APPENDIX F – Summary of Geotechnical Findings

C-17 Geotech
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MEMORANDUM P-3-2002

TO: Annette Coffey, P.E.
Director
Division of Planning

FROM: William Broyles, P.E.
Geotechnical Engineering
Branch Manager
Division of Materials

BY: R.T. Wilson, P.G. R.T. Wilson
Geotechnical Branch

DATE: January 10, 2002

SUBJECT: Muhlenberg County
US 62, From KY 189 to KY 181@ Greenville
Intermediate Planning Study
Item No. 2-138.00

At your request, personnel from the branch have completed a preliminary office review of the subject project.

Pennsylvanian age rocks of the Carbondale Formation consist of an alternating series of sandstone, shales, and coals. Sandstones are generally characterized as brown in color, fine to medium grain size, in beds from 1 inch to greater than 30 feet in thickness and friable. Friable sandstones are not suitable for rock roadbed and lift heights of 1 foot for embankment construction is recommended for stable fills. Non-durable shale or clay shales are present throughout the project. Subgrades constructed from non-durable shales can be improved using type III filter fabric and aggregate in urban areas and cement stabilization in rural areas.

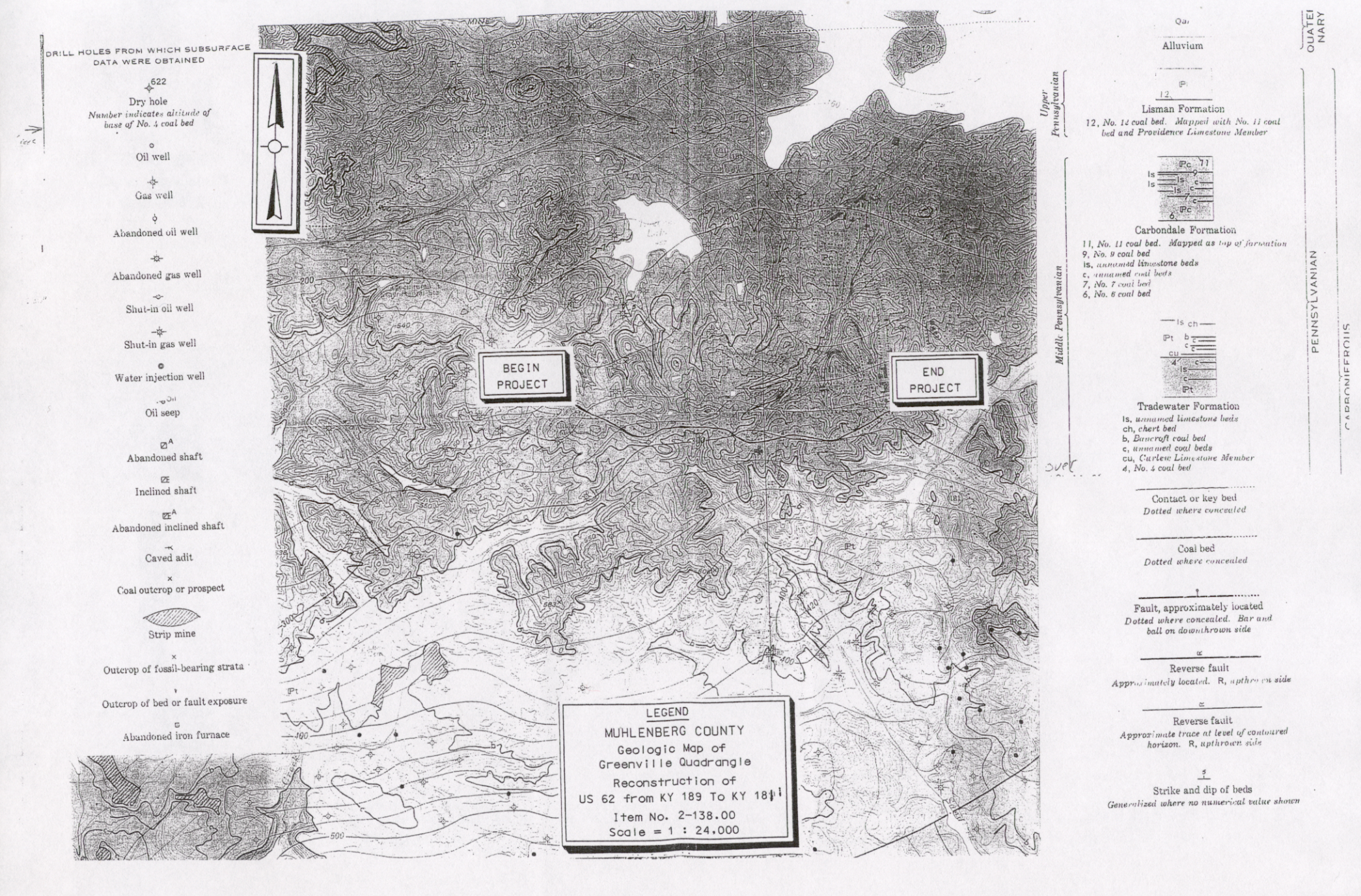
A review of available mine maps indicates the proposed corridor has no strip-mines or underground mines present. A mineral evaluation study will not be required after a preferred alignment is selected.

Embankment benches will be necessary in sidehill conditions. Limestone or sandstone (2.0' minimum) should be placed on the benches for drainage.

Regional dip is from the south to the north, making saturated soil conditions possible on the south side of hollows. Wet embankment foundations can be corrected using type III filter fabric and 2-3 feet of aggregate.

This project is in a classified Seismic Risk Zone 3, which is defined as an area of high damage due to earthquake activity.

If there are questions please advise.


DRILL HOLES FROM WHICH SUBSURFACE DATA WERE OBTAINED
622
Dry hole
Number indicates altitude of base of No. 4 coal bed
Oil well
Gas well
Abandoned oil well
Abandoned gas well
Shut-in oil well
Shut-in gas well
Water injection well
Oil seep
Abandoned shaft
Inclined shaft
Abandoned inclined shaft
Caved adit
Coal outcrop or prospect
Strip mine
Outcrop of fossil-bearing strata
Outcrop of bed or fault exposure
Abandoned iron furnace
BEGIN PROJECT
END PROJECT
LEGEND
MUHLENBERG COUNTY
Geologic Map of
Greenville Quadrangle
Reconstruction of
US 62 from KY 189 To KY 181
Item No. 2-138.00
Scale = 1 : 24,000
QUATERNARY
Qal
Alluvium
PENNSYLVANIAN
CARBONIFEROUS
Upper Pennsylvanian
Middle Pennsylvanian
Lisman Formation
12, No. 12 coal bed. Mapped with No. 11 coal bed and Providence Limestone Member
Carbondale Formation
11, No. 11 coal bed. Mapped as top of formation
9, No. 9 coal bed
ls, unnamed limestone beds
c, unnamed coal beds
7, No. 7 coal bed
6, No. 6 coal bed
Tradewater Formation
ls, unnamed limestone beds
ch, chert bed
b, Baneroft coal bed
c, unnamed coal beds
cu, Curlew Limestone Member
4, No. 4 coal bed
Contact or key bed
Dotted where concealed
Coal bed
Dotted where concealed
Fault, approximately located
Dotted where concealed. Bar and ball on downthrown side
Reverse fault
Approximately located. R, upthrown side
Reverse fault
Approximate trace at level of contoured horizon. R, upthrown side
Strike and dip of beds
Generalized where no numerical value shown