

## 2013년도 제2차 해외전문교육 개요

1. 교육명 : 「 Seismic and Sequence Stratigraphy for Play Prediction and Basin Analysis」
2. 교육수준 : 2012년에 실시한 교육과 동일함
  - \* 강사의 강의와 교육생간 해석에 대한 토론이 병행하여 진행되므로 지난 해 교육 수강자 및 경력자 참여 가능
3. 교육기관 : Stratigraphic Research International社 (영국)
4. 교육일시 : 2013. 5. 27(월) ~ 31(금), 9:00-18:00
5. 교육장소 : 해외자원개발진흥재단 석유가스교육연구센터(역삼동)



### 6. 교육목표

- 가. Understand the principles of Seismic and Sequence Stratigraphy and apply them to the interpretation of seismic data and wire-line logs
- 나. Use seismic data and well information to decipher basin evolution
- 다. Generate and risk plays using regional data and geological models
- 라. Present their ideas to other

## 7. 세부내용

The course covers the following:- seismic reflections and bedding, reflection terminations, seismic surfaces, seismic facies, chronostratigraphy and chronostratigraphic diagrams, sequence models, the importance of relative sea-level, identification of sequence boundaries, systems tracts, age-dating fault movement, isopachs and subsidence relationships, basin types, megasequences, sequence stacking geometries in differing basin types and characteristic plays, play prediction, "subtle trap" identification, play fairway mapping and play element risking.

### (Day 1)

#### 1) Introduction (Talk - 30mins.)

- Format, content, aims and objectives of course.

#### 2) Seismic reflections (Talk – 1hr.)

- Seismic 'approximating' gross bedding therefore timelines.
- Seismic surfaces,
- Reflection terminations and terminology.

#### Regional seismic line 24 (Exercise – 3 hrs.)

- Key surfaces define packages.
- Compare interpretations.
- Make geological interpretation.
- Predict lithologies.
- Plays & Risks.

#### 3) Chronostratigraphy (Talk - 30mins.)

- Surfaces facies changes, diachroneity/synchronicity.
- Marine/coastal onlap, coastal onlap and sea-level.
- Quantitative chronostratigraphy.
- Examples and howlers of chronostratigraphic diagrams.

#### Chronostrat. Chart construction (Exercise – 2hrs.)

- Six schematic cartoon exercises to demonstrate concepts and techniques.

## **(Day 2)**

Chronostrat. of Regional line 24 (Exercise - 2hrs.)

- Construct chart from previously interpreted regional seismic line.
- Age of faulting
- Plays/Risks.

4) Basin classification (Talk - 30mins.)

- Rift, foreland, strike-slip, passive margin etc.
- Subsidence/sediment supply characteristics.
- Megasequences and megasequence boundaries.
- Regional Seismic line 8 (Exercise - 1.5hrs.)
- Megasequence boundaries & basin types.
- Interpretation of plays/risks.

## **(Day 3)**

5) Sequence stratigraphy (Talk - 1hr.)

- The Exxon model.
- Relative Sea-level and shelfal accommodation.
- Sequence Boundaries & Flood surfaces.
- Systems Tracts.
- How to recognise sequence boundaries on seismic.

Seismic plate 38 & Regional line Q (Exercise - 2hrs.)

- Pick key surfaces.
- Use model to identify maximum floods and sequence boundaries.
- Colour up systems tracts.
- Discuss plays and risks.

Regional seismic line 69 (Exercise - 2hrs.)

- Pick key surfaces.
- Identify maximum floods and Sequence boundaries.
- Colour up systems tracts.

- Discuss plays and risks.
- 6) Sequence characteristics and basin type (Exercise - 1hr.)
  - Compare and contrast previous two lines and basins.
  - Play characteristics of foreland basins.
  - Play characteristics of uplifted rift margin.
- When did the fault move? (Exercise - 30mins.)
  - Deduce tectonic history from well logs
  - Which is the “right” answer? Messages, lessons learned.

**(Day 4)**

- 7) Sequence stratigraphy and well logs (Talk - 1hr.)
  - How to recognise sequences and systems tracts on well logs.
- Regional well correlation (Exercise - 2hr 30mins.)
  - Identify surfaces and systems tracts in Well B.
  - Repeat for wells A-D.
  - Correlate wells.
  - Which is proximal and which is distal?
  - How do the sequences stack? What are the plays?
  - Predict where stratigraphic traps might be?
- 8) Carbonate systems (Talk - 1hr.)
  - Barrier reefs, platforms, atolls etc.
  - Belize, Bahamas & Maldives.
  - Carbonate Sequence Stratigraphy
  - Sediment partitioning
- Where is the basin? (Talk & Exercise - 30mins.)
  - Section flattening.
  - Inferences from isopachs.

**(Day 5)**

9) Sequence stratigraphy quiz (Exercise - 1hr.)

Tectono-stratigraphic case histories

- Regional seismic lines from a variety of different basins worldwide (Exercises)

Class interpretations followed by discussions on possible plays and traps

10) Course summary (Talk - 30 mins.)

Attendees' feedback and conclusion (Open Forum - 30mins.)

**8. 강 사 : Dr. George T. Bertram**

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- IFP Training社, Associate professor
- Glasgow University, Scotland, PhD in Sedimentology
- Glasgow University, Scotland, B.Sc Hons in Geology

<참 고> 강사 이력서 1부. 끝.