



#17 Taped pipe after lowering-in, ready to be covered.
Photo taken June 26 on state parcel PH012.



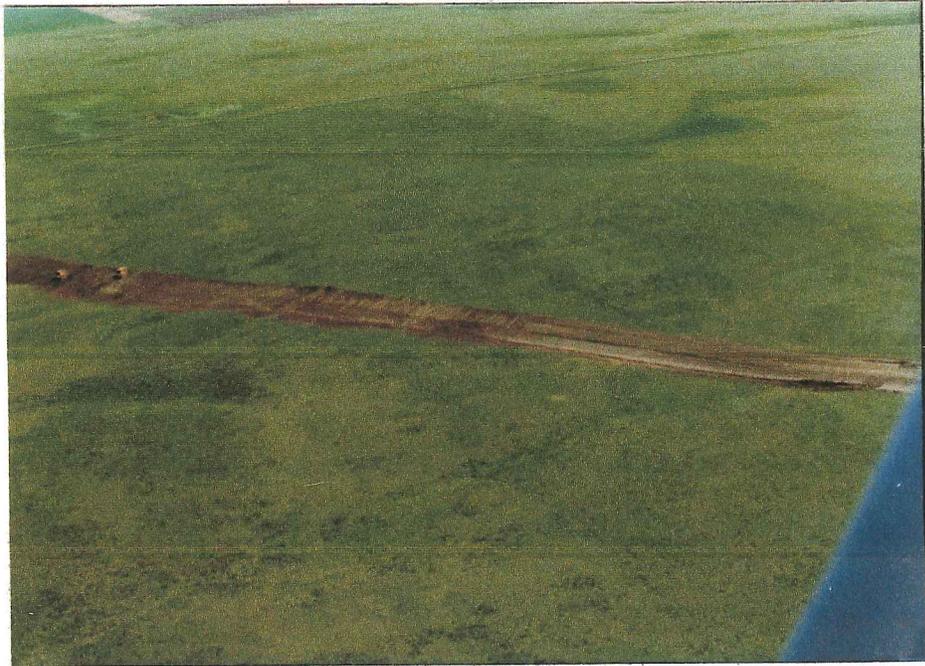
#18 Ditch spoil being replaced by auger mounted on front of tractor.



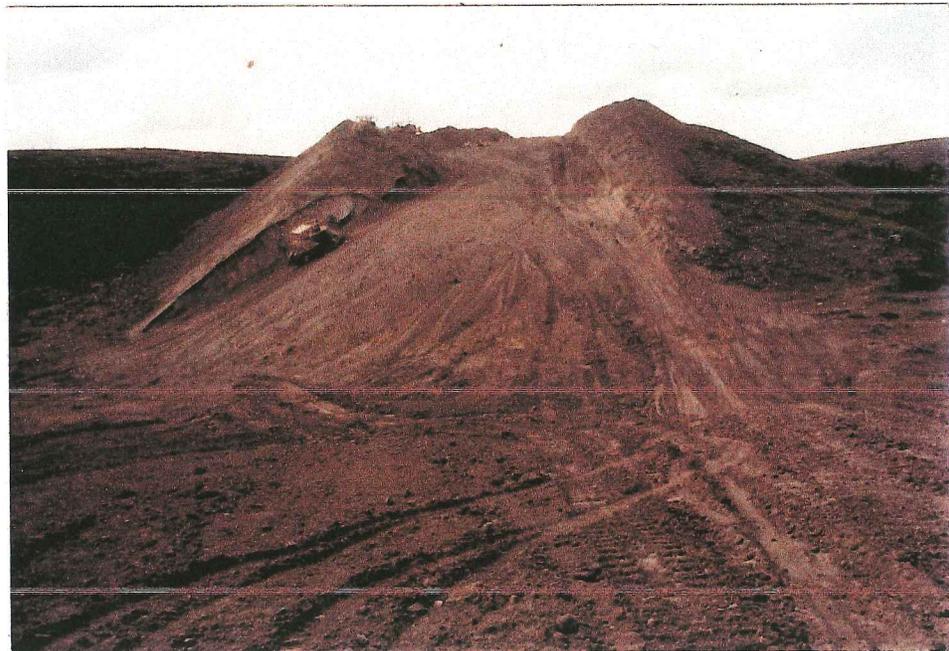
#19 Backfill operation consists of: augering, a dragline pulling in the rest of the ditch spoil, and a front-loader bringing up the rear acting as a packer. The man on the pipe in front of the auger is responsible for flipping rocks off the pipe to prevent damage to the wrap. Photo taken June 26 on state parcel PH012.



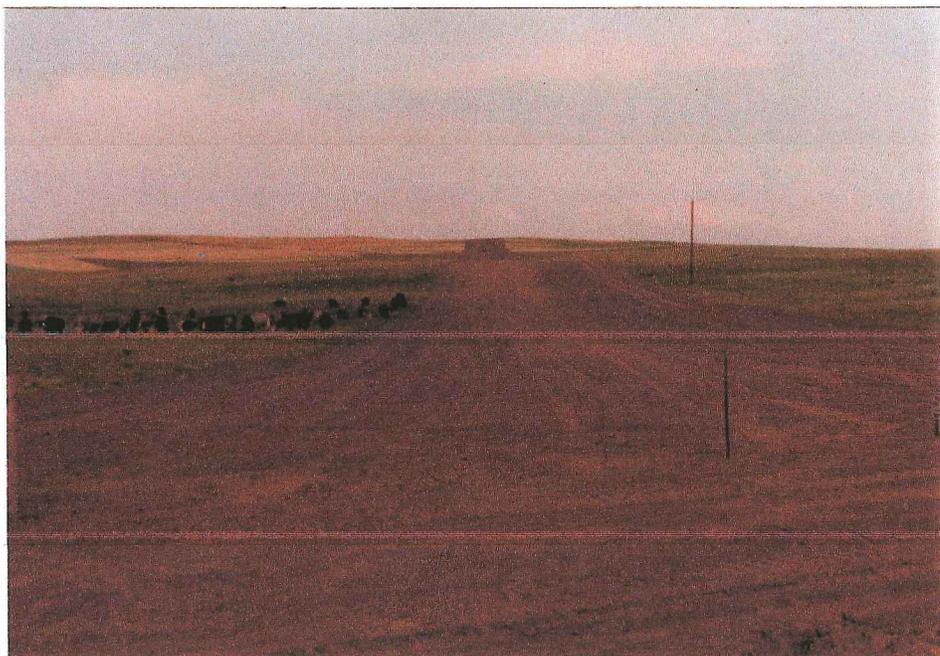
#20 Aerial view of clean-up operation in Phillips County as it begins on June 26. The dump truck is burying rock, dug up during trenching and clearing, in a side-hill cut.



#21 Clean-up, Phillips County, looking northwest on June 26. Note the subsoil showing through. The ditch is on the north side of the r-o-w. (See also photo #78)



#22 West bluff of Frenchman Creek Valley being re-contoured on July 22. See photos #40 to #43 for a more detailed description of restoration on rough terrain.



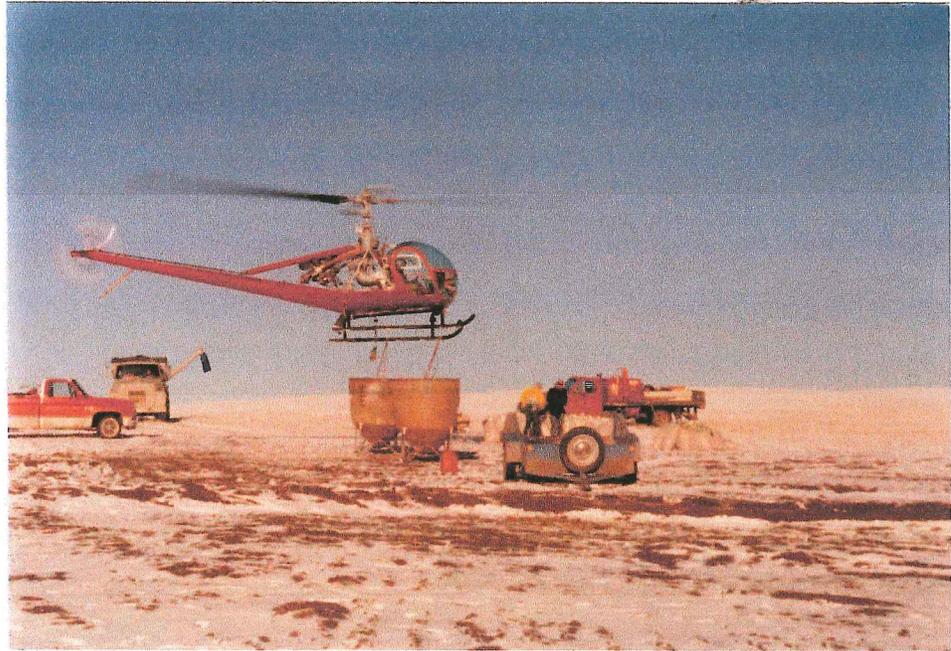
#23 Clean-up completed by July 24th at the beginning of Spread #2, about 3 miles east of Big Muddy Creek in Roosevelt County.



#24 Reclamation, November, 1981, in Phillips County. Mulch has been applied (photos#24 through #27 courtesy of Office of the Federal Inspector.)



#25 Erosion prevention in drainageway, November 1981. The exposed soil surface is covered with a biodegradable mesh after seeding has been completed.



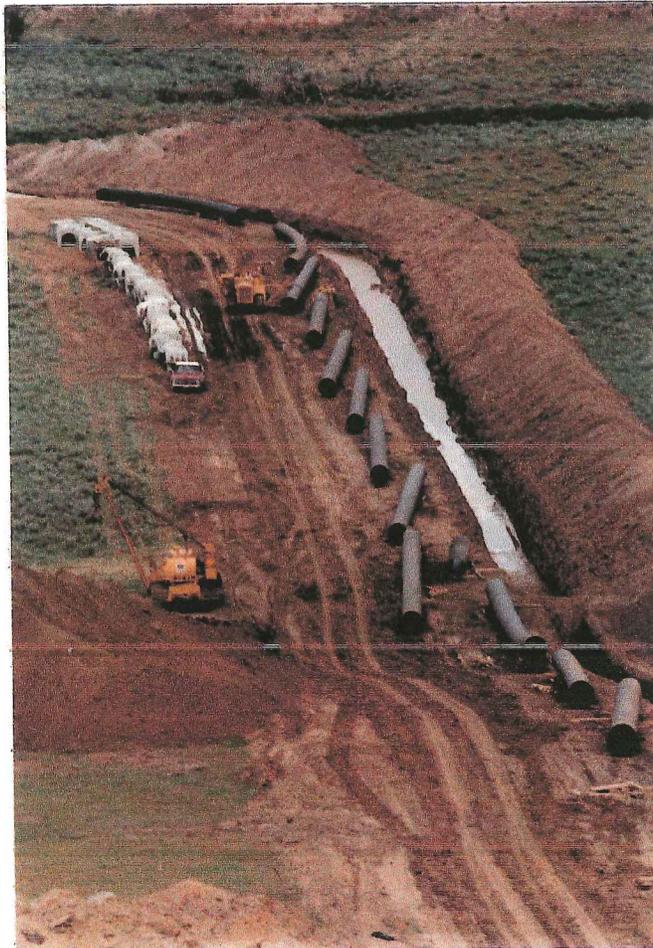
#26 Helicopter seeding crew. The helicopter carries a bucket that spreads native grass seeds on the r-o-w.



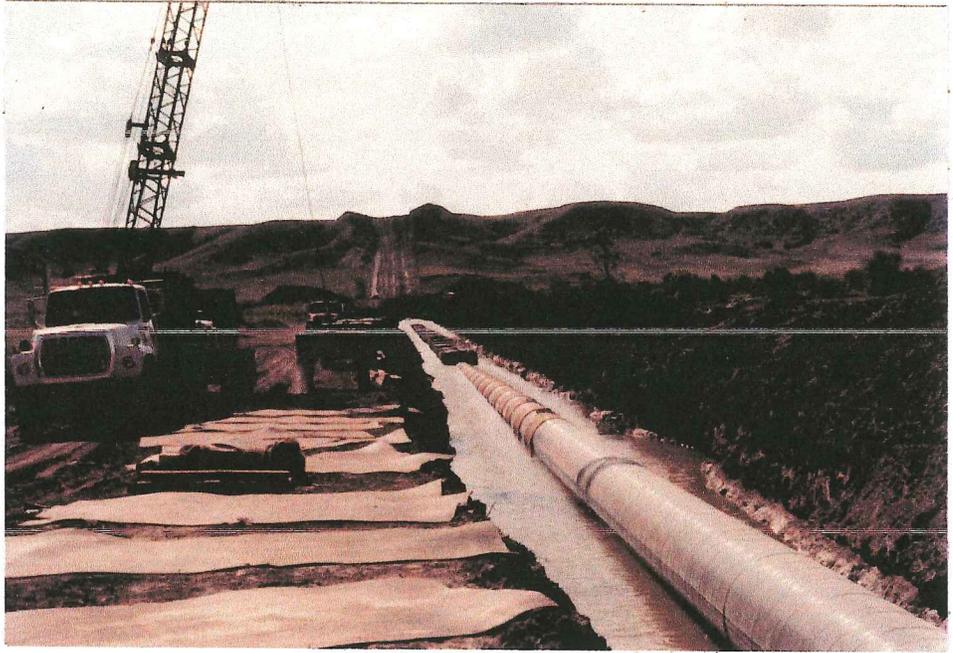
#27 Helicopter seeding crew.



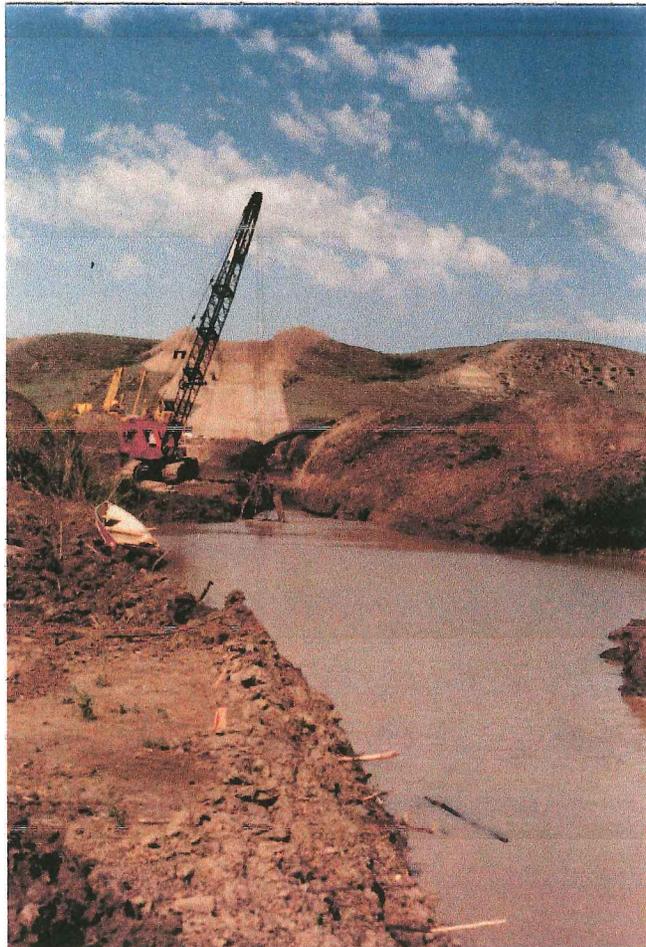
#28 Crossing of Frenchman Creek Valley looking east on June 26. The Frenchman Reservoir is just downstream, and a proposal to raise the reservoir level would result in this area being flooded. Note: 1) the east bluff had not been cleared at the time of the photo because no final agreement had been reached with the landowner, even though construction had been nearly 7 weeks before, 2) the DNRC owns 40 acres of floodplain just west of the base of the bluff which is crossed by the pipeline (VA001), 3) a floating bridge which remained until completion of construction.



#29 East side of Frenchman Creek floodplain on July 14, pipe ready for welding. The eastern side of state parcel VA001 is just beyond the pipe bend. Note: 1) Trench filled with water across most of floodplain seen in #28, 2) Concrete weights to prevent pipe rising out of saturated floodplain, ready to be placed on pipe. Two kinds can be seen; rectangular "set-ons", and rounded "bolt-ons" are placed both above and below the pipe, 3) Trench side-wall slump, requiring additional backhoe excavation.



#30 Set-on weights being placed on pipe after it is in trench. Note the thick felt pads placed around the pipe to protect it. Photo taken July 14 on state parcel VA001.



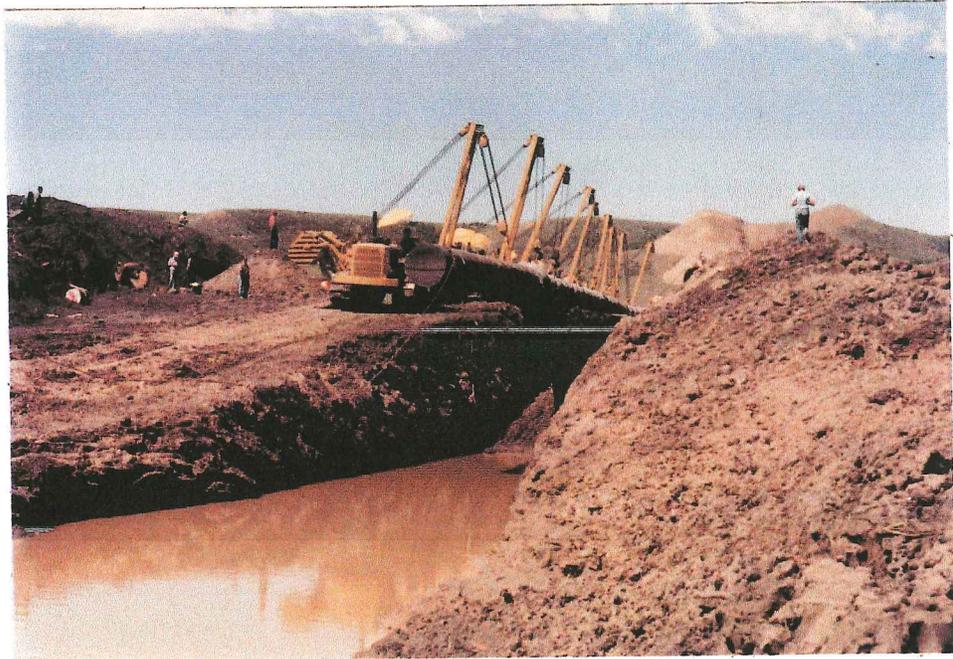
#31 Dragline opening ditch across Frenchman Creek, the last step before placing the pipe. Taken looking west from the east bank on July 14.



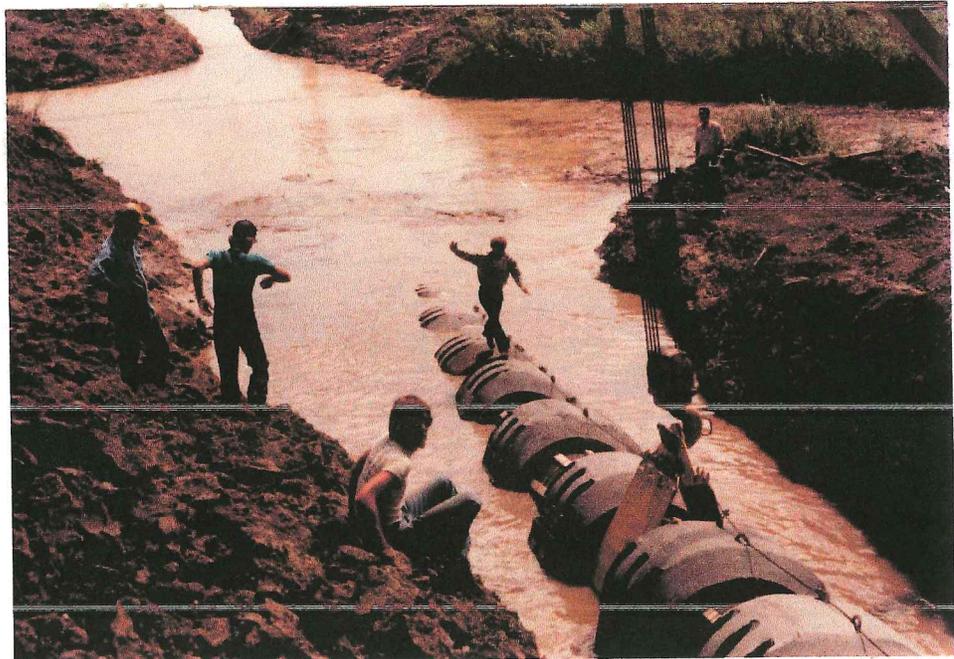
#32 Side-boom tractors lifting the creek section to pull it across. Concrete weights in place. The lead tractor, which winches the section across the creek with a cable, is in the foreground.



#33 Another view of the river section ready for pulling. View is looking west on July 14.



#34 Approaching the creek from the west. The lead tractor, not in the photo, has started to run out cable for pulling pipe. The foreman across the stream stands on the spoil bank to the right and orchestrates the movement of the tractors.



#35 Frenchman Creek section being pulled, looking east. A tractor, out of the picture, is winching it across the stream.



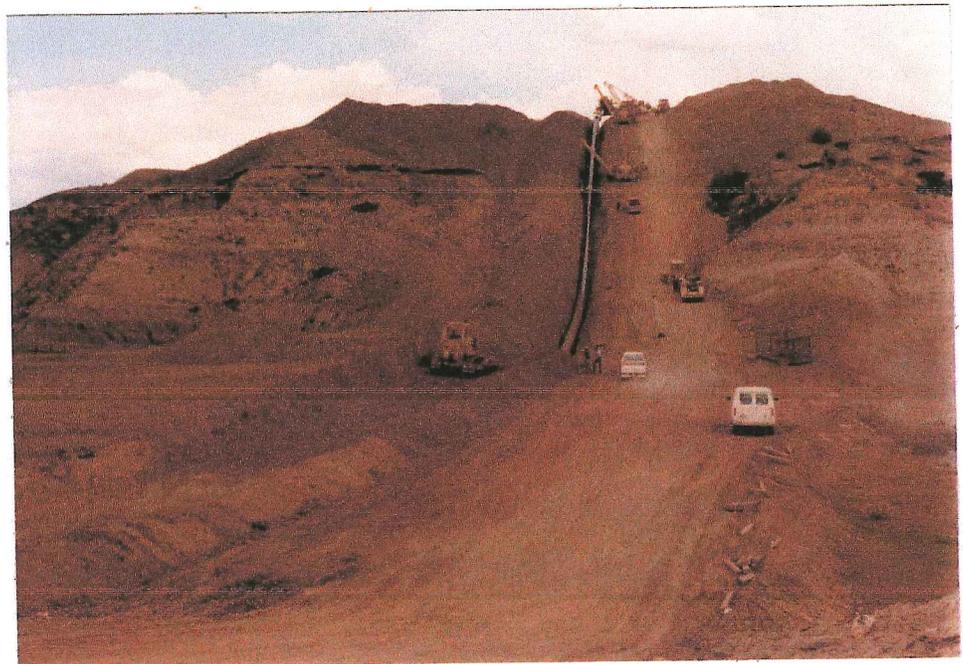
#36 Ditched floodplain of Big Muddy Creek, Roosevelt County, looking west from creek edge on July 24.



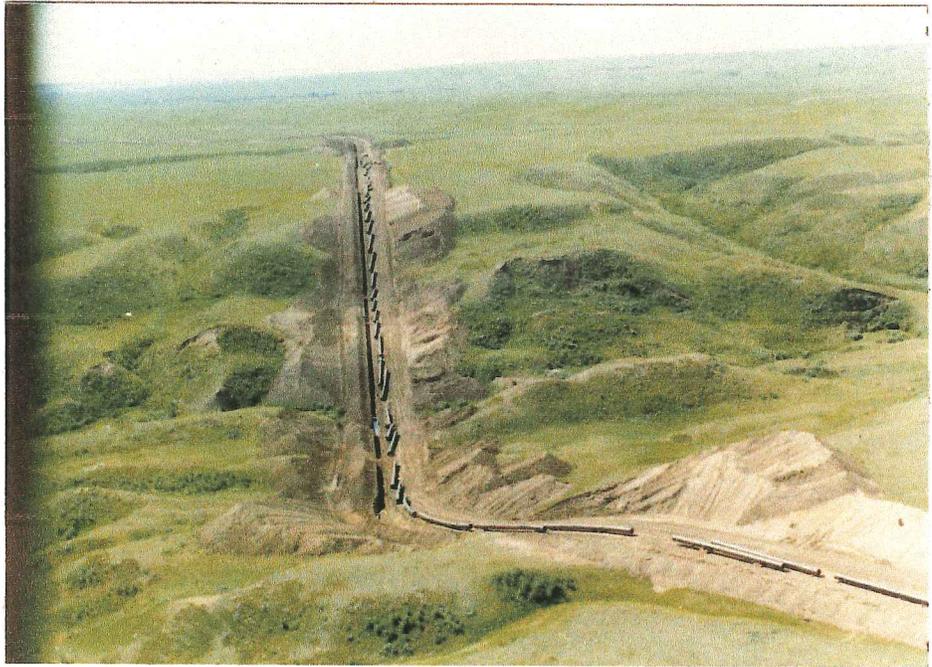
#37 Rock Creek Canyon, Valley County, looking south from the pipeline right-of-way on the east bluff on July 14.



#38 Rock Creek Canyon, looking west on July 22, construction in progress. Note: 1) Dozer covering pipeline, 2) River section lying next to creek on the base of the west bluff. This was the roughest terrain encountered in Montana.



#39 East bluff of Rock Creek, pipe being laid on July 22. Note: 1) Sandstone ledge which required blasting, 2) tractor pulling truck up slope, 3) dozer blading spoil back into ditch.



#40 Aerial view of Coyote Coulee area, Phillips County, looking east on June 26 toward Frenchman Creek on the horizon. (This is partially BLM land, parcels PH028 and PH029.) Compare this with next three photos and see "Right-of-way requirements" section.



#41 Same coulee as above, looking west on June 25. Note: 1) the side-boom tractor negotiating the 80-foot pipe section, 2) depth of burial of the pipe in some cuts (see photos #69-#73 below).



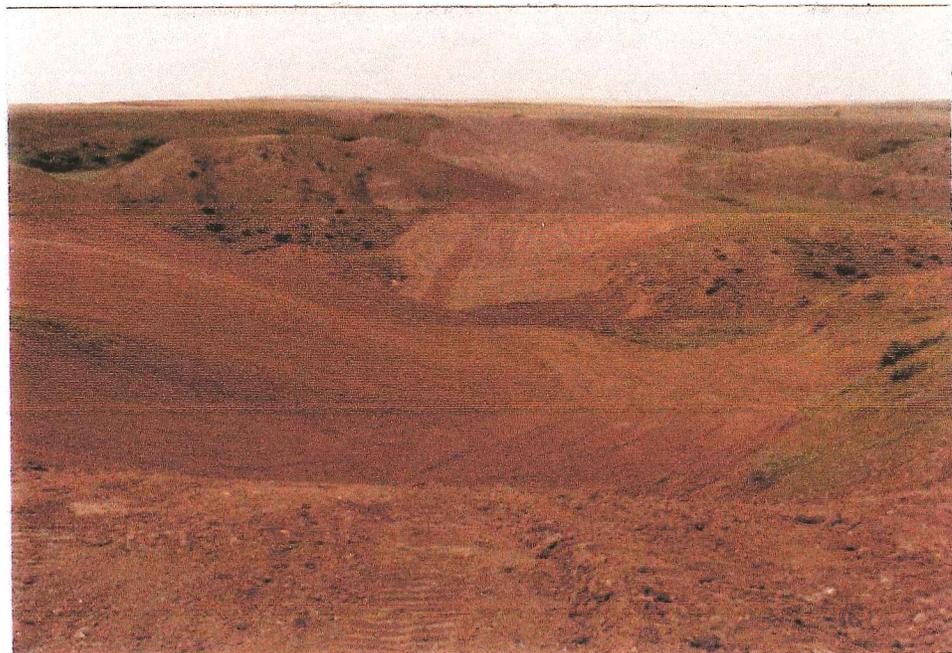
#44 Construction across badlands. The r-o-w crosses an unvegetated shale knob on the east side of the Bitter Creek Valley. The top of the knob was crossed rather than a drainageway because less erosion would occur on top. Note the depth of cut into the knob on the right side of the picture. Photo taken looking west on July 22.



#45 Frenchman Creek crossing after re-contouring, looking east from the base of the west bluff on July 22.



#42 Same coulee looking west from east side on June 25.



#43 Same coulee on July 22, from approximately the same spot as #42, after re-contouring. Waterbars, small dikes built across slopes to slow water erosion, are present but not visible.



#46 Deciduous shrub/tree coulee about six miles east of Big Muddy Creek, Roosevelt County. American elm and green ash are the main tree species. The black material on the spoil bank is lignite. Photo taken July 24.



#47 Bored road crossing, Valley County. Boring was done, even on small roads, to prevent road maintenance problems. Photo taken June 23.