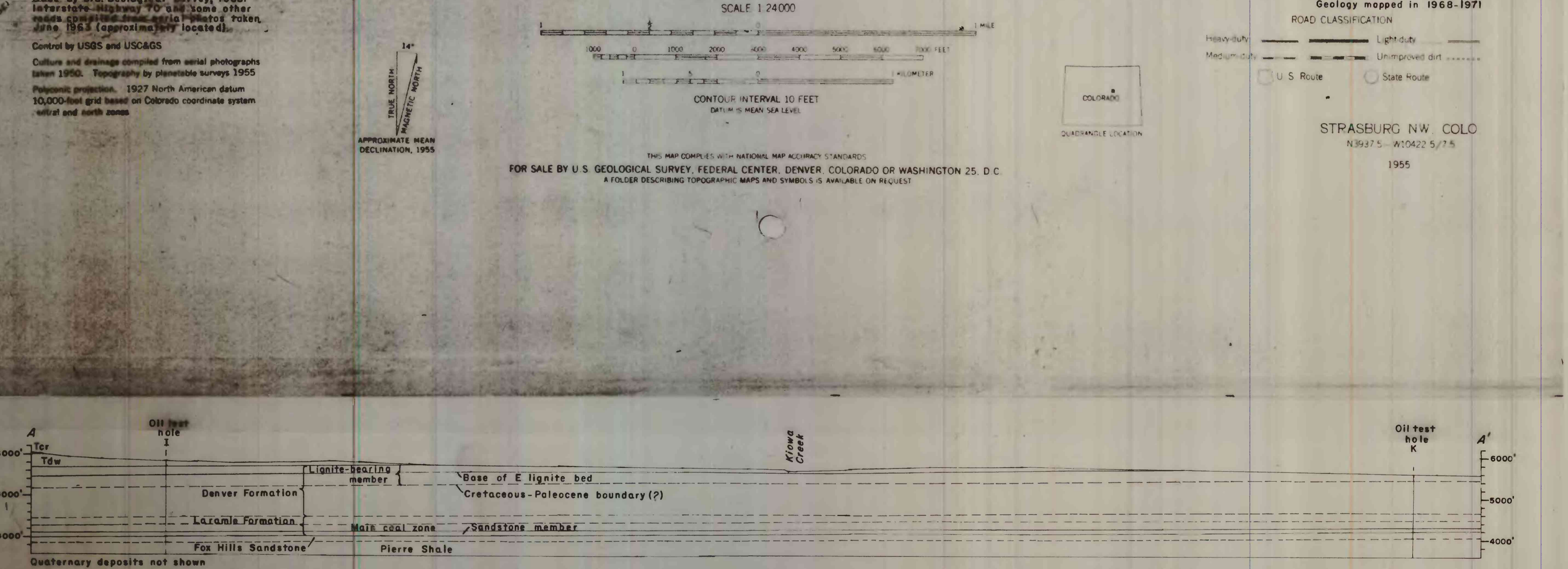


TABLE 1.--Oil and gas tests in the Strasburg NW quadrangle, Colorado
 [NODP, barrels of oil per day; CFOD, cubic feet of gas per day]

Location	Location	Oil and gas tests shown on map	Operator	Well name and number	Elevation (ft)	Total depth (ft)	Date completed or abandoned	Results
4 63 4	A	Acumen-Schulien-Roosevelt and Assoc. Ltd.; Petroleum, Inc.	1 Steckel	5,559	7,825	1/15/71	No tests. Abandoned.	
4 63 10	B	---	1 Summers	5,585	7,788	12/4/70	Gas-cut and on drill-stem test at 7,690-7,788 feet. Abandoned.	
4 63 18	C	Davis Oil Co.	1 Feldman	5,611	8,183	2/1/71	Abandoned.	
4 63 26	D	Petroleum, Inc.	1 Roberts-F.	5,580	7,790	2/13/72	---	
4 63 29	E	Amoco Production Co.	1 Champlin 118 Assoc.	5,719	8,047	12/2/71	Gas-cut and on drill-stem test at 7,940-8,047 feet. Abandoned.	
4 63 31	F	Davis Oil Co., Petro-Search; Jake Simon.	1 Jo Ann	5,790	8,171	7/20/71	Bombing Range Oil Field discovery well. Production from J sand (drillers' usage) at 8,016-8,070 feet (gross). Initial production, 165 BOPD and 242,000 CFOD.	
4 63 31	G	Davis Oil Co.	1 Vince	5,848	8,201	3/14/72	Bombing Range Oil Field. Production from J sand at 8,084-8,119 feet (gross). Initial production, 188 BOPD.	
5 63 6	H	Chandler and Assoc.	1 Rosenfeld.	5,860	8,232	12/29/71	Bombing Range Oil Field extension. Production from J sand at 8,108-8,154 feet (gross). Initial production, 15 BOPD.	
5 63 7	I	Davis Oil Co.	1 Andy.	5,678	8,288	9/7/71	Slight show of gas on drill-stem test at 8,180-8,293 feet. Abandoned.	
5 63 8	J	Saxon Oil Co.; Brownlie, Wallace and Armstrong; Bandler and Couch.	1 Loucher and Allen.	5,790 ^a	8,103	1/15/72	Tight hole. Abandoned.	
5 63 12	K	Acumen-Schulien-Roosevelt and Assoc.; Petroleum, Inc.	1 Burnet.	5,632	7,663	12/24/70	Oil-cut and on drill-stem test at 7,623-7,663. Abandoned.	
4 64 25	L	Davis Oil Co.	1 Murphy.	5,831	8,250	1/18/72	Drill-stem test 8,132-8,252 feet, shut in 45 min., open 90 min., shut in 90 min., gas in 27 min. at estimated 8,000-10,000 CFOD, received 15 barrels of oil. Shut in and flowed 33 barrels of oil and 31 barrels of water in 8 hours. Flowed 28 BOPD. Abandoned.	

TABLE 2.--Probable and possible coal beds interpreted from resistivity and conductivity electric logs of oil test holes

Oil test hole No.	Depth (ft)	Approximate coal bed thickness (ft)	Probable rank of coal	Formation
A-----	1,245	4	Subbituminous C.	Laramee.
	1,423(?)	3	---	---
	1,430(?)	2	---	---
B-----	1,022(?)	2	---	---
	1,284	3	---	---
	1,298	2	---	---
	1,307	1	---	---
	1,315	5	---	---
D-----	1,273	3	---	---
	1,285(?)	3	---	---
	1,324	3	---	---
E-----	1,529	2	---	---
	1,534	2	---	---
	1,549	3	---	---
H-----	267	12 (bed D)	Lignite.	Denver.
	325	24 (bed E)	---	---
	355-430	Several thin beds(?)	Subbituminous C.	Laramee.
	1,677	3	---	---
	1,694	4	---	---
I-----	355	22 (bed A)	Lignite.	Denver.
	359	22 (bed B)	---	---
	377	13	---	---
	633	12	---	---
	582	22	---	---
	1,068(?)	4	---	---
	1,099(?)	4	---	---
	1,205(?)	2	---	---
	1,247(?)	2	---	---
	1,250(?)	1	---	---
	1,291	2	---	---
	1,300	3	---	---

^a Possible coal beds are queried after depth figure; all others are probable coal beds.

PRELIMINARY GEOLOGIC MAP AND LIGNITE DEPOSITS OF THE STRASBURG NW QUADRANGLE, ARAPAHOE AND ADAMS COUNTIES, COLORADO
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