

AVIEMORE WELL FIELD

CLIENT NAME:

SCOTTISH WATER SOLUTIONS

DESCRIPTION OF THE WORKS:

THE CLIENT NEEDED A NEW WELL FIELD AT KINAKYLE NEAR AVIEMORE WHICH WOULD SUPPLY MAINS WATER TO THE GROWING POPULATION OF THE AVIEMORE REGION.

THE MAIN OBJECTIVES OF THE WORK WERE TO CONSTRUCT DEVELOP AND TEST PUMP 4NO HIGH YIELDING PRODUCTION BOREHOLES IN THE DEEP SAND AND GRAVEL STRATA. A MONITORING BOREHOLE WAS ALSO TO BE CONSTRUCTED TO ASSIST THE TEST PUMPING. THE WORKING STANDARDS WERE TO COMPLY WITH:

- CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY FIFTH EDITION 1998.
- WELL CONSTRUCTION SPECIFICATION FOR THE WATER INDUSTRY SECOND EDITION 1985. (SUPPLEMENT TO CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY.)
- BS 14686; 2003. TEST PUMPING OF WATER WELLS.

THE WORKS WERE SCHEDULED TO COMMENCE IN JANUARY DIRECTLY FOLLOWING THE CHRISTMAS BREAK AND THE DRILLING PHASE WAS SCHEDULED TO TAKE 45 DAYS WITH STRINGENT PENALTIES FOR ANY DELAY.



DRILCORP

HOW THE WORK WAS CARRIED OUT

DRILCORP'S CONRAD COMAX 800 DRILLING RIG WAS SELECTED TO CARRY OUT THE WORKS WITH REVERSE CIRCULATION DRILLING TECHNIQUES. THE BOREHOLES WERE ALL TO BE DRILLED TO DEPTHS EXPECTED TO BE APPROXIMATELY 40MTR BELOW GROUND LEVEL THROUGH THE SAND AND GRAVEL SEQUENCE. CARE HAD TO BE TAKEN THAT THE OPERATIONS DID NOT INFLUENCE THE ADJACENT RIVER SPEY.

THE BOREHOLES WERE TO BE CONSTRUCTED WITH A 450MM (18") STAINLESS STEEL CONDUCTOR CASING PLACED OVER THE TOP 3MTR TO STABILISE THE STRATA AND TO ENABLE THE SUBSEQUENT CONSTRUCTION OF THE WELLHEAD CHAMBERS. THE REMAINDER OF THE BOREHOLES WERE TO BE DRILLED AT 445MM (17 1/2") DIAMETER TO ALLOW THE INSTALLATION OF CENTRALISED 300MM (12") STAINLESS STEEL WIRE WOUND SCREEN AND CASING LEAVING ROOM FOR THE ANNULUS TO BE FILLED WITH HIGH QUALITY GRADED FILTER SAND.

THE MONITORING BOREHOLE (ALSO HIGH SPECIFICATION STAINLESS STEEL CONSTRUCTION) WAS TO BE FINISHED AT 150MM (6") DIAMETER. ON COMPLETION, THE WELLS WERE DEVELOPED USING AIR LIFT METHODS.

ALTHOUGH THIS WAS THE WORST WINTER ON RECORD WITH TEMPERATURES REGULARLY BELOW -20o C AND SNOW ON THE GROUND THROUGHOUT CONTRACT, THE WORKS WERE COMPLETED EXACTLY ON PROGRAMME.

A COMPLICATED SCHEDULE OF TEST PUMPING WAS SUBSEQUENTLY CARRIED OUT WITH VARIOUS BOREHOLES BEING PUMPED AT THE SAME TIME WHILE MONITORING THE EFFECT ON OTHERS. THE RESULTS WERE BETTER THAN EVER ANTICIPATED WITH FANTASTIC YIELDS AND THE CLIENT WAS ABLE TO USE THE BOREHOLES TO SUPPLY ADDITIONAL REGIONS WITH MAINS WATER — AN UNEXPECTED BONUS.

