



**Casing Extension and Wellhead Replacement Project
For Re-abandonment of Oil Well
Neuquén Argentina**

**Client: REPSOL YPF
Well: Barrosa Oeste #41**

Following is a set of photos and descriptions pertaining to onsite work completed by Hot-Hed S.A. in Neuquén Argentina for REPSOL.

REPSOL requested that Hot-Hed recondition an oil well that was abandoned many years ago using the method that was widely available and accepted at that time. Abandonment of the oil well was originally completed by pumping cement over the cellar until the top of the casing was covered.

Hot-Hed has now gone back in to repair the problematic wells by cementing them in the currently accepted manner of well abandonment - from the inside out. In order to fulfill current standards of oil well abandonment, old cement was removed and new casing was added to the older casing to extend its length sufficiently for the cementing equipment and tools that were used. REPSOL also requested that Hot-Hed clean the existing oil well, extend the casing, install a wellhead and tighten (nipple-up) the union between the 9 5/8" wellhead and the 9 5/8" to 7" reducer. All of the tasks were done with a 'cherry picker' style crane and ultra-portable equipment (i.e. Diesel Welding Machines and Air Compressors, etc.) that make these types of projects possible without the use of a derrick.

Hot-Hed S.A. will be called out when the project is completed to nipple-down the sections that were installed and to recuperate the wellhead for future use.

**CELLAR DUG
ORIGINAL ABANDONMENT CONDITION**



AT THIS POINT THE WELL WAS HANDED OVER TO HOT-HED. CREWS BROKE OUT THE REMAINING CEMENT WITH A [PNEUMATIC CHISEL \(JACK-HAMMER\)](#), REMOVED THE PIECES AND CLEANED THE CASING FOR REWORKING.

CAPPING 13 3/8" CASING AND SEALING TO 9 5/8"



A RING SHAPED PIECE OF FLAT IRON IS USED TO SEAL THE GAP BETWEEN THE TWO OUTER CASINGS. IN THIS PROJECT THEY ARE THE 13 3/8" AND THE 9 5/8".

MEASURING TWICE...



HOT-HED CREW MARKING THE 9 5/8" CASING FOR THE FINAL CUT

SEPARATING THE 7" CASING FROM THE 9 5/8" CASING



[HOT-BEVL'R](#) BEVELING BAND IN PLACE WHERE CUT WILL BE MADE

EXTENSION IN PLACE



7" CASING EXTENSION IS READY TO BE [WELDED](#) TOGETHER
9 5/8" CASING [BEVELED](#) AND READY FOR EXTENSION

LEVELING THE 7" CASING



ASSURING THAT THE 7" CASING IS ABSOLUTELY LEVEL IS ESSENTIAL TO THE SUCCESS OF THE EXTENSION JOB AS A REDUCER WILL UNITE THE 9 5/8" SECTION AND THE 7" SECTION

WELDING THE 7" CASING



JOINING THE 'OLD' (EXISTING) 7" CASING AND THE NEW EXTENSION PIECE THAT WAS CUT TO SIZE IN THE FIELD

EXTENDING THE 9 5/8" CASING



THE 9 5/8" CASING IS EXTENDED AND [WELDED](#) IN PLACE ACCORDING TO THE DESIRED HEIGHT PLANNED FOR THE [WELLHEAD](#)

LOWERING THE WELLHEAD FOR INSTALLATION



9 5/8" [WELLHEAD](#) IS LOWERED ONTO THE 9 5/8" CASING IN PREPARATION FOR [WELDING](#)

LEVELING OF THE WELLHEAD



ONCE [WELLHEAD](#) IS IN PLACE, IT IS ESSENTIAL TO MAKE SURE THAT IT IS PERFECTLY LEVEL SO THAT THE EXTENSION INSIDE WILL BE ABSOLUTELY CENTERED

WELLHEAD WELDING



THE 9 5/8" [WELLHEAD](#) LEVELED, THOROUGHLY [TACK-WELDED](#) IN PLACE;
WELLHEAD IS THEN WELDED SECURELY TO THE 9 5/8" CASING

INSTALLATION OF PACKER



PACKER IS PLACED IN THE ANULUS OF THE 9 5/8" [WELLHEAD](#)

INSTALLATION OF REDUCER



WITH PACKER AND STEEL RING IN PLACE,
THE 9 5/8" TO 7" REDUCING HEAD IS LOWERED INTO PLACE

NIPPLE UP



FINAL STEP IN PROCESS: BOLTS ARE INSTALLED AND WELLHEAD NUTS ARE TIGHTENED WITH HYDRAULIC TORQUE EQUIPMENT