



HCL's downhole Cable protection system has been successfully installed in Colombia on ESP Wells since 2014.

Clients cited various reasons for Trialling HCL product

1. Metal Bands - Problems caused by Failure & damage to Cables along with complications in fishing Stainless Steel Product (Apiay - EcoPetrol)
2. Cost - Cost of alternative metallic cross coupling protectors was higher than the HCL solution -(Caño Limon)
3. Corrosion - In the mature fields with water injection corrosion is a major problem (La Cira-Infantas)
4. Successful previous installation - Clients successful installation in Caño Limon influenced the decision to install on La Cira-Infantas

	Apiay	Caño Limon	La Cira-Infantas
Client:	Ecopetrol	Confidential	Confidential
Installation Date:	October 2014	August 2015	August 2017
Number of Installations:	1	15	20
Casing:	7"	7" & 9 5/8"	7" & 5 1/2 "
Tubing Dia:	3 1/2"	3 1/2" & 4 1/2"	3 1/2" & 2 7/8"
Depth:	7500ft	7000ft	4000ft
Deviation of Well:	<25	<25	<45
Cable:	#2 Flat + 1/4 " Capillary	#2 Flat + 1/4 " Capillary / #2 Round	#4 Flat #6 Flat + 1/4 " Capillary
Pump:	Borets	Baker Hughes	Baker Hughes, Schlumberger, Borets, Alkhorayef
Quantity	835	500 per well	500 per well
Notes:	Pumps continue to run successfully 39 months after installation	Pumps continue to run successfully 30 months after installation.	2 wells have been pulled due to sand binding damage to pumps. <u>All protectors were recovered and reused</u>

SM-FT-3000-32ST



ST-32-550



SP-400-3820



SP-500-3338



Designed and manufactured by HCL at their UK Facility the 3000 Air Tool is widely regarded as the most consistent pneumatic strap installers available in the Market. Combining ease of use with high retention and short installation times makes the 3000 Tool the perfect method of installation on the Oil-Rig. Furthermore HCL's Offcut hold feature allows the operator to dispense the offcut into a bin away from the Well avoiding and debris falling into the opening.

