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A comparison between the results of free span rectification and pipeline side scan sonar surveying to improve the post-lay surveying of a laid pipe Case study: Two Pipelines on South Pars Gas field Phases 9 10, Persian Gulf

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The foremost actions following a pre-engineering survey of the purposed route corridor are firstly to undertake fixing the exact position of the pipe route and also to analyze the bottom roughness of the mentioned trace. The main purpose of a bottom roughness analysis is to discover the shape of the seabed topography along the route and in doing so study the free spans which may be necessary after the pipe-laying stage. The bottom roughness analysis report and allowable free span length are the only references for pipe-laying that determine pipeline loading and spool piece installation. The only way to confirm the bottom roughness analysis report is by post-lay surveying after the pipe-laying is completed. Altogether there is a close integrated relationship between bottom roughness analysis, post-lay survey and free-span rectification. Any marine surveyors study of these three components will realize that a spectrum of variables dictate their interplay and the changing specifications of a resultant free-span correction. The purpose of this article is to present results of a study of the accuracy of post-lay surveying and bottom roughness analysis and in doing so, find technical ways to improve both. In the introductory section, a concise analysis of the concept of bottom roughness will be given; followed by the post-lay survey methodology utilized in this case. In summary, an overview of both results will be

included. This study also includes a specific case study analysis of a free-span rectification operation undertaken on Sth Pars Gas Field, accompanied by results at critical points such as the sloped areas and underwater hills that present a challenge for free-span rectification. The comparison between both the survey methods and free-span rectification results will be presented in my concluding summary along with relevant improvements. All results are directly derived from the actual data in pipelines laid on the South Pars Gas Field Project, Persian Gulf / phases 9 10. The author of this article served as Party Chief of post-lay surveying on board of DP1 survey vessel ‘Persian Pioneer’ and free span rectification survey support on board of DP2 DSV ‘Koosha-1’.