Reporter 2. The phrase "K_V is linearly equivalent to $q^*K_{\Sigma_l} - (p-1)\phi$" is misleading.

Namely, if one is talking about the classes of divisors, then what does q^* of such a class mean, when applied to the *non-flat* normalization morphism $q : V \to \Sigma_l$? I presume the reporter is actually talking about q^* of the corresponding *sheaves*. But then I don't understand the meaning of $q^*(-K_{\Sigma_l})$ and the formulae that follow.

Second, what is the relation between (the sheaves) ω_l and K_{Σ_l}, which allows one to conclude that "K_V is linearly equivalent to $q^*K_{\Sigma_l} - (p-1)\phi$"? Is there some sort of a relative Euler exact sequence for the ruled (non-normal) surface $\Sigma_l \to l$? In any case I don't understand how the reporter has arrived to this conclusion.

In my paper I am working directly with *double duals* of (co)tangent *sheaves* and their powers. I explicitly compute the pull-backs etc. Let me stress that any similar naive approach in terms of divisors is simply impossible and leads to erroneous conclusions (for it is run on a non-normal surface, in characteristic p, so I don't see how any "geometric reasoning" (from characteristic zero) can possibly work here).