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Please fill in your 5-digit IPTC manuscript number.	IPTC-22711-Abstract
Please fill in your manuscript title.	S1 F/STN Facility Debottlenecking Project to Handle Higher Gross Production (140,000 and 180,000 BPD)

Please fill in your author name(s) and company affiliation.

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Chakrit	Manyasi	PTTEP

Abstract

Objective/Scope:

This paper discusses the debottleneck rectification in order to handle the High Gross Production from the wellsite which increases the production profile up to 180,000 Barrel per Day (BPD) to maintain PTTEP S1 (S1) oil production at 30,000 BPD; the execution is based on allocated Gross to Flow Station method by expanding the total High Gross Capacity up to 90,000 BPD with 70% water cut off.

Methods, Procedures, Process:

Briefly, the PTTEP S1 will be debottlenecked to enhance the high gross capacity up to 90,000 Barrel per Day (BPD); Hence, the equipment including LLP 3-phase Separator, Heat Exchanger, Crude Transfer Pumps and Water Transfer Pumps were designed and installed in PTTEP S1 Flow station. The Crude Manifold will receive the Crude from several sources e.g. Separate Booster Pump, Local Dehydration and the outstation backload. The Crude will be transferred to the Heat Exchanger and heated up to 50-60 Celsius Degrees before continuing to LLP 3-Phase Separator. The 33,000 BPD capacity separator includes 10% margin design with the internals parts of Evenflow HE, Distribution Baffle, Vane Pack Demister, Plat Pack Demister, Platepack Collescer, Vessel Desander, Weir Plate, and Vortex Breaker. The emulsion (oil – water mixture) will be transferred to the crude tanks. (T-401 to 406) via the 2x100% crude transfer pumps (P-2350/51) where the water is reseparated. The selected pumps is the positive displacement type (Screw Pump) which are high performance, robust and endure for the crude service. At the LLP 3 – Phase Separator outlet, the separated produced water will be transferred to the open underground sump pit by the 3x33.3% water transfer pumps (P-2355/56/57) for further treatment and then transferred to the well for water flood. Once oil in water (OIW) content is exceeded, it is recommended to route the separated produced water to the tank farm directly. The generated condensate from additional heat exchanger will routed to the condensed water recovery tank (T-2352) by the sufficient gravity flow. The performance guarantee of LLP 3-Phase Separator depends on 3 main criteria: 1) Liquid entrainment in gas shall not exceed 0.1 USG/MMSCF. 2) Water entrainment in oil shall not exceed 2% v/v 3) Oil Entrainment in Water shall not exceed 2000ppm.

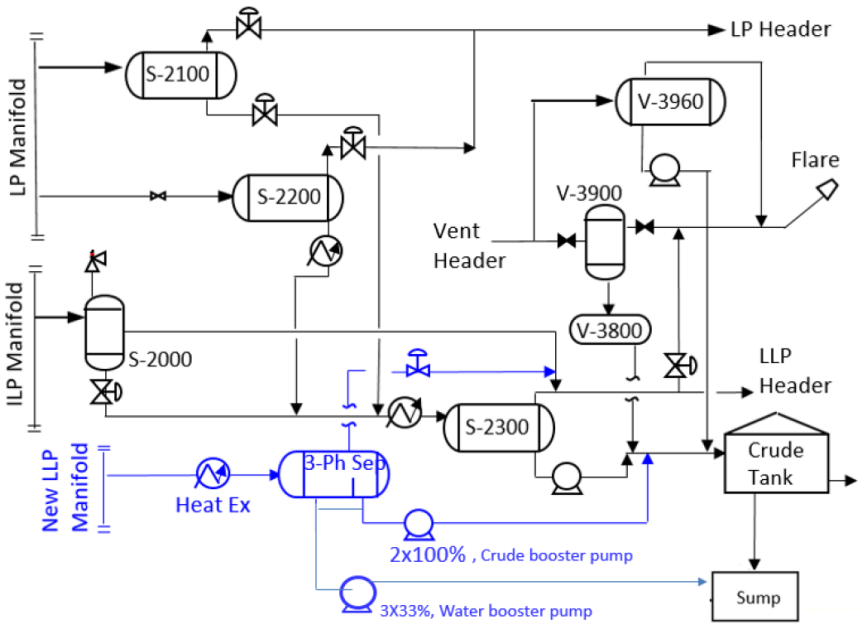

Figure -1 Simplified Diagram of Debottlenecking

- **Results, Observations, Conclusions**:

  The main equipment is constructed and installed; there are total 63 completed Tie-in points performing during the major plant Shutdown. the commissioning of the LLP 3 phase Separator was commenced in July 2022, the result of separation performance is shown in below table. The Crude Pumps and Water Transfer Pumps are completed started - up along with the Mechanical Running test (MRT) during May 2022 and meet the pump performance criteria.

	Oil Content in water mg/l(Everage)	Crude BS&W % (Everage)
Jul-22	334.33	65.81
Aug-22	307.30	67.30
Sep-22	186.40	61.13
Oct-22	183.50	65.09
Nov-22	188.87	62.67
Dec-22	178.68	58.32