

doc. 0436

1981

UNITED STATES
DEPARTMENT OF THE INTERIOR
DI-6

APPROVED DECEMBER 1941

Karl M. Waage

page

7048

C0385

C0386

O'Leary Ranch SD

13

7111

old woman anticline, WY

3

7111

Edgemont, SD

17

7860

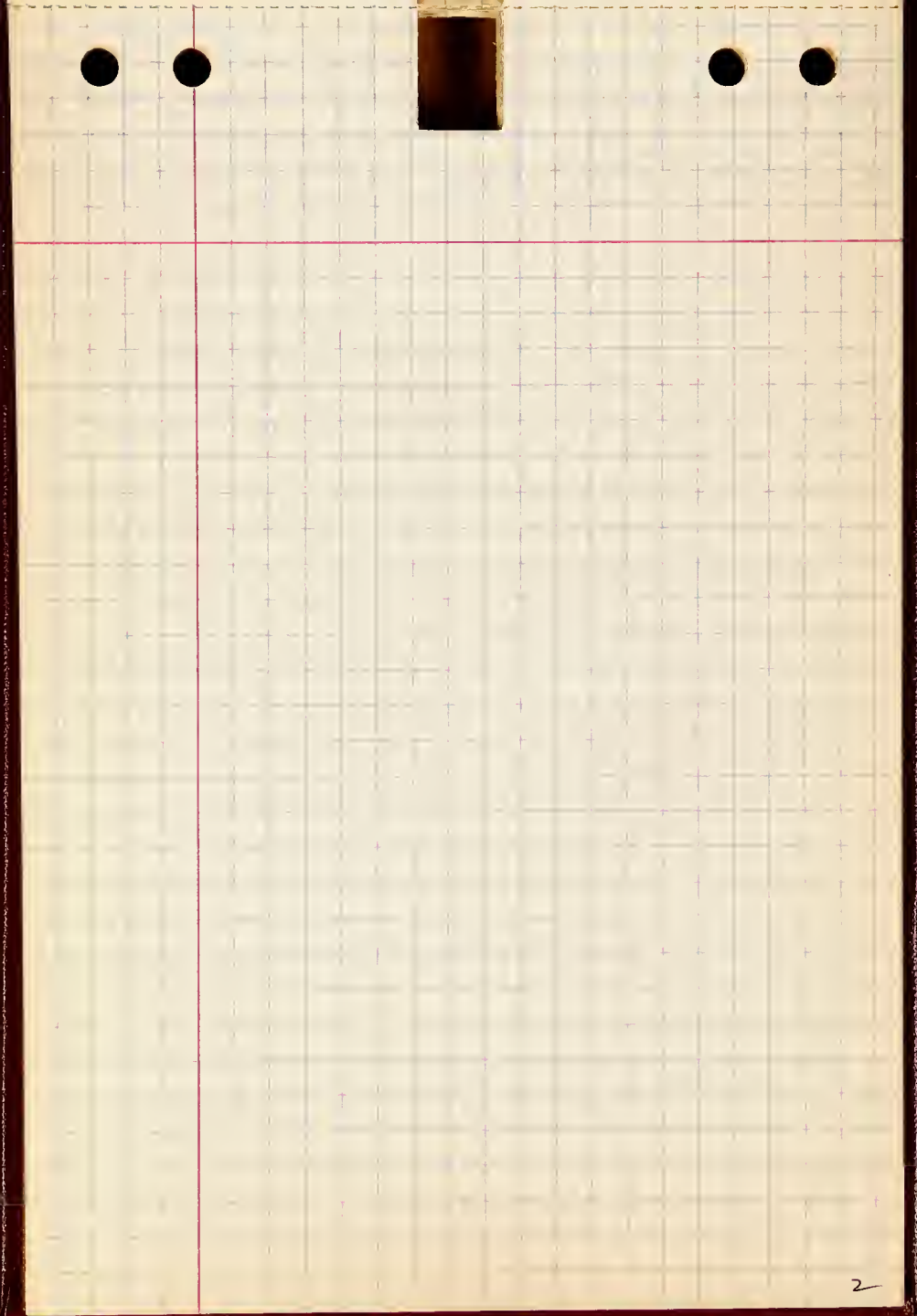
Evanston area

21

E

Meet Neel at T.L. at P.O. 9:30 on
8th.



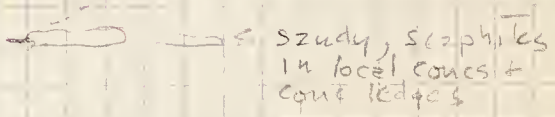
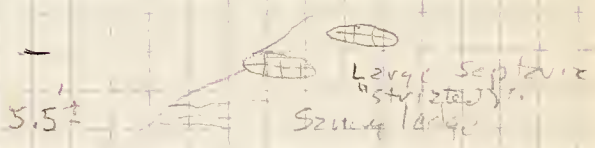




7111

Old Woman Anticline - Carlisle Shale

Initial sketch section of Turner Sundry Memb.
(part)



Platy ss + silty sh

5.0

5.3

5.5

5.4

5.4

5.6

20

✓

1

1

Measured section

Measured up slope \perp strike, beginning at top of basal coarse ss of Turner study member.
Dip $7^{\circ}E$

- ① 16.5 Dark gray to black silty shale with thin interbeds of siltstone and vfg sandstone.
- ② 5.5 Siltstone to sandstone, thinly interbedded locally fq ss beds up to 2" thick. Scattered dark blue silty ls septaria concs., flattish, white oolitic septa. Weather cream colored. No fossils seen in place, in lower 2' of interval.
- ③ 11.5 As in ① but except for sand 4' layers
See below
- 3c) 2.5 To base large septaria ovoid concs.
- 3b) 2.3 Sandstone with sh. partings, thin bedded.
- 3a) 5.5 - As in ①

2.0 Coe = SS in J. F. ...?

2.1 Do you have any ... found ...?

110' ... grey wood
5' ... 5' ... 5' ...
... In ...
... ind. by conc

to 11' zone about 1/2 mile
to N. ...
3' lower ...
...
2' ...

Offset
A
on Spout

Measuring up from four layer in lower
2' of unit 2.

11.8 to Scaphite conc. in place (?).

(4) 8.5

Cherty dk gray shale with thin ss
interbedded. Large calc. scaphiron cones
in lower 2-3 feet. loc. of thin
scaphite accumulation.

Offset
B

Measuring up from Sus. 1 - 2' to
(#2) to base platy ss in capping bluff =
8'

Offset - A
con.

Apparent conc. ^{ss} in place could not be
flinty but it is assoc. with
first sandy bed of cluster of thin
ss beds and scaphiron cones, as follows

5.3 base of unit layer = Sus. 5
8.0 to base platy.



Second Day traverse: (Aug 19)

Up Main Gully.

Scaphite concs in float are septarian layers associated with upper sand bed interval. From one in place it is 8.7' to base Collignonoseres ledge. Scaphites are in base septaria in shell hash with much wood. Collig. remains too. Concs very in Scaph. fossil content.

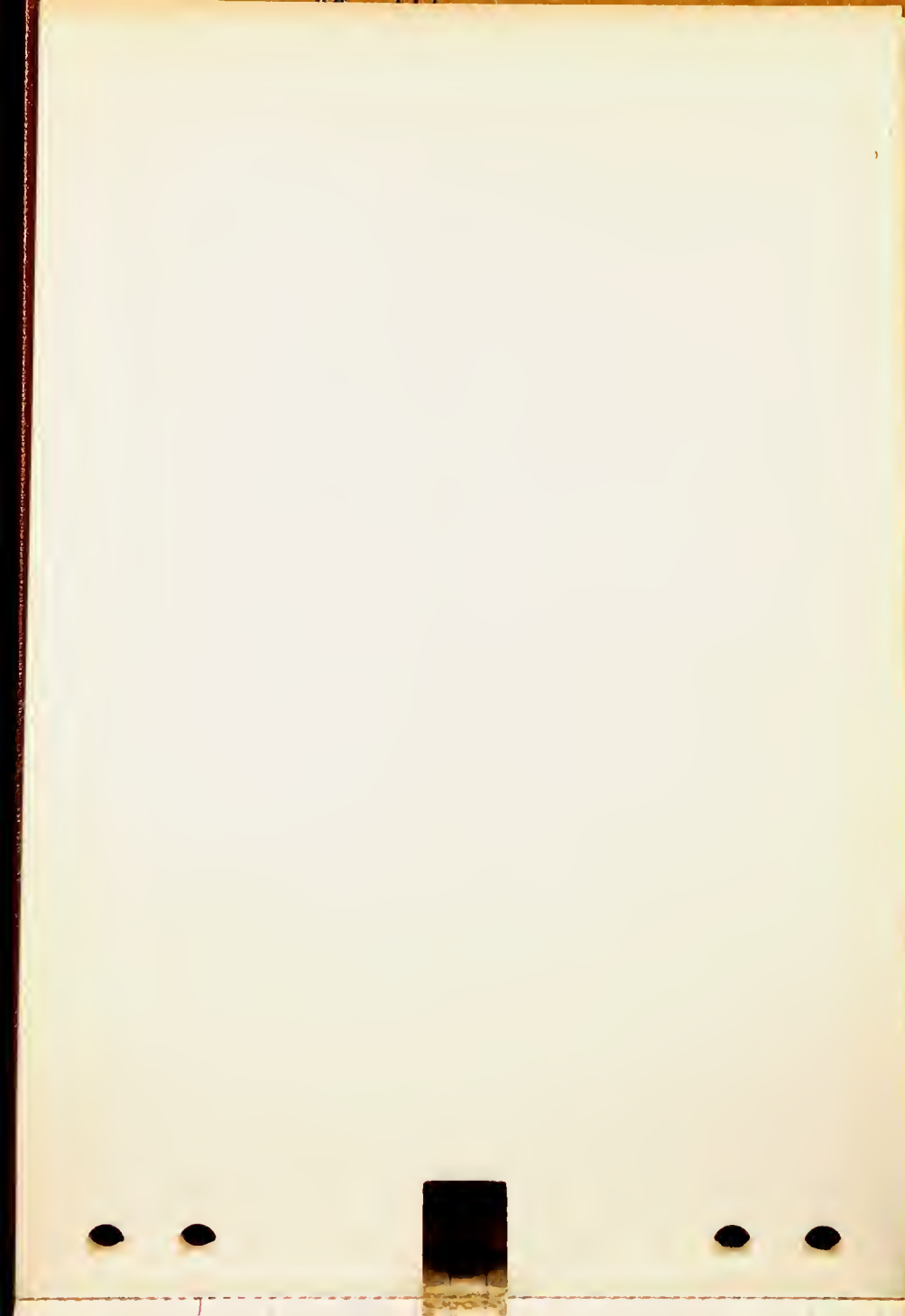
From Collignonoseres ledge to persistent layer large between concs to E in grassy slope is about 16 or 17' I strike

Gully B - Section at scaphite concs.
Gully Bottom.

- ① 5.0 Sleazy thinly bedded ss. shale p. thin. Scaphite concs in place 3.0 - 3.6. Sandy septarian light yellow calcite dk to lite blue gray. fossils in bottom part only



- ② 1.0 Clayey silty shale
- ③ 3.6 As in ①



(4) 5.00 Chiefly grey/dk grey, silty to finely sandy fissile shale becoming interstratified with vfg sand upward. Flat acid smelly septarian conc. at 3.0 above base. No fossils

(5) 5.5 Laminated & cross-laminated ss weathers platy like gray brown locally with large flat cone masses 6 to 10' across, ripple lks & Ophiuroid fossils & other trace fossils & pod - microfossils - chiefly Inoceramus, Collig. ledge, Scaph. zone. This is Collig. ledge - really a sandy zone with frequent large sandy cone masses. Cones & masses chiefly in basal layer ss - up to 3 to 5' thick.

(6) 3.3 Covered to approx base of first layer "sandy" Septarian zone Collig. ledge. These have some frags of large Inoc, with good found. 2nd layer cones in above about 3005 ft.



About 1 mile N. intersection when completed.
Upper Turner.

8.0 Measuring up from base of
Colliq. sandy layers, scath huge
cones + lam ss beds + lenses
more in lower 4' but at least
one at very top interval
directly under next cone
zone.

14.0 Sandy, chiefly rounded interval
contains many large, gray weather
scpt cones, 3-4' diam, flat
void, spaced out about 6-8 ft
contains in upper 3 or 4 ft.
These look highest surface
Also layer more scattered
ones or same type in basal 4'
May be another a few feet above
top this interval but suspec-
t, rather washing or slump
giving this impression.

Locally cones between the
two zones. Interval locally
shows thinbedded ss, + no
silt. suspect all ss.



Belt Faurche Area
Davis Reach

Skeleton section picked up slope above 1/2 mi
SE stock claim in N 1/2 Sec 32 T10N, R2E. Rough
with offset to ridge & Roundout Creek

Covered slope with shale patches exposed
? Lower unit read 1' or more.

? Thin sandy memb.

- ① 1'-4' Shaly fine gr grey ss with large
conc. thin masses up to 4' thick.
2. 16' Grey fine to shaly with gypsum
3. 2.0' Grey sand and shale thin, interbedded
4. 0.5-1.5' Yellow green ss with conc. masses
locally up to 2 or 3 ft thick.
5. 16' Covered - to base zone large very
yellow weathering conc. masses
6. 11' Zone of red very hard, some
set back at west, shaly, 1 1/2-3'
thin in upper part.
7. 15.5' To zone then play RB cong.,
sandy, locally clayey spaced
to ledge, with thin ribbon Ind.



8) 14'

To persistent layer orange-red weathering ^{locally} spheroidal concs. (and 1/2 way up are scattered large platy ss concs with fossiliferous concs at top are 2 kinds, both generally small 1-1 1/2" bright orange + red, oval types, and gray broken more nodular, generally smaller kinds.

9) 16'

covered to shale shale interval capped by large spheroidal. This appears to be the "upper" layer of our localities. Local fossiliferous concs, and small gray spheroidal just above it, on between 1 and 2.

10) 6.5

Dk gray silty shale, scattered rusty weathering concs - small to 2" diam. flat ovoid. Loc with Inu + phos. nodules.

In upper 2' many red orange weather concs 1-2" diam. break to shreds + concs shaly slip a narrow.

Locally some very large conc masses. This level. Loc. fossiliferous - Inu

12
2
16
2
1
16
11
16
14
16
7
12
7

132

11) 12' Covered slope to layer with thin fossiliferous cones, rusty, flat oval, septa, cones. Sphs + scaphites

12) 6.5' Covered to red orange - orange brown cone layer caping high flat behind Davis bldg. Loc. fossiliferous.

Base Turner + below - Carr prop for near highway.

Turner was sandy down layer at bottom Turner to highest brownstone cone in bed with 28+ feet.

continuing section on offset 14

13) 1-2' Orange-red-cone layer which is 6.5' above K layer (top unit 12.7 base)

14) 6.0' Covered - with orange brown sandy septaria. BH top 1 1/2' in Loc. 2550C

2000



small ^{capricorn} ~~irregular~~ ^{cones} with fossils
(bivalves) big ones have few fossils loc.

44

Covered slope, looks sandy, light
sandy clay, ^{concretion} layer of large
sandy spherule caps top. This
appears to be limestone ridge
in area, long dip slope N into next
valley.



81-1

O'Leary Ranch (Talked with Dave, who now runs ranch. Give him copy of TFA bulletin.

C0385

S side of draw \pm 1/2 mile slightly W of S. from O'Leary Ranch. About Corby SE 1/4 sec. 24, T15N, R. 23E, Parade NW. Quad. Bluff contains Sphaerulite about mid slope and above it abundant conchs with ~~Ostrac~~ Pteris Assoc. and many more ammonites - some in slope - also some - Also in float are some CAZ conchs. Collections are labeled by association here as lenses are indefinite.

81-2

O'Leary's Ranch, About center E 1/2 sec 25, T15N, R. 23E, Parade NW Quad. Here esp at edge east-facing bluff is POAZ \pm

C0386

and Actinospira layers are in slope just below. Some pods Actino's and small conchs with individual ammonites from which specimens taken.



Squid Loc. Sec. 23 T38 N R61W.

Squids in def. coal horizon. Boring Foreman
H285

Lance Creek - Woman in West Lance Cr.
has collected

At Hill City: - *Syringoplychus wrighti*
- Seeds from FH
- Pathologic. Specimens
-

Evercost Marine Resin with hardener (use 2X)



Becraft Hill Area

Hudson South Quadrangle

- ① Contact with Normanskill and decollement.

Foot or two Roundout overlies contact, then Mzulius and Coeymans lss.

Note: finely stratified character Mzulius; look for sandy ls on contact.

- ② Section in Cemetery Quarry

- ③ View Old Quarry for gross characteristics of units. Glaciated pavement on top is in Glenview (see fossils), underlain by Alsea, Becraft ~~possibly~~ New Scotland etc.



(4) View of large quarries. Also to S
a higher level quarry in Esopus
which shows well massive nature
of this unit.

For permission to get into quarries see
JR who has the address of Co. and
copies earlier permits

4.

2.1

4.3

1.0

0.8

5.6

1.0

5.0

12.0

0.2

9.2

44.9

7111

Civilian section at 10-2, Edgemont SW quad
Skeleton

x to 4'

With few scattered large flat platy
cones silt bands local Colligoniceras
+ S. lerviformis in what look like
wash layers and pockets

10-2A
=D1615

- 2.0± Thin bedded siltstone.
- 0.1± Bentonite
- 4.5 Dark gray silty sh. with silt
partings, one or more layers
small (8-10 l.d.) platy hard to splitty
1st cones local Colligoniceras. Locally
at base silt masses thin bed w. cones loc.
- 1.0 Thin bedded siltstone
- 0.3 Bentonite
- 5.6 Gray to dk gray silty sh, silt partings
some platy cones lower part
and local gray platy mass cone
silt up to 3' thick.



- 1.0±
(10-2 C)

Same lith as below with layer that
platy^{is} zones (up to 1.6+)

5.0

As below but more silty stringers.
Capped by 0.7 interval with thin
hash silty limestone beds. Locally
these thicken. Distinctive hash
of fish teeth scales limpets in
brn platy limy slabs. Local oyster
lenses. Lone platy ls conc 3.0

12.0

Gray fossil silty shale + silt
stringers. Lone platy ls conc at 3.0 above
base. Upquilty fossiliferous 8.5 below
beaumontite.

★ (10-20)

0.2

Gray clayey silt with 0.1 bitouls on top

9.2

Like gray warty clayey silt + sand
in upper 4' grading down to
dk gray silty shale.

(Total Pool Cr. measured = 454 [45 ft])

3.5

Sandstone, f + mgr shale ptgs
in beds to 1.4 inches th. ch

(Base Turner - 24 abrupt change
to this ss but interval below grades to it.)

First massive x-bedded ss (conc)



Faith Area:

Visited Grouse Mountain Mason's ranch where BHRI Inc. has its dinosaur quarries - with Neal Lawson, John Bay, Blonde + Son Jason;

C0470

Dinosaur remains coming from dk brown weather clay bed about 15' above cypress bed in. Calcite lithofacies. Grav shale or liq. sh. occurs \pm 5' below cypress. DS found ammonite preserved in cypress beds. Also has *Aburiscus*, *Melania*?, *Lunatia*, large *Coronula* + prob many. Oyster bed is another example of local intertonguing in inter-distrib. bay & distrib. channels.

This is at locality 40, on Redline NW Quad. Grouse Mountain Mason's ranch house on Faith NE Quad



Timber Lakes

Alza Brockmeyer USC. Johnson Bros
Trail City - working on F.H. Lawrence "USS"
Aberly runs "Wahlte" in Trail City.

Hump Creek - Arnold (Itzvald or Wes)
Arvid & Rzuchi - OK to
go on Hump Cr. Bluffs.



7860

Evinston Area. 7 or 8 miles S. of town on
the East side of Bear River

Road cut exposures of Bear River Fm in
east wall Bear Creek. Gravel Road. This
takes off to S. just E of bridge that
takes Whowing Hwy # 150 across Bear
River. Good outcrops start about 1/2 mi
S of #150.

Succession varied. Thin to medium beds
of shale, crin. shale, chert, limestone
& thin limestone. Also lignite & bentonite layers

Beds are upside down. This shown by
dominance of concave-up shells in
numerous shell beds in strata.



Review of the Tees Hills Fm depos environments

Discussions rised, again, the problem of whether these indeed represent barrier - delta or 2 separate (in sense of depos. envs) depos systems, or whether they are barrier - lagoon. Allen Lince Cr. most agreed with barrier delta but it was not with much certainty, the Bullhead lithofacies is the major problem.

Talking with Dave L. & Remmer in discussion other possibilities

T.L. is shoreface delta front sand that at its SW end is prograded bar-like in a spit.

T.L. is barrier, Bullhead lagoon, Colgate delta or lagoon.

Read Balsley Field Guide to Beach Cliffs - is excellent review of features & / or cl. fac. in general.

Dave L. & I agreed we need to look more closely at delta vs. Lince Cr. & fine structure. A review of T.F.H. in order.

Another MS is the Bear River - this was open, Erle obviously interested. At this stage it is not a final possibility but its very complex. The PID prospect is located entering in structurally complex zone as problem.



Dave Lanza's' zvez. June 21, 72

(21) NW-SE. shoreface sands. stack to SE toward
sea. To NW go beach + FW.
briefing Genl sequence SF ss. to beach + FW. 4
episodes in this part (lower 6-100 ft scale).
Trans. discont. sequence units. whole
sequence \approx Blair (compaction).

^{Dave}
Loc. (Sec #7) Starts with lower massive S+P ss,
#1 bioturb with burrows incl Ophiu.
Burrows both V and h. Multidirectional
Ophiu. This ends fairly abruptly,
locally at a platy Fe surface which
contains shell ghosts (frag) and may
be a lag. Above is med. trough X b.
interp. to marine zone base
rep. upper shore face in relation
to LSF of bioturb unit. The USF
sand has some Ophiucomps.

Above the USF sand grades (just
could be exposed but could be seen in
upper part of ss) into sh + s, 'ben with
plant hash.

Transgressive discont. inferred here
but covered

#3 Next LSF sand unit has
good fairuz in conc-like masses
in lower 50', including ammonites.
Plectambonites sp. + Beudanticeras
Bedding very even throughout sand except



#3 | in lower 60' where bioturb zones
 with cone masses + terrule with
 thin-bedded, lzyrus which weather into thin
 ledges. A top is seen in USF sand,
 then later from carb shale.

#4 | Next is thick gray white sand with
 brownish streaks in approx 1 bedding.
 Dze thinks this is 3rd ss thick because
 of alternation of LSF and USF.
 At top is rootlet zone and Fe crust
 under next thin bed shaly which has
 subq lamination with coffee ground printings.
 Local sharp contact on this with ripple.
 Most of west USF - Dze says, some
 LSF in lower part. We miss this.
 At top this ss is burrowed rootlet ss
 thin coal + shale zone. The ss is 125'
 "increases" in thickness. It is 4th ss.

C

100

100

← Model

100

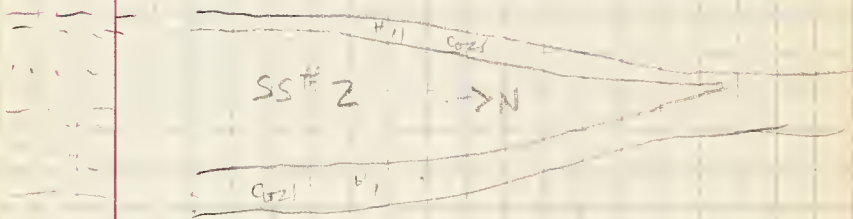
100

100

June 23, Keweenaw, Coal Co. pits.

with Howard Geslin, KCCO geologist,
& engineer.

Pit. 1-J #2 ss and over 100' with coal
base (#1) and top (#20). This ss.
interval goes out abruptly to N
and to S. an outcrop interbedded
with carb. shale & coal below going
into the shoreface #2 to south.
This local ss in pit variously interp.,
it is trough & bedded, Evie found wood
old-shore forams, leaves.



Pits 1-H/1-K: See photos. by Dine, highly complex
'excalation' channeling



Pit-
10.0

#1 and up lower coals in huge open pit

NW cor
10.0 pit



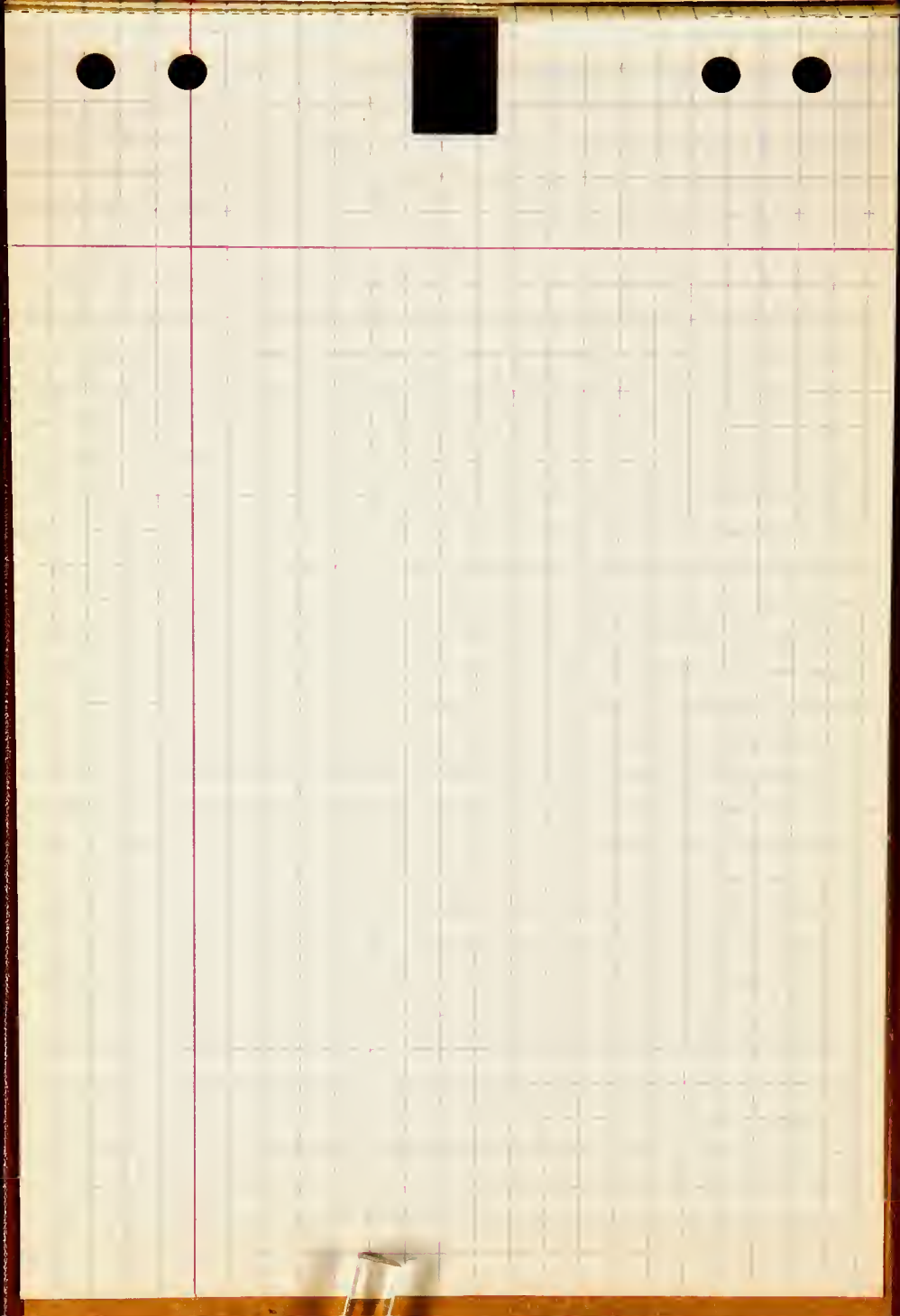












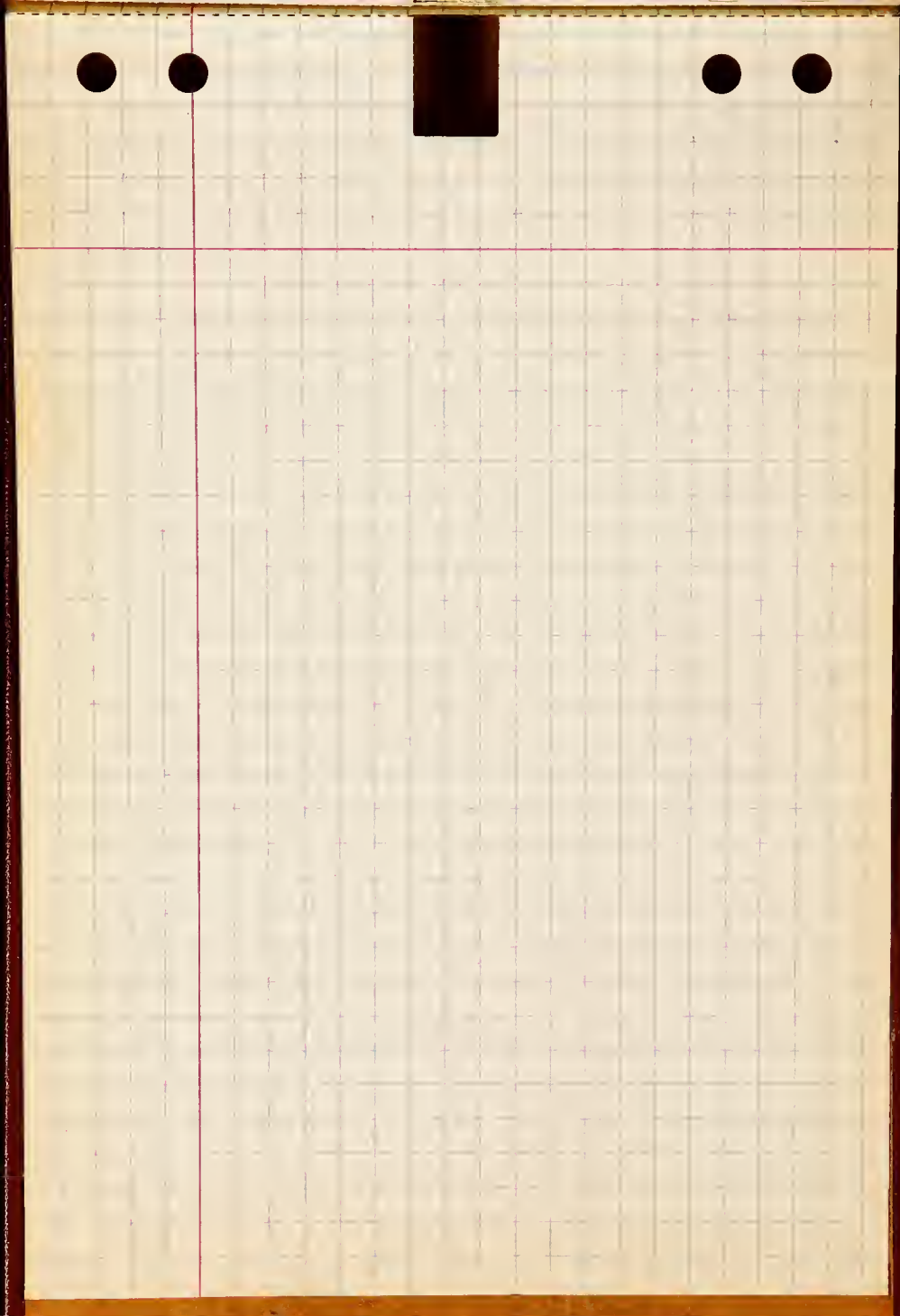
Locality # 1

Gully Systems
WEX 1 road

5
2

X SCHEMA





Jan 2
Bills / Dollars - 5.75
Bills / Dollars - 12.75
Total



