EVALUATION OF GEODYNAMIC FACTORS IN THE FORMATION OF NEGATIVE EXOGENOUS PROCESSES ON THE ROUTE OF OIL PIPELINE

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Under the geodynamic factor is understood the power determining the stress-strain state of the geological environment. Because relief is the combined result of tectonic movements and activities of the exogenous geological processes, it is estimated that there is a relationship between different-type strain and exogenous processes. The most noticeable it is in places of high-gradient deformations that are corresponding to high voltages and high-intensity tectonic movements. Active faults, active geodynamic zones, tectonic lineaments, zones of increased fracturing are belongs to high-gradient deformations. They can occur within the intensive development of exogenous processes including dangerous level. This is due to the fact that within the high-gradient zones, usually fixed decompression and loss of strength of rocks on the physical properties (weak zones), resulting in such zones are favorable for the localization of dangerous exogenous processes. In contrast, intensity, and local manifestations of the latter may be a sign (indicator) of high-gradient localization of deformation (zones of high geodynamic activity).

The contribution of geodynamic activity evaluation in the development of dangerous exogenous processes to the main oil pipelines carried out in two stages. At the first stage highlighted the potentially dangerous structural and geodynamic elements that intersect the route of the pipeline, using the available geological data, as well as special method of structural-geodynamic and neotectonic mapping. It may be old faults, geodynamic active zones, lineaments, active faults, as well as areas of intense uplifts and basins of different rank. At the second stage the degree of activity of geodynamic structures, as well as their relationship with the development of hazardous exogenous processes along oil pipeline is studied by carring aerovisual survey out. All sites of intersection of geodynamic structures are photographed, not only at the intersection of their current activity. The most well-lockable tectonic elements for this type of aerial observation flight altitude of 100 m were local lineaments, and active faults, geodynamic active zones are harder to record. And finally, about the location of the majority of ancient before tectonic fractures we have to accounted for only guess, referring to the geological data.

Then the obtained aerial photographs from a helicopter attached to the detailed digital map of the pipeline with selected ranges of exogenous processes. The result was revealed a pattern of geodynamic structures, as well as their contribution to the development of exogenous processes. The most unfavorable from this point of view were lineaments and active geodynamic zones. Active faults have been detected a very small amount as during previous ground field work. The visible impact of exogenous processes development in this particular case was not recognized for the oil pipeline itself.