



North Anna ESP Hearing: Site Topic 2 - Hydrology

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- Regulatory requirements related to ground water movement in 10 CFR:
 - Contents of application [Section 52.17 (a) (v) and (vi)]
 - Hydrologic siting factors [Section 100.20 (c)]

- Hydrogeologic Setting:
 - Soil: soft rock, saprolite (disintegrated rock), SSAR Page 2.2-140
 - Vadose zone: unsaturated zone between land surface and saturated zone – discussed in SSAR Page 2.2-142
 - Aquifers: Unconfined aquifers in both saprolite and underlying bedrock

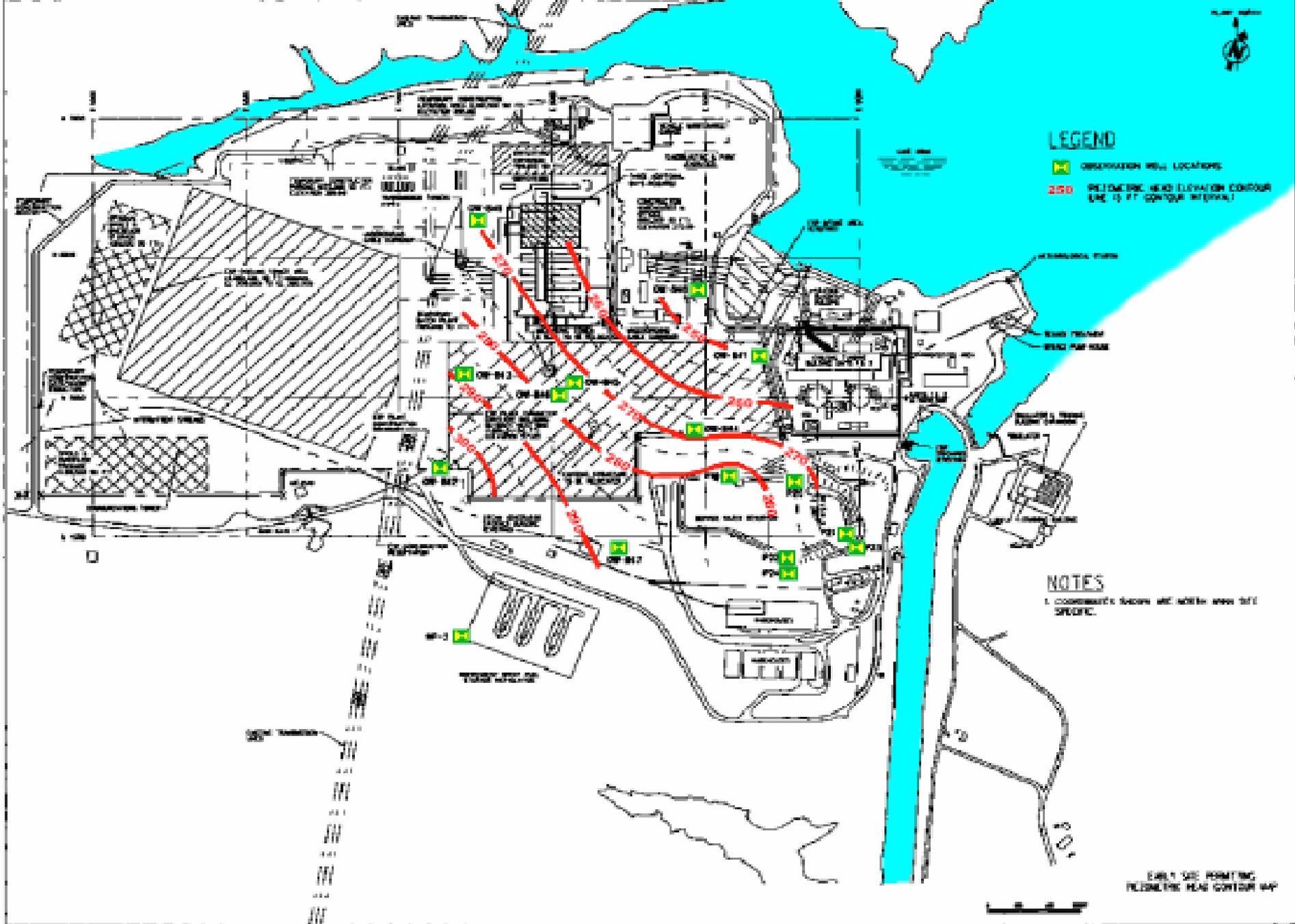


Figure 2.4-16 Piezometric Head Contour Map (from SSAR Rev 9 pg 2-2-186)

Site Hydrology:

- General gradient towards lake 0.03 ft/ft, hydraulic conductivity 3.4 ft/day.
 - Figure 2.4-16 from SSAR Rev 9 pg 2-2-186
- Radiological Contaminants: None at ESP site.
- Chemical Contaminants: None known
- Measurement and monitoring: Eliminated by Permit Condition 4:
 - requires radwaste facility design features to preclude accidental liquid radioactive releases

- Reliable engineered features can eliminate liquid effluent release
- Impracticality of characterizing ground water pathway:
 - Unknown effects of construction activities
 - Configuration and effects of engineered backfill