REPLACEMENT PAGES

NRC STAFF EXHIBIT 11

SECTION VI

GEOLOGY REPORT

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Prepared for:

WASTE CONTROL SPECIALISTS LLC
ANDREWS, TEXAS

Prepared by:

Cook-Joyce, Inc.
812 West Eleventh
Austin, Texas 78701

&

Intera, Inc.
9111A Research Boulevard
Austin, Texas 78758

there are no Triassic/Cretaceous contact offsets or bedding offsets in the Cretaceous Antlers Formation above the area in the Triassic red beds where the largest displacements occur nor is there any apparent folding of the Antlers Formation in this area. Therefore, there are no indications that the Cretaceous-aged Antlers Formation was affected by the faulting in the Triassic red beds. There are clearly no geologic Formations present in the excavation younger than Triassic that are affected by faulting and there are no regulatory issues related to faulting at the WCS site. Additionally, there are no issues with respect to potential migration pathways resulting from the faulting at the WCS site. The uppermost faulting occurred completely within the Triassic red beds; which have great capacity for healing and closing fault planes and joints to fluid migration as indicated by the limited penetration of the alteration front in the red beds.

4.1.1.4 *Red Bed Ridge Development*

Faulting of any significance in the vicinity of the WCS site or the Central Basin Platform is generally considered to be Permian or earlier (Nicholson and Clebsch, 1961). Galley (1958, p.439-441) indicates that although "events associated with Laramide and several Tertiary orogenies have broken, destroyed, submerged, or obscured various segments of Paleozoic structures at the southwest edge of the Permian Basin", "Elsewhere the Paleozoic strata lie at almost the same attitudes they had attained at the end of Ochoa time, having been affected subsequently only by regional tilting and local folding or faulting of small vertical displacement." These statements indicate that the Central Basin Platform area has not been significantly disturbed by tectonic events since late Permian (Ochoa) time.

The post-Permian/pre-Cretaceous tilting, folding and faulting discussed in the previous section may have contributed to the development of the red bed ridge by creating a relatively local topographic high uplifted by the minor compressional faulting/folding of the red beds. The local geology discussed in Section 5.3 indicates that the first continuous red bed sandstone, which occurs at an approximate depth of about 225 feet below ground surface, has a south/southwestward dip of about 80 feet per mile. The south/southwestward dipping bedding may represent the southwestern limb of an anticline or monocline with the red bed ridge as the fold axis. The red bed ridge area may have been an inter-drainage topographic high since the compressional event.