

Geophysicist Grade II

S30 and S33

The following should be read and used in conjunction with the information pack 'Competence Assurance & Assessment: Introduction for Experienced Freelance Personnel'.

Evidence Required

- Competence appraisal:** ♦ at Geophysicist Grade II level
- Work records:**
- ♦ one proof of attendance at an offshore safety induction
 - ♦ one proof of correctly compiled data QC logs
 - ♦ one proof of ability to carry out field logging of seabed samples including shear strength tests.
- Witness testimonies:**
- ♦ one example of the candidate following safety instructions
 - ♦ one example of the candidate using the appropriate safety equipment
 - ♦ one example of the candidate following correct analogue data QC procedures
 - ♦ one example of the candidate operating the digital data QC system (*applies to digital seismic projects only and can be disregarded for all other project types*)
 - ♦ one example of the candidate carrying out preliminary interpretation and reporting for analogue data
- Essential knowledge:** ♦ written answers to Geophysicist Grade II questions
- Curriculum vitae:** ♦ detailing offshore trips, work scope, clients, regions, etc.

IMCA Framework Requirements

The competence assurance and assessment framework developed by IMCA (the International Marine Contractors Association) sets out a number of elements for each safety-critical position. The following table shows how competence can be demonstrated against each element.

| Code | Demonstration | Covered by |
|---|---|---|
| S/S30/000/01 Safety | Participation in offshore safety induction Ability to follow safety instructions and use appropriate safety equipment for deck and outside operations Ability to follow muster calls, shipboard drills and exercises Demonstrates an understanding of company health, safety, environmental and quality procedures | R, CA(a) CA(a), WT, Q6 CA(a), WT, Q5 CA(a), WT |
| S/S30/000/02 Emergency Procedures | Thorough understanding of company emergency procedure documents and where to find them Ability to recognise a potential or actual emergency situation and report it accordingly Ability to describe own role in emergency situations and that of colleagues | CA(a), Q4 CA(a), Q1, 3 CA(a), WT, Q5 |
| S/S30/000/03 Behavioural Factors | Establishment and maintenance of good working relationships with both junior and senior colleagues Ability to use clear, concise and correct verbal and written communication with colleagues and others Ability to recognise personal limitations and effectively seek advice | CA(b) R, CA(b) CA(b) |
| S/S33/000/06 Software | Ability to operate basic offline quality control/processing software Demonstrate an understanding of how geophysical data processing and interpretation packages operate | CA(d), WT CA(d), CA(e), WT, Q9,10 |

| | | |
|---|--|---|
| <p>S/S33/000/07 Data Acquisition</p> | <p>Demonstrate an understanding of quality control objectives</p> <p>Ability to monitor data quality and to identify anomalous cases to senior personnel</p> <p>Ability to operate digital seismic data QC software and carry out appropriate QC checks (<i>applies to digital seismic projects only and can be disregarded for all other project types</i>)</p> <p>Ability to suggest alterations to settings to optimise geophysical data quality</p> <p>Ability to monitor all system inputs and diagnose any data outage problems</p> <p>Demonstrate capability of producing acquisition parameters and offset diagram</p> <p>Ability to check lead in and run out distances and calculate layback from CRP to first CDP</p> | <p>CA(d), R, WT CA(f), WT, Q7, 8, 10 CA(e), WT, Q9 CA(d), Q10 CA(f), Q10, 11 CA(g), Q10 CA(g), WT</p> |
| <p>S/S33/000/08 Data Management</p> | <p>Ability to carefully log, label and store data</p> <p>Ensure all necessary information is included in the Geophysicists QC file</p> | <p>CA(i), R, Q12 CA(i)</p> |
| <p>S/S33/000/09 Data presentation</p> | <p>Ability to assemble data for basic survey report</p> | <p>WT, CA(c), Q13</p> |
| <p>S/S33/000/10 Graphic presentation and mapping</p> | <p>Demonstrate basic mapping skills including simple contouring and graphical presentations</p> | <p>CA(g)</p> |
| <p>S/S33/000/11 Survey basics</p> | <p>Demonstrate knowledge of basic survey principles, planning and design</p> | <p>CA(g)</p> |

Q Question (written answer required)

CA Competence Appraisal Form

R Record of work; document or product

WT Witness Testimony

Sample Achievement Record

Candidate name:

First assessor name:

| | Assessment Decision | Approval of Internal Verifier/ Competence Focal Point |
|-------------------------------------|---------------------|--|
| Safety | | |
| Emergency Procedures | | |
| Behavioural Factors | | |
| Software | | |
| Data Acquisition | | |
| Data Management | | |
| Data Presentation | | |
| Graphic presentation and mapping | | |
| Survey basics | | |

Comments:

First assessor signature: Date:

Verifier signature: Date:

Sample Competence Appraisal

The appraiser must have observed the appraisee completing the task before completing the relevant section. Where necessary a number of different appraisers may be used to complete the form fully.

Appraisee name:

| Task | Feedback to Appraisee | Appraiser <i>(Print name, sign and date)</i> |
|---|-----------------------|---|
| <p>a) Demonstrate general safety/emergency awareness, familiarisation with worksite and ability to identify hazards.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p> | | |
| <p>b) Maintain effective teamwork and communication.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p> | | |
| <p>c) Demonstrate basic IT skills including Office packages and data management.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p> | | |
| <p>d) Demonstrate understanding of factors affecting data quality and how to identify them using QC/processing software.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p> | | |
| <p>e) Operate and Maintain online digital seismic QC software.*</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p> | | |
| <p>f) Monitor geophysical data quality in accordance with standard / project specific procedures. Report any data loss/poor quality to supervisor.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p> | | |

| Task | Feedback to Appraisee | Appraiser <i>(Print name, sign and date)</i> |
|---|--|---|
| <p>g) Understand basic principles of acoustic and seismic surveying techniques and systems.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p> | | |
| <p>h) Demonstrate understanding of interpretive techniques for sonar and profiler data.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p> | | |
| <p>i) Maintain geophysical log and associated records in accordance standard / project specific procedures</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p> | | |
| <p>j) Demonstrate ability to carry out field logging of seabed samples inc. hand held shear strength tests</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p> | | |
| <p>Projects</p> <p>Indicate which projects you have participated in during the last 12 months. Specify project work-scope.</p> | | |
| <p>Projects</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p> | <p>N.B. Feedback should be based on projects detailed above</p> | |
| <p>Hardware/Software</p> <p>Indicate which hardware/software you have used during the last 12 months</p> | | |
| <p>Hardware/Software</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p> | <p>N.B. Feedback should be based on Hardware/Software detailed above</p> | |

* applies to digital seismic projects only and can be disregarded for all other project types

Appraisee comments:

Appraisee signature:

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Date:

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Essential Knowledge – Sample Questionnaire

- 1 What is the definition of 'near miss' incident?
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- 2 List the most important hazards encountered when working offshore.
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- 3 For your worksite describe in detail how any safety incidents are reported.
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- 4 Where can you find the company emergency procedure documents for your worksite?
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- 5 Upon hearing a vessel/installation muster alarm, describe the actions that should be taken by the survey team?
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- 6 What are the aims of a toolbox talk?
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- 7 Explain some factors that can affect sonar and sub bottom profiler data quality.
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- 8 Explain some factors that can affect 2D HR seismic data quality.
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- 9 List some QC tests you might perform to ensure digital seismic data is of requires quality. (*Applies to digital seismic projects only and can be disregarded for all other project types*)
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10 Explain the importance of monitoring offsets and equipment settings throughout acquisition.

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11 What checks might you undertake at the start of your shift?

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12 Explain the procedure you would follow to ensure that all data is correctly labelled and logged.

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13 Suggest what information should be displayed in the field acquisition report.

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14 Describe the geophysicist's role and responsibilities during a seabed soils sampling program.

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15 Explain the procedure you would follow when logging seabed samples.

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16 List some of the feature use we are trying to observe from sonar and profiler data that could affect the location of a drill rig.

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17 Suggest how you would assess presence of shallow gas from a brute stack at a well location.

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18 For the specified source/streamer depth calculate the theoretical predominant frequency of the 2D HR data.

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19 Explain how multiples arise and where you would expect to find them on data from different types of equipment. How do you differentiate a multiple from a primary reflection?

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20 List some of the artefacts you may expect to find on sonar and profiler data.

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