



## Petroleum Restoration Program Guidance

### Double Cased and Horizontal Well Buildup

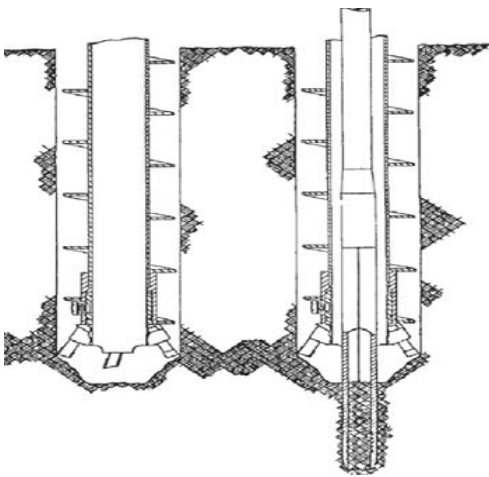
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### Split spoons in double-cased wells or large diameter (4-inch and larger) recovery/treatment wells.

Due to the large inner diameter of the hollow-stem augers used to install surface casing or large-diameter wells, we cannot collect split spoons because sediments will be able to come up inside the stem and slow drilling. A smaller diameter hollow stem auger is needed to advance the borehole for collecting split spoons, followed by the large diameter auger to make the borehole large enough for the surface casing.

- ✚ Scope the appropriate pay item (5-6, 5-7 or 5-8) for HSA or MR Boring, < 6-inch diameter, for the total depth of the area where split spoons will be collected. This footage also counts for the mud rotary footage when installing the monitoring well inside the surface casing. This footage is not allowed twice for the split and inner boring.
- ✚ SPI should have the appropriate pay item (5-12, 5-13 or 5-14) for HSA or MR Boring, > 10 to 14-inch diameter, for the total depth of the surface casing/large diameter well.
- ✚ The auger is advanced, usually with a plastic sampling cap over the open end of the hollow-stem or the sample push-rods inside the hollow stem to prevent soils filling the auger, then the split-spoon sampler is pushed down into the undisturbed sediment.
- ✚ Lithology/OVA data needs for large diameter recovery wells should be reviewed with the PG/PE to ensure the additional work is needed. Rarely during the remediation phase is additional data needed.



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## Horizontal SVE well installation

- ✚ Horizontal SVE wells (by trenching) should be scoped with the following pay items:
  - Well Installation, 6-2b or 6-3b (two-inch, four-inch) where the footage represents the length of the horizontal portion of the well in the trench. This covers all labor, equipment, and materials, including trenching, well materials, filter pack, sand and/or gravel (if required) and the riser and manhole (we do not pay additional footage for the riser from the horizontal well to the surface). The exception is mobilization, concrete/asphalt removal, disposal and resurfacing for which there are separate pay items. Note: Section 15 trenching and installation is not authorized for horizontal SVE wells, as this is paying twice for trenching and well installation.
  
- ✚ Horizontal wells installed by directional drilling are scoped using a section 22 reimbursable pay item.