

# Basis for EEX's entry into exploration in New Zealand

## TM Hamilton

*Chairman and President, EEX Corporation, 2500 CityWest Blvd., Suite 1400, Houston, TX77042, United States of America, Email tmhamilton@eex.com*

## Abstract

EEX Corporation is an independent oil and gas exploration and production company, listed on the New York Stock Exchange with a market capitalization of about US\$150 million. EEX has been active in exploration and production activities for over 90 years. Following the spin-off from a natural gas utility parent in 1997, EEX began a transition to an independent company with an upstream focus and has identified high growth potential through concentration in selected core areas.

The key to value creation in our business is in effectively leveraging the concepts generated by the exploration professionals into prospects of sufficient quality and scale to merit drilling. From a portfolio of such prospects arise a proportion of discoveries, which are then commercialized through development investment and converted into value through production. EEX's inherited portfolio included a large number of producing properties in onshore US basins, and promising exploration blocks located principally in deep water in the Gulf of Mexico. The portfolio was rationalized to concentrate resources on the most significant potential in the Gulf, primarily in deep water. This strategy has resulted in a substantial deep oil discovery, Llano, which is currently under appraisal and due for development in the near future.

EEX recognizes the attractiveness of carefully selected international exploration assets and has initiated a strategy to build a portfolio. The company owns a significant share of a large producing oil field in Indonesia which, together with a portfolio of producing, developing and low-risk exploration properties in the US, serves as the operating cash flow base for the company. While significant reinvestment is currently targeting the appraisal of Llano and the drilling of other high-potential deepwater prospects in the Gulf of Mexico, EEX has selectively entered new international ventures. The criteria for such investments are a modest entry cost and a capital program timed to coincide with the anticipated deepwater production and associated cash flow beginning in approximately 2 to 3 years.

New Zealand has been identified as a country where these requirements are met. Through relationship with GeoSphere Exploration, EEX has secured large exploration permits over geologically promising regions in the producing basin of Taranaki and its previously lightly explored cousin, the Waiiau Basin in Southland. The results to date of geological and geophysical work in these permits have been very encouraging, and further seismic data in the Waiiau Basin is required to better define potential prospects. EEX will continue to pursue our exploration efforts in New Zealand and hope to participate, along with other firms in our industry, in expanding New Zealand's upstream oil and gas sector.

## Introduction

In setting out to build a portfolio of international upstream assets complementary to our 50% stake in the large (10,000 BOPD) Mudi Field in Indonesia, the parameters EEX looks for include:

- viable petroleum system;
- potential for large size;

- political stability;
- fair terms; and
- low entry costs.

Although New Zealand is not especially fashionable as an exploration theatre, Taranaki Basin has yielded gas and oil fields in an interesting array of play types. There are some positive indications of prospectivity in several frontier basins, and the East Coast of the North Island yielded at least one

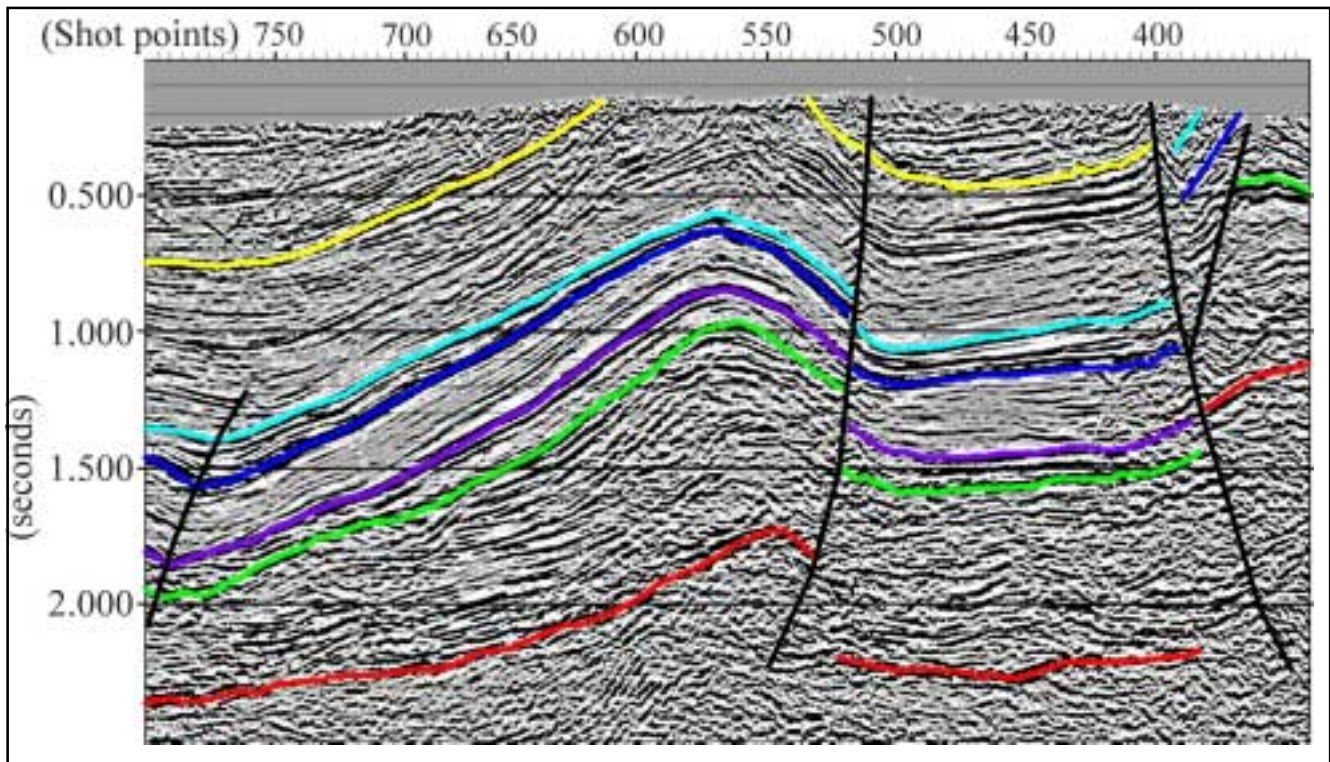


Figure 1: Waiiau Basin line tq118.

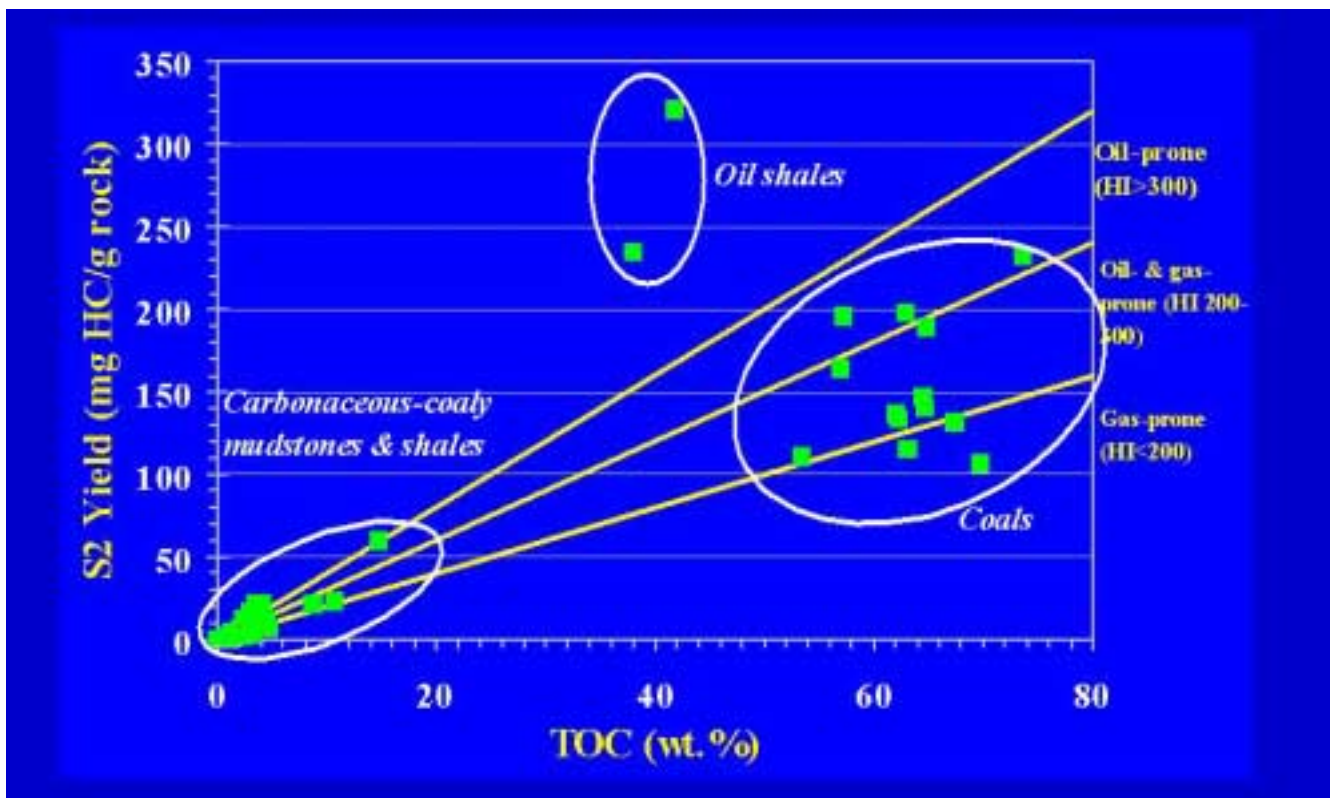


Figure 2: Waiiau Basin - source rocks.

apparently commercial gas discovery in 1998. These facts suggest that substantial reserves remain to be discovered, given sufficiently thorough exploration effort. The ability to access previously collected exploration data and the availability of permits on reasonable, work program-based terms with options for exit, allows for low-cost initial appraisal of promising areas. New Zealand's political system and economy are broadly

similar to the US making it a straightforward place to conduct business, compared to many international opportunity areas.

EEX's interests in New Zealand have been secured through our relationship with GeoSphere Exploration, whose local knowledge has been instrumental in selecting blocks in which we see a great deal of potential. Retaining GeoSphere to advance

the exploration of our permits has allowed EEX to avoid the need to build in-house expertise on New Zealand. The terms of our arrangements with GeoSphere result in aligned objectives.

## PEP 38213, Waiiau Basin

EEX farmed in to PEP 38213 onshore western Southland early last year, after evaluating the viability of the petroleum systems elements reviewed by Mac Beggs earlier in the conference. The seismic data collected by Amoco in the 1980s clearly show the existence of substantial undrilled anticlinal structures (Figure 1).

We undertook some careful analysis of the source rock and reservoir potential and became well satisfied that the key ingredients for a potentially substantial oil discovery exist (Figure 2).

A substantial body of analytical data verify that the Eocene strata in the eastern part of the basin, at least, contain richly oil-prone source rocks.

Thermal modeling of a set of points in proximity to the structural closures that have been mapped, indicate that the source formations have matured to the point of oil generation and expulsion within a substantial kitchen area, with a greater degree of maturation further west. A robust seep of natural

gas occurs within the area predicted by modeling to be gas-generative (Figure 3).

Evaluation of reservoir potential has also been very encouraging, especially with regard to the sandstones of the Beaumont Formation (Figure 4) as it is exposed in outcrop in the eastern part of the basin.

We are currently completing a program of seismic acquisition in PEP 38213, to prove up closure on the principal prospect of interest, and improve the structural delineation of a couple of other prospects nearby, and will be making a decision in relation to the required drilling commitment, later this year.

## PEP 38468, offshore Taranaki Basin

After we had established an interest in New Zealand through the farm-in to the Waiiau Basin permit, GeoSphere drew our attention to the prospectivity of a substantial tract of the northern Taranaki Basin. This block has seen several generations of seismic but relatively little drilling except for the efforts of ARCO in the late 1980s.

PEP 38468 was awarded in September 1999. The permit is all in shelf depths, between 25 and 100 km from New Plymouth. We have commenced the prospecting process by assembling a database of 16 wells and a regional grid of

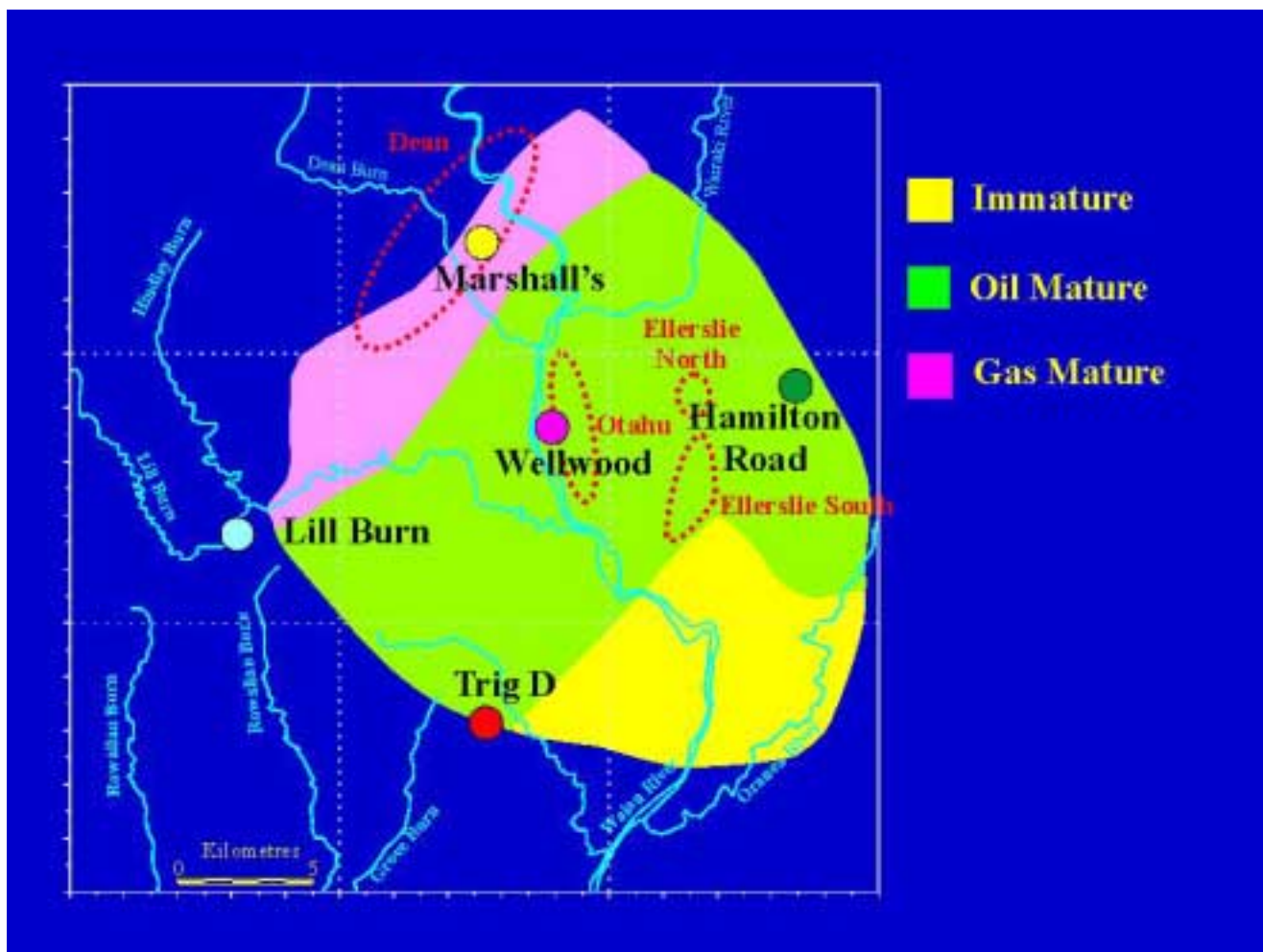


Figure 3: East-Central Waiiau Basin maturity synthesis.

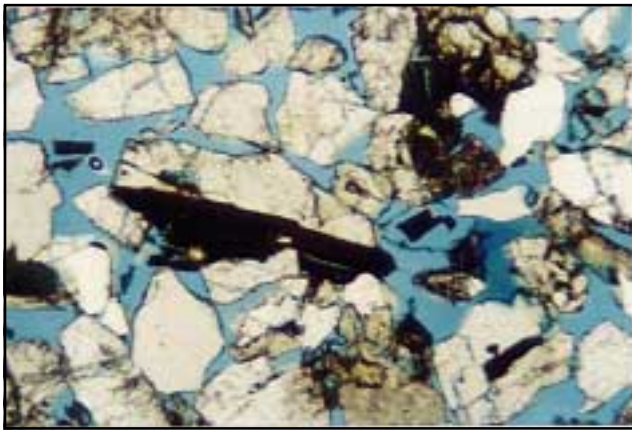


Figure 4: Beaumont Formation, outcrop analogue of potential reservoir materials in the subsurface.

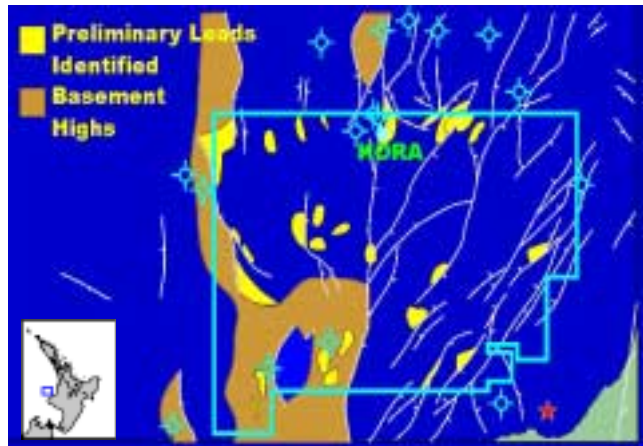


Figure 5: PEP 38468, North Taranaki Basin.

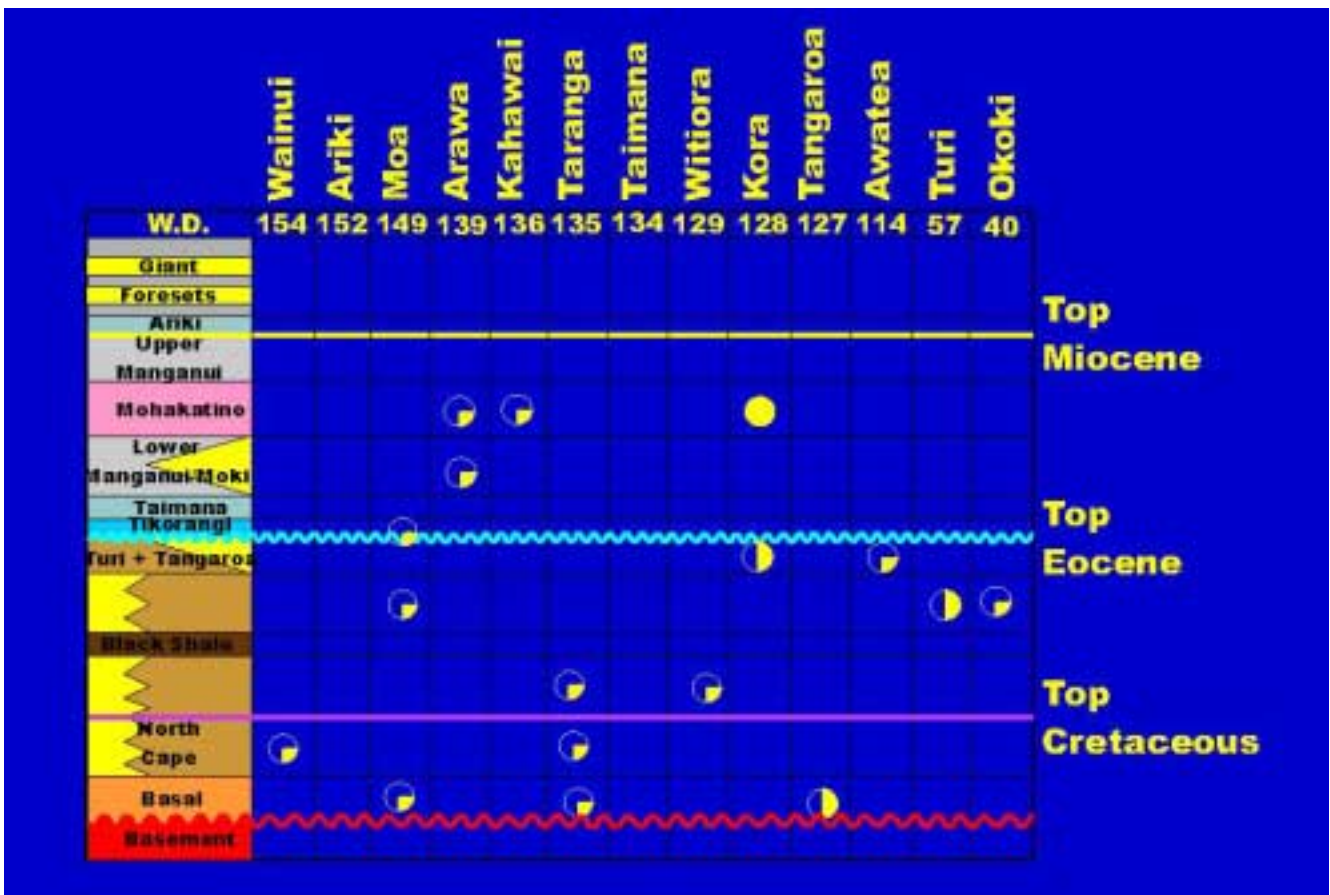


Figure 6: Well shows, PEP 38468.

seismic lines within and around the permit. A modest amount of reprocessing is being undertaken to ensure adequate quality and consistency in the seismic data set (Figures 5 and 6).

Our evaluation to date has identified at least five levels of potential reservoir overlaid on four or five north-south structural trends and with at least two viable source rock intervals. At this initial stage in our prospecting work, a substantial inventory of leads is being built up.

## Summary

EEX's entry into exploration in New Zealand reflects a strategy to selectively build a portfolio of international assets at low cost but with exposure to significant upside. The geological merits of the permits we have acquired combine with fair terms and access to a high level of local expertise to provide a successful implementation of this strategy.

## **Author**

THOMAS HAMILTON is the chairman, president and chief executive officer of EEX Corporation. Mr Hamilton was elected to this position in January 1997. He came to EEX from Pennzoil Company, where he was executive vice president and president of Pennzoil Exploration & Production Company. Prior to his five-year tenure at Pennzoil Company, Mr Hamilton was a director of BP Exploration, where he served as chief executive officer of the Frontier and International Operating Company of BP Exploration from 1989 to 1991. He was the general manager for East Asia/Australia/Latin America from 1988 to 1989. From 1985 to 1988, he held the position of senior vice president-North American Exploration at Standard Oil Company; from 1982 to 1985 he was the executive vice president of exploration and land for Aminoil Company. At Exxon Corporation, Mr Hamilton held several management positions between 1970 and 1982, including geophysical manager of the Gulf Atlantic Division, operations manager for Esso Europe and project manager for Exxon USA. Also during that time, he was a research scientist for Exxon Production Research and exploration geologist for Exxon Exploration.

He is a 1965 graduate of Capital University in Columbus, Ohio, with a bachelor of science degree in geology and a 1967 graduate of the University of North Dakota with a master of science degree in geology. Mr Hamilton earned a PhD in geology from the University of North Dakota in 1970.