

**EFFECTS OF FAT, OIL AND GREASE (FOG) DISCHARGE POLLUTANTS
ON WATER QUALITY OF QALYASAN STREAM, TANJERO
RIVER AND IMPACT OF FAT, OIL AND GREASE
ON DARBANDIKHAN RESERVOIR IN
SULAIMANI CITY-KURDISTAN REGION OF IRAQ-IRAQ**

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ABSTRACT

Darbandikhan reservoir, Tanjero River and Qalyasan Stream are one of the largest water sources in Sulaimani Governorate intensively used for human uses and irrigation. Today, with increasing the population in Sulaimani Governorate, the water for human consumptive is increased which causes an increase in sewage effluents. This may consequently the high effluence level of fat, oil and grease (FOG) into the Qalyasan stream and Tanjero River without any treatment causing health and environmental impact. The present study aimed to shows the effect of (FOG) pollution on quality of the surface water and to estimate the suitability of water for human uses and irrigation purposes. To monitor the surface water of Darbandikhan reservoir, Tanjero River and Qalyasan Stream, water samples are collected from 9 sites at maximum flow in Qalyasan Stream (S1) during March 2015 (raining season-Winter) till the water flow are closed to zero on July 2015 (dry season-Summer). The results indicate that the quality of water sample at site (S1) is suitable for human uses after conventional treatment and irrigation that are within the permissible limits of (FOG). So, the lowest values of WQIs was obtained at site (S1), while the water at sites S2, S3, S4, S5, S6, S7, and S8 are unsuitable for human uses and less suitable for irrigation, except the water at site S5 was found unsuitable (unfit) for irrigation due to the discharge of high amount of untreated wastewater with high level (FOG), Finally WOI for site (S9) in Darbandikhan reservoir was unfit and good class for human uses and irrigation respectively, this may be due to increase (FOG) in June and July cause degraded water quality of Darbandikhan reservoir.

KEYWORDS: *Fat, Oil and Grease (FOG), Water Quality Index (WQI), Qalyasan Stream, Tanjero River, Darbandikhan Reservoir, Untreated Wastewater*

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