



### Well Hire Options

HIRE Deep borehole per 24 hour day  
HIRE Logging winch and driver 8 hour day  
HIRE ogging engineer 8 hour day

Longer term discount rates

- 10% for > 7 days continuous use
- 15% for > 14 days continuous use
- 20% for > 28 days continuous use
- 25% for > 56 days continuous use
- 30% for > 84 days continuous use

ASL employs a range of experienced field support staff to help facilitate all client training and testing needs.



### Support Services

Mechanical technician labour  
Electronic technician labour  
Instrument cabin Hire  
Mobilisation and demobilisation

All rates for support services are per 8 hour day



### Consultancy

Logging Engineer  
Geoscientist  
Electronics Engineer

All rates for consultancy services are per hour

## ATC - Avalon Training Courses

ASL understands the diverse set of skills required for providing an effective borehole seismic service. We can tailor our training courses appropriately to meet the needs of the seismic field engineer, technical/ electrical maintenance engineer. In addition, we provide a more general industry overview and well-deployment experience to business development/ administrative staff and engineering/geoscience undergraduates.

| ATC                                      | DAY 1                                                                 |                                                                             | DAY 2                                                     |                                                | DAY 3                                             |                                                                     | DAY 4                                               |                                                                      | DAY 5                                                    |                                            |
|------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------|
| COURSE                                   | AM                                                                    | PM                                                                          | AM2                                                       | PM2                                            | AM3                                               | PM3                                                                 | AM4                                                 | PM4                                                                  | AM5                                                      | PM5                                        |
| ATC-1 Mechanical Maintenance Course      | HC Intro to Geochain & Power Distribution                             | String Demo ASR/QSR Break Down & Assembly                                   | Tool Rewire & Routine Maintenance                         | Tool Major Maintenance including Arm Drive     | Tool Major Maintenance Con't and Motor Testing    | TAS & VRS Routine and Major Maintenance                             | ITC Routine Maintenance                             | ITC Reheating                                                        | ACQ for String Testing, Sensor Pack Inspection & Testing | Optional: Ancillary/TCU/ Gamma Maintenance |
| ATC-2 Field Engineer Course              | HC Intro to Geochain & Power Distribution                             | String Demo ASR/QSR Break Down & Assembly                                   | Tool, TAS and VRS Routine Maintenance                     | ITC Routine Maintenance ACQ for String Testing | Intro to BHS and ACQ for acquisition              | ACQ Cont. Travel down to Well site                                  | Well Site Operations ZVSP                           | Well Site Operations Return to HQ, RSS-2 Source Controller           | VSP/Proxess for field Engineers                          | VSP/Proxess for Field Engineers            |
| ATC-3 BHS Short Course for support staff | HC Intro to BHS and overview of main hardware                         | Introduction to BHS Acquisition using ACQ - Simulate VSP                    | Well Operations (Somerton) Shallow VSP Airgun             | Foundation overview of VSP Processing          |                                                   |                                                                     |                                                     |                                                                      |                                                          |                                            |
| ATC-4 BHS Short Course Extended          | HC Intro to BHS and overview of main hardware                         | Introduction to BHS Acquisition using ACQ - Simulate VSP                    | Travel to Quarry Well Site - Vibroseis                    | Quarry Well Operations                         | Return VSP/Proxess Mod 8.1 Data Input/Export      | Vsprowess Mod 8.2 Data Displays/Clean-up & Mod 8.3 Error Correction | Vsprowess Mod 8.4 Filtering & 8.5 Simple Processing | Vsprowess Mod 8.6 Preparation of data for 3C processing              |                                                          |                                            |
| ATC-5 Electronic Maintenance Course      | HC Intro to Geochain & Power Distribution                             | String Assembly, ACQ for String Testing                                     | Digitiser Inspection, Functional Testing and flak removal | Digitiser Maintenance & Repair                 | Firmware Upgrades, Reflashing and HSI Calibration | TAS External Inspection and Basic Functional Testing                | TAS Internal Inspection, Maintenance & Repair       | VRS Diagnosis & Repair, Surface Panel Inspection & card replacement. |                                                          |                                            |
| ATC-7 Undergraduate Seismic Short course | HC Intro to BHS and overview of main hardware and simulate VSP in ACQ | Well Operations (Somerton) Shallow VSP Airgun. Brief overview of processing |                                                           |                                                |                                                   |                                                                     |                                                     |                                                                      |                                                          |                                            |



## Avalon's Deep Well Test and Training Facility





# The Rosemanowes Quarry

Rosemanowes Quarry, Herniss, Longdowns,  
Penryn, Cornwall. UK - TR10 9DU



## ATC - Avalon Training Courses



The site also provides an ideal training facility for trainees to learn how to maintain, assemble and deploy ASL tool systems on site. A comprehensive training itinerary has been developed such that a complete field engineer and maintenance course can be carried out over a period of days. There is also an opportunity for trainees to carry out onsite VSP surveys to gain real time experience with ACQ acquisition software, with an option to carry out processing training of the collected data set with VSProwess.

Please refer to our ATC training brochure for more details about these courses.

- **x 3 Deep Test Wells (Up to 2.5km MD)**
- **Multiple shallow wells (open and cased)**
- **Logging winches & impulsive/vibroseis sources available.**
- **On-site training provided by dedicated instructors in the use of ASL hardware.**
- **'Real Job' environment for Field Engineer and Maintenance Courses.**



## History of the Quarry

The quarry was a UK Hot Dry Rock Geothermal Energy Research site, offering access to one of the most comprehensively logged well systems in the world. The boreholes are located within a fresh water filled granite environment. The quarry was the first deep geothermal project within the UK starting in 1977.

The aims of the project were:

- 1) To see if hot dry rock could be fractured by water pressure alone
- 2) To find out if the rock was hot enough to make steam for turbine generation.

The project concluded in 1991, but studies continued until 1997. In 2006 the quarry was used as a deep borehole test facility, making the quarry the best logged site in the world. The Quarry was purchased by ASL in 2013.

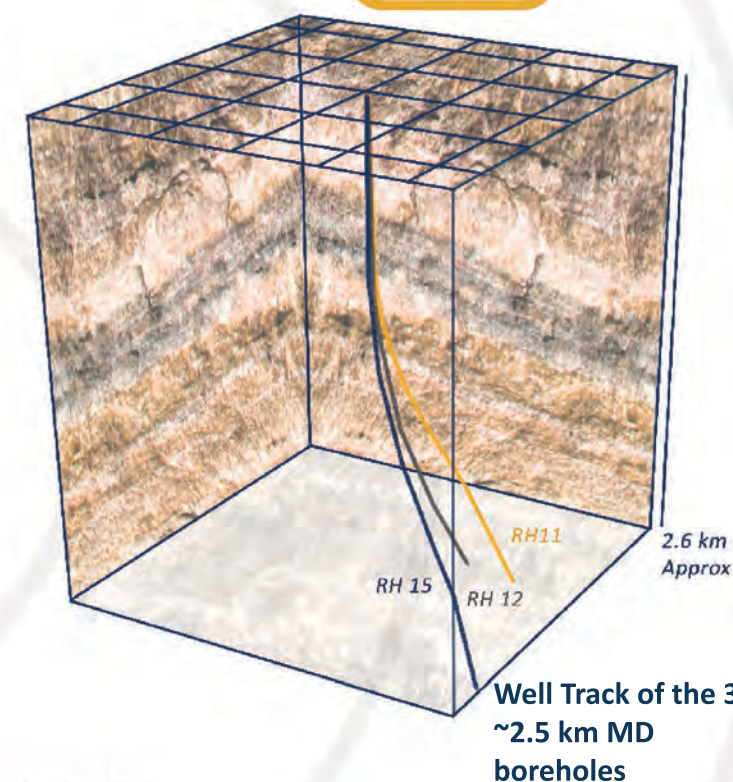
## Borehole Test Facility

The quarry consists of:

- Three deep boreholes with a 9 5/8" casing

| Casing | Measured Depth |
|--------|----------------|
| RH11   | 2356m          |
| RH12   | 2180m          |
| RH15   | 2566m          |

- A 300 m open hole section inclined at 30°.
- Four 300m deep boreholes with 6" casing at 20m.
- One 150m, 8 1/2" uncased borehole inclined at 30°.
- Logging winches and slave with a standard 7 conductor wireline.
- Impulsive and Vibroseis Sweep sources available on site.



## Schematic Map of the Quarry Site



Wells located within the Carnarvonian Granite Formation

