WHAT IS CLAIMED

1. A process for removing water from a produced oil-and-water stream, the process comprising the steps of:

routing an oil-and-water stream to a first and a second separator vessel arranged in parallel so each receives a portion of the incoming oil-and-water stream;

routing an outlet stream of the first and second separator vessels to a flash vessel arranged downstream of the first and second separator vessels;

routing an outlet stream of the flash vessel to a degasser vessel arranged downstream of the flash vessel;

routing an outlet stream of the degasser vessel to a crude oil storage tank arranged downstream of the degasser vessel, the crude oil storage tank including at least one set of electrostatic internals arranged to provide a treatment flow path within the crude oil storage tank oblique to a longitudinal centerline of the crude oil storage tank and through an electric field provided by the set of electrostatic internals; and

routing an outlet stream of the crude oil storage tank to an electrostatic treater arranged downstream of the crude oil storage tank.

2. A process according to claim 1 wherein the treatment flow path is in an upwardly direction toward an oil outlet section of the crude oil storage tank and in a downwardly opposite direction toward a water outlet section of the crude oil storage tank.

3. A process according to claim 1 wherein the set of electrostatic internals include a first leg and a second leg, the legs connected one to the other and being cylindrical in shape and elongated.

4. A process according to claim 3 wherein the first and second legs include an open bottom end located in a water outlet section of the crude oil storage tank.

5. A process according to claim 4 wherein the first leg includes a closed top end.

6. A process according to claim 4 wherein the second leg includes an open top end.

7. A process according to claim 3 wherein the first and second legs are arranged parallel to one another.

8. A process according to claim 3 wherein the second leg is located downstream of the first leg.

9. A process according to claim 1 wherein at least one of the first and second separator vessels, the flash vessel, and the degasser vessel is a vertical vessel.

10. A process according to claim 1 wherein no pre-treater is used upstream of the crude oil storage tank.