SLOVAK PART OF THE WEST CARPATHIAN FLYSCH BELT

EVALUATION OF TWO CONCESSION AREAS

Oravská Polhora and Čadca

INDEPENDENT TECHNICAL REPORT

Compiled by

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For Wharf Resources Plc

As reviewed for English style and grammar

2006

The report has been carried out at the request of Antonio A. Papaleo, Director New Ventures; Wharf Resources Plc. Wharf Resources Plc. has obtained rights to two concession areas in the Western Carpathian Flysch Belt in Slovakia – ORAVSKA POLHORA and ČADCA.

Dr. Ludovit Kucharic, as an experienced consultant in Geology and Geophysics, has been commissioned as the Independent Expert to give a review and evaluate the petroleum interests in both the above mentioned concessions, and consequently to propose next steps in the exploration program.

Sources of information

This report is based mainly on:

- Non-confidential data made available in the Department of Information – Central Archives of Slovak Geodata, Geological Survey of Slovak Republic (SGUDS – Dionyz Stur State Geological Institute).
- Wharf Resources Plc's own materials.
- Other publicly available data.

1. Introduction

Slovak Republic is a country where hydrocarbon demand is satisfied almost completely from imported sources. This is despite the fact that the Slovak Republic has more than ninety years history in the prospecting and exploitation of hydrocarbons. (Deposits of crude oil were discovered in 1913 in the Vienna basin - near Gbely village in the Southwest part of the region).

Domestic demand for crude oil (about 5.6Mt per annum) is almost completely satisfied by imports from Russia (98.8%). Home production covers 1% demand only. Verified storage of gas in the classical easily reachable and exploitable deposits within the Slovak Republic territory is 3 billion m^3 only.

Present gas consumption of the Slovak Republic is about 7 billion m^3/year. Only 3% of this volume is covered by domestic production. With the expectation of a gradual increase in gas prices, it is therefore necessary to revitalise an interest in increasing the share of domestic production. The Slovak Republic provides the gas transit from Russia to Central and Western Europe, therefore prospecting and exploitation of gas in the Slovak Republic will be effective only under rising prices, if domestic gas can be proved as a replacement to imported gas production. There will be great pressure to develop the prospecting and exploitation expenditure.

It is expected that modern methods of prospecting and exploitation, including 3D seismic, multi-purpose and horizontal boreholes, hydraulic collection and splitting methods as well as increasing prices will assist effective prospecting and exploitation.

It is not realistic to expect the Slovak Republic to cover all gas consumption from its own resources. However, it is reasonable in the course of the next two years to stop the downward trend of domestic production and to consider an increase in the share of total consumption in the range of 10-15% over the next 5-6 years as feasible.

2. General Geology

Almost the entire territory of the Slovak Republic is formed by the Alpine mountain belt. The basic subdivision according to nap structures is two mega units - Outer West Carpathians (Externides) - the Northern part of the territory, and Inner West Carpathians (Internides) – the Southern one. The first unit has been formed by naps chiefly during Neogene period and also during the Upper Cretaceous period. The Klippen belt creates the boundary between above mentioned units and has been formed equally by both nap events. Because the Inner West Carpathians are not the subject of this report, our attention will concentrate on the Northern unit.

Outer West Carpathians possess a typical feature in the development of Mesozoic and Paleogene flysch sequences, namely the absence of pre Mesozoic sequences, the rootless system of flysch nappes and finally a negligible portion of after thrusting cover.
The Flysch Belt is generally a part of the accretional prism generated between the North European platform and West Carpathian block. The concession areas are situated in the western segment of this unit.

The marginal group of Flysch Belt and Middle Krosno–Menilitic group are outside the scope of this report and are not developed on the surface, but potentially on the basis of geological knowledge, can be developed in the bottom part of areas. The Inner Magura group has a dominant position on the Slovak Republic territory. This group involves the four partial nappes (from the north to the south) – Rača, Bystrica, Krynica and Biele Karpaty respectively.

The Rača unit is created by Solan formation on the bottom (Thickness 1,000 m approx. predominantly sandstones), next is the Variegated sequence (150 m thickness, claystones mostly) and the Hieroglyf formation, (medium bedded flysch with a predominance of fine grained sandstones above claystones). Finally the formation is completed by the thick rhythmic flysch sequence (1,000 m thickness) called the Zlín formation.
The Bystrica unit has the Beloveža formation on the base (lower – claystones, upper – sandstones and siltstones predominantly). The Bystrica member represents thick-rhythmical flysh alternation of thick to thin bedded greywacke sandstones.
The Orava-Magura unit contents of the Beloveža formation (thin-rhythmic flysch), the Racibor formation (alternation of calcareous silty claystones and graywacky thin coarsed-

grained sandstones) and the Malcov formation (distinctive share of claystones predominating over quartzy–carbonate sandstones).

In general, the Flysch Belt represents a complicated fold/nappe structure which received its final form during the Miocene period (tectonic movements having taken place from the Lower Eocene to Baden Ian). The belt is thrusted over the Bohemian Massif (North European platform) and the Carpathian Foredeep, in places up to the distance of 30 km. This belt is built up by sediments ranging in age from the Upper Jurassic to Lower Miocene. The Mesozoic is represented by flysch sediments (i.e. sandstones and claystones), sporadic klippes of Jurassic limestones within the Paleogene flysch sediments and some Cretaceous sediments. The Paleogene rocks predominate in the majority of nap units, composed of alternating conglomerates, sandstones, marlstones and bituminous shales. The Lower Miocene is mainly in a pelitic facies. The thickness of the Flysch Belt sediments increases from the north to the south and may reach in the most internal zone (near the Pieniny Klippen Belt) more than 10 km, (according to magneto telluric results and 2D gravity modelling).

At depth, it is possible to divide the geological structure to the three structural levels characterized by the different structural-tectonic styles: near-surface structural level, middle and lower structural levels.

The upper structural level is represented by the Magura nap established on the surface. This level is typified by intensive thrusting structures. Narrow long folds are combined with steep thrusting, with the contribution of intensive faulting. Porosity and permeability of rocks in this level varies between low and very low in spite of tectonic activity.

The middle structural level is created by the Obidova – Slopnice unit, having regional extent and without outcropping on the surface. This unit, with identical lithostratigraphical column as the overlying Magura nappes, is less affected tectonically and contains good reservoir rocks. The characteristic member of this unit is the menilite Krosno formation. The borehole at Oravská Polhora was drilled to a depth of 1,300 m and this unit provided an inflow of salt water with methane.

The lower structural level represents the North European platform with the crystalline basement and it’s Paleozoic to Cenozoic sedimentary cover. The platform is formed by the magmatic and metamorphic rocks. An occurrence of huge thicknesses of bituminous rocks (shale’s mostly), which can be probably considered as source rocks. This basic unit has not been drilled on Slovak Republic territory. Its presence in the territory is derived from the geophysical data interpretation. The envelope of the Platform consists of Devonian to Miocene sediments and it is known that carbonate members are especially good reservoir rocks as has been proved in the Czech Republic and Poland.

3. Historical background and reality of hydrocarbon prospecting and exploitation

The Carpathian Flysch Belt is one of the classical territories in the world in which petroleum geology was formulated and the petroleum industry was born. The first oil well was drilled in Poland in 1853. In the 1950s the Carpathian flysch became one of the principal territories in which the original concept of deep-water turbidities was formulated and represents one of the best and thoroughly studied turbidic facies exposed on land anywhere. It has been often compared with the deep–water sequences of the Ouachita Mountains belt of Arkansas and Oklahoma. In many respects, the Carpathian flysh, famous for its complexity and diversity, may serve as a model in exploration of hydrocarbons in deep – water deposits both along the modern continental margins and in the orogenetic belts.

Subthrust plays below the frontal zones of the the thin-skinned Carpathian thrust belt seem to be most promising. There is a variety of sub thrust plays in the Carpathians, some of which have been successfully tested, new fields discovered and commercial production established from new discoveries. In this,"Pica"described the fundamentals of hydrocarbon exploration under the thrust belts, using the Carpathians as the case study. However, as in the thrust belts proper, favorable conditions for generation, accumulation and preservation of hydrocarbons in sub thrust plays exist only in the limited areas with good source rocks, reservoirs, seals, and the right timing of generation and migration of hydrocarbons.

4. Characteristics of typical geophysical features of both concessioned localities

In spite of the fact that the distance between the localities is about 40 km, they facilitate to one geological unit, and possess a generic element, which enables them to be evaluated together. This element is the position of the commissioned areas in the Bouguer anomaly map. It is apparent, that both localities are located on the northern gradient of the Carpathians gravity minimum, which extends from the Namestovo township on the East, to the Bytca town to the West (within the framework of localities in question). This gradient is a typical regional one, localities are approximate in this area, where the monotonous gradient almost W – E direction is disturbed by the perpendicular, or less perpendicular inhomogenities. Anomaly character of these objects is negative, that is in good accord with knowledge about volume density of hydrocarbons.

The most prominent feature in the Oravska Polhora area, (among villages Sihelne, Oravska Polhora, Rabca and Rabcice) see Fig. 1, is the visible negative gravity anomaly with the amplitude almost -5 mgl, and extension 9x5 km approximately. The magnetic field does not exhibit significant changes. (Note, not all the area is covered by this method). Unfortunately, the deep borehole Oravska Polhora is situated outside this anomalous zone. The negative gravity field is prolongated to the NW direction, to the space between the Northern part of Oravska Polhora village and state boundary with Poland. Thus the anomaly extends much further, with increased significance for hydrocarbon prospecting.

The concession with 242 km^2 is situated (on the surface) in the Magura nap units near the political frontier with Poland, (see Figs. 1, 2, and 5). The concession area is fairly well (but not optimally) covered by reflection seismic profiles (Kadlečík et al., 1988, Potfaj & Šucha, 1988, Novák et al., 1991). Within the area one deep borehole Oravska Polhora has been drilled - completed in 1988 to a final depth of 2,417 meters (Zakovič et al., 1988). The stratigraphic profile of that borehole is built up by following tectonic units (from surface to depth): 0 to 130 m - Bystrica unit, 130 to 1,300 m - Raca unit, 1,300 to 2,417 m - Obidowa-Slopnice unit (Potfaj & Šucha, 1988, Zakovič et al., 1988). Typical facies for Bystrica and Raca units (Magura nap units) are the alternation of claystones and sandstones in different relations along the depth profile of the borehole. Typical facies for the Obidowa-Slopnice unit is the Krosno-Menilite formation that has more fine-grained facies in its upper part and coarse-grained facies in its lower part. Also typical for this unit is the alternating of sandstones and claystones. Structural–tectonic style of this unit shows oblique up to duplex style of its internal structure, which is nicely visible for example on the seismic profile 512/86 (Hrušecký & Fejdi, 2002, Hrušecký et al., 2003), on the seismic profile 312/85 from the Cadca area (see Fig. 4). It is also well known from other regions of occurrence of this unit (e.g. in the eastern part of the Flysch Belt in Slovakia - Hrušecký et al., 2003 - seismic profile 79-80/87). In spite of the fact that process of interpretation is in a majority of cases carried out through a subjective assessment, in our opinion it is possible to find some expected structures.

Because the quality of the seismic profiles in the Oravska Polhora concession area is generally not so good, there are difficulties to create absolutely clear planar and vertical concepts of the potential traps in the evaluated area. While the main problem is to define internal geological structure of the main units, basic structurally important features are distinguishable in the seismic profiles.

Similar, though not so prominent and extensive, gravity anomaly is located to the west of this, in the space among villages of Becadovo – Novot and Mutne. The anomaly is in the form of a triangle with the base about 8 km long and perpendicular height of 5 km. Its relative amplitude is -4 mgl. The position of seismic profiles in this area is unknown.

Both anomalous zones are on an equal level in respect of regional Carpathians minimum sites. Taken together with seismic results given by the Hrusecky appraisal (2005), it is very probably reflective of a positive hydrocarbon structure from the Obidowa-Slopnica unit, as well as underlying platform cover, or the platform itself.

The second concession CADCA of 205 km^2 is situated (similarly as Oravska Polhora concession) in the Magura nap units on the surface (see Figs. 1, 2, and 5) and near the political frontier with Poland. The concession area has only had limited 2D seismic profiles (Kadlečík et al., 1981, 1988, Novák et al., 1991), which is unsatisfactory. The nearest borehole, approx. 3 km from the southeastern border of the concession area, is situated at Oscadnica -1 (see Figs. 1, 2, and 5). So, we must use results only from this borehole, to know at least minimal information about tectonic units, stratigraphy and lithostratigraphy at depth and some additional information.

That borehole was drilled in 1969 with the final depth of 1,360 meters (Eliáš et al., 1969). It was terminated for technical problems. Besides this, several other boreholes have been drilled in this area, as follows:
Papradno – well drilled in 1921 to 4,500 m tested paraffin based petroleum of low gravity along with some gas occurrences.
Korňa–Predmier – a surface well was drilled in 1899 to recover low gravity paraffin-based oil. A production works that included 15 to 16 "wagons" was constructed and actively recovered oil from 1899 to 1920. During World War II. Five holes were drilled around the surface seepage and all wells encountered oil or gas horizons but were not put into production.
In 2002 the Korňa 1 well was drilled to a depth of 1,293 m. This was a discovery well with the identification of shallow (178 – 193 m) at a 15 m interval containing light oil.
Svrčinovec–Turzovka – drilled to 710 m and recovered low gravity oil
Čadca – recovered low gravity oil and gas from flysch sediments. The methane content of Gas was 94, 8 %.

The locality of Cadca exhibits an equal feature of the gravity field, but relative negative anomaly reaches only less than -3 mgl and the configuration of gravity gradient is again in the form of a triangle with the length of base about 10 km (W – E approx.) and its height is 5 km towards the North from the Carpathian minimum. But between Cadca and Korna village is visible a prominent negative anomaly with the axis almost 20 km (W – E direction). Almost all of the above-mentioned boreholes are situated within this zone. It is the subject of consideration, if findings of hydrocarbons in these boreholes are signatures of deeply sited deposits, or ways of permanent volatile hydrocarbons without possibility to produce a trap. On the seismic profile (Fig.5) is depicted a variant of a possible interpretation.

In our opinion, the potential structure in the centre of the Oravska Polhora concession is the most interesting object for exploration, with the highest prospective and probable yield. This object, as a large anticline structure of the Obidowa-Slopnice, and can be interpreted. Depths where potential prospective zones start are between 1,100 and 1,300m (Obidowa-Slopnice Unit) and prospective structures continue to a depth of 6,000 to 6,500m (Paleozoic and Cenozoic platform cover). This structure is not explored by any borehole (borehole Oravska Polhora – 1 lies outside of this structure).

On the other hand, our experience from the East part of the Flysch Belt (East Slovakia region) points to the general accepted conclusion that inhomogenities in the gravity field measured in the extension of this unit are caused predominantly by density differences within underlying rock complexes. The anomaly in question is depicted by a negative gravity anomaly. It means that gaps in the densities can be expected, because flysch rock filling is characterised by very small variations in the volume density, due to monotonous rock filling. The majority of small gravity anomalies are usually connected with variation in porosities of flysch filling. Very low density can be therefore considered as the effect of hydrocarbon-saturated rocks of Obidova – Slopnice unit and the platform envelope, and equally the pre-Mesozoic rocks of the platform as well.

The generally accepted premise is valid about non magnetic material occurrences in the flysch rocks on the Slovak Republic territory. From this point of view it is very interesting a gradual increase of the magnetic field to the North. This feature could be marked by the presence of rocks, which are typical for the Paleozoic rock formations.
The magnetic anomalies in the flysh zone have been detected on the crown of Magura nap within the Ukraine region. (Krutikovskaja, et al. 1971).

According to long term empirical approach, the very close space relationship between magnetic anomalies and anomalies induced by polarization or conductivity has been observed both in the Paleozoic and post Paleozoic rocks. The first anomalies are caused in the majority events by occurrences of the ultrabasic, basic and intermediary volcanic rocks and electric anomalies of this type have origins in the black rock complexes with the higher content of organic C. Thus we can expect the presence of source rocks for hydrocarbon generation. This factor concerns not only platform data, but is possible in the Obidowa-Slopnice unit too.

5. Conclusion

- We state here that both the above evaluated areas are interesting from point of view of petroleum potential. The most interesting prospect is the middle structural level of the Flysch Belt (Obidowa-Slopnice unit) and deeper North European platform with its probably Paleozoic and Cenozoic sedimentary cover situated in the shallower parts of both the concession areas. Occurrence of hydrocarbons in these units in the locality Oravska Polhora is very probable.
- However, there are many oil and gas seepages on the surface within the Magura nap units (mainly in the Cadca concession) and we do not think that they have remarkable value. Magura nap units are very deformed and tectonized and therefore we consider these seepages as a manifestation of the open migration paths of hydrocarbons. The underlying Obidowa-Slopnice unit is less tectonically deformed and better covered by stack nap units. Therefore we considered this unit as a much better target for petroleum exploration. The configuration of the gravity field is not so prominent.
- According to our opinion, the petroleum potential structure in the centre of the Oravska Polhora concession is the most interesting exploration object, with highest prospectivity and probable yield. It can be interpreted as a large anticline structure of the Obidowa-Slopnice unit. Depths where the potential prospective zones start are between 1,100 and 1,300 meters (Obidowa-Slopnice Unit) and prospective structures continue up to depths of 6,000-6,500m (Paleozoic and Cenozoic platform cover) and probably to a greater depth. This structure is not explored by any borehole (borehole Oravska Polhora – 1 lies outside of this structure).
- Finally, in spite of that, we recommend to start with the exploration activities (before drilling) at the above-defined large possible anticline structure in the concession Oravska Polhora and namely with the reprocessing of the older 2D seismic data in this area and data from seismic profile 2T , together with results of magneto telluric measurements.
- It would be useful to correct boundaries of commissioned areas according to anomalies on the Fig. 1 and 2.

Hydrocarbon potential on the area is computed on a speculative basis only and could be reached in both structural levels on the locality Oravska Polhora about 3 million tonnes of crude oil and about 15 billion m^3 of gas. Similarly on the locality Cadca we estimate about 1.5 million tonnes of crude oil and 10 billion m^3 of gas.

6. Recommendation:

- Besides the obvious reprocessing of old seismic profiles, it is necessary to take into consideration the extension of the Carpathians conductivity zone and map of heat flow as well.
- Equally the interpretation of the magneto telluric results performed on the refraction seismic profile 2T (international project celebration) can be useful for progress in knowledge of hydrocarbon sources and accumulation rock complexes and situation.
- Supplementary seismic measurements in 2D and 3D on both the localities are needed.
- As an additional source of information, a gravity profiling on the seismic profiles is recommended, with alternative approach to 2D or 3D modeling, with the seismic results interactions. Positive results could serve as an indicator for hydrocarbon occurrence in such structural positions.
- A magnetic survey in this case on the seismic profiles is needed, (very cheap method relatively) because present magnetic survey is incomplete and unsuitable for the purpose of prospecting.
- Only after interpretation of all geophysical methods taking a part on this subject will it be possible to site a borehole to the depth at least 5,000 metres.

Hydrocarbon potential on the area is computed on a speculative basis only and could be reached in both structural levels on the locality Oravska Polhora about 3 million tonnes of crude oil and about 15 billion m^3 of gas. Similarly on the locality Cadca we estimate about 1.5 million tonnes of crude oil and 10 billion m^3 of gas.

7. Declarations

7.1. Qualifications and experience

Dr. Ludovit Kucharic qualifications are as follows:

EDUCATION (year of graduation)

1965 Secondary school for workers Bratislava

1971 Charles University Prague, Faculty of Natural Sciences, Department of Applied Geophysics

1977 RNDr. (M.Sc) degree obtaining, Comenius University Bratislava (Radioactivity of the Western Carpathians granitoids rocks according to gamma ray spectrometry)

1986 CSc. (PhD) degree obtaining, Comenius University Bratislava (Geophysics and geological evaluation of the Spišsko – gemerské ore Mts. in the East part of Slovakia – complex synthetic interpretation of methods: Induced polarisation, Resistivity, Spontaneous polarisation, Magnetometry, Gravity, Mercurymetry and geological mapping).

PROFESSIONAL HISTORY

1971 - 1973 Geofyzika, national enterprise Brno, branch Bratislava – geophysicist

1973 - 1979 Uranium investigations, national enterprise Liberec, branch IX. Spisska Nova Ves – geophysicist in the field of prognosis of radioactive raw materials.

1980 - 1982 Geofyzika national enterprise Brno, branch Bratislava, centre Spisska Nova Ves, geophysicist – specialist

1983 A head of geophysical group in the Northern Nigeria – Kaduna State. Looking for of resources of underground drinking waters in the Sahel area – the using geoelectrical methods – 80% successful boreholes

1984 - 1986 A head of geophysical group – project manager. Geofyzika, national enterprise Brno

1987 A deputy manager of geophysical group in Syria. Project, geophysical measurements in the selected areas of Syria"- looking for of diamonds and ore raw materials in the Coastal Mts. and the Bassit area.

1988-1992 A project manager and deputy of head of East Slovakian division, Geocomplex joint stock, Bratislava. Geophysical project manager of the largest number of hydrocarbon projects in the framework of previous Czechoslovakia Republic (Spišsko gemerske ore Mts. – geophysics-geological and geophysical synthesis).

1993 - 1999 An executive director of the private company - Environmental Consulting Services Slovakia Ltd., Spisska Nova Ves. Solutions for various geological problems. (Raw materials, hydrogeological, geotechnical, geoenvironmental - Georadar experience). Knowledge from waste management and contribution to EIA projects (Turcek dam, Zilina town, - centre of waste deposit).

2000 - 2005 A researcher – Dionyz Stur State Geological Institute (Geological survey of Slovak republic). Co-author of the new digital magnetic map of Slovak

republic. Geophysical project manager by raw material evaluation in the crystalline region of the Western Carpathians (Veporicum unit).

2005 - Head of geological division Geological survey of Slovak Republic

Summary

33 years of practice in the field of solving various geological problems (ore deposits, raw materials, hydrogeological and geotechnical problems, as well as environmental problems). A part activity has been dedicated to waste management, radon and mercury pollution.

Magnetic and gravity data modeling, vertical electrical sounding interpretation, induced polarization and self potential methods interpretation, results of gamma ray spectrometry evaluation.

Handling of various extensive geophysical, geochemical, and geological data sets, (processing, visualization, plotting).

Classical geological mapping. Specialization - geological interpretation of various geophysical data expert not only from office, but also directly in the field.

Solution of international environmental projects concerning to CO2 storage in the abandoned hydrocarbon deposits in the framework of the European Union, president of ENERG club – international independent organization (22 countries)

The author of 50 published papers (mostly in Slovakia), more than 30 reports from investigation, as well as contributions at various conferences and seminars.

The administrator and co-administrator of several conferences and seminars.

Present position – head of geological division Geological survey of Slovak Republic (Dionyz Stur State Geological Institute).

This short report has been completely compiled by Dr. Ludovit Kucharič for Wharf Resources Plc.

7.2. Independence

Dr. Ludovit Kucharic as author of this short report has no pecuniary or professional interests which could reasonably be regarded in any way as affecting his abilities to report impartially on the petroleum exploration interests of Wharf Resources Plc.

7.4. Purpose of the report

This report has been prepared solely for Wharf Resources Plc. for inclusion in the Prospectus and should not be relied on for any other purpose.

7.5. Conformity

This report has been prepared in conformity with the requirements of the Slovak Acts.

References:

Ďurica, D., Namestnikov, J. G., Pagáč, I. & Roth, Z., 1986: Deposits of Oil and Natural Gas in Central Europe. Monography, ALFA Publishers, Bratislava, 284 pp. (in Slovak with English resume).

Eliáš, M., Grubhoffer, V. & Hanzlíková, E., 1969: Oščadnica – 1. Final evaluation of the borehole. Project: Research of the regularity of the occurrences and a cycle of the iodine-bromine mineral waters. Final report. Manuscript, Archives of Geofond Bratislava, 64 pp. (in Czech).

Golonka, J., & Picha, F.,2003: The Carpathians: geology and hydrocarbon resources.Mineralia Slovaca 1/35

Hrušecký, I., Plašienka, D., Kováč, M., Šefara, J., Putiš, M., Bielik, M., Reichwalder, P., Marko, F., Kováč, P., Túnyi, I., Orlický, O., Halmešová, A. & Šujan, M., 1996: Western Carpathians - Favourable Structural-Tectonic Features from Viewpoint of the Hydrocarbon Exploration. Final report. Study for Slovak Ministry of Environment. Manuscript, Archives of Ministry of Environ., Bratislava, 90pp. (in Slovak).

Hrušecký, I. & Fejdi, V., 2002: Interpretation of the deep reflection seismic profiles in the West Carpathian Flysch Belt (seismic profiles 2T_AT/83, 84 and 512/86). Final report. Manuscript, Archives of Geocomplex a.s. Bratislava, 11 pp.

Hrušecký, I., Pospíšil, L., Fejdi, V. & Plašienka, D., 2003: North-European Platform bellow the accretionary prism of the Western Carpathians. Extended Abstracts of the 65th EAGE Int. Conference (Volume 2 – P061), Stavanger, Norway, 2003, 4 pp. (also poster).

Hrušecký, I., 2005: Slovak part of the Carpathian Flysch Belt – evaluation of two concesssioned areas. Report.

Kadlečík, J. et al. (13 co-authors), 1988: Reflection seismic survey of the Flysch Belt and Inner Carpathian units. Manuscript, Archives of Geofond Bratislava, 98 pp. (in Czech).

Kubes, P., Grand, T., et al. 2001: Atlas geofyzikalnych map a profilov. SGUDS. In Slovak.

Novák, J. et al. (8 co-authors), 1991: Reflection seismic exploration of the Flysch Belt and Inner Carpathian units (Area of the Flysch Belt – report for the years 1987 to 1990). Manuscript, Archives of Geofond Bratislava, 47 pp. (in Czech).

Pagáč, I., Pereszlényi, M., Masaryk, P., Milička, J., Čechová, A., Maheľ, M., Zelman, J., Vitáloš, R. & Slávik, M., 1996: Perspective area I and II: West Carpathian Flysch Belt and Peri-Pieniny Klippen zone. In: Janku, J. et al. : Evaluation of the perspectives of the hydrocarbon prospection in the selected areas of the Western Carpathians. Part IX, Final report. Manuscript, Archives of Geofond Bratislava, 34 pp. (in Slovak).

Pereszlényi, M., Vitáloš, R., Trgiňa, P. & Slávik, M., 1996: Maturity modelling of the organic matter in the sedimentary basins at the hydrocarbon exploration in the area of the Western Carpathians. In: Janku, J. et al. : Evaluation of the perspectives of the

hydrocarbon prospection in the selected areas of the Western Carpathians. Part III, Final report. Manuscript, Archives of Geofond Bratislava, 69 pp. (in Slovak).
Picha, F., J., 1996: Exploring for hydrocarbons under thrust belts a challenging new frontier in the Carpathians and elsewhere. AAPG Bulletin, 89, 1547 – 1674.

Pospíšil, L., Hrušecký, I., Krejčí, O. & Plašienka, D., 2004: Deep prospects bellow the Western Carpathian thrust belt: Idea or reality? Official Program and Abstract Book of the AAPG European Region Conference with GSA, Prague, Czech Republic, 2004, p.100. (Also poster).

Potfaj, M. & Šucha, P., 1988: Geological interpretation of the geophysical data in the area Orava (gravity, seismic and geoelectric measurements). Manuscript, Archives of Geofond Bratislava, 40 pp. (in Slovak).

Zakovič, M., Bodiš, D., Fendek, M., Potfaj, M., Gabauer, G. & Bálint, J., 1988: Geological research of the iodine-bromine waters in the selected areas of Slovakia (borehole Oravska Polhora-1). Final report. Manuscript, Archives of Geofond Bratislava, 68 pp. (in Slovak).

List of Figures:

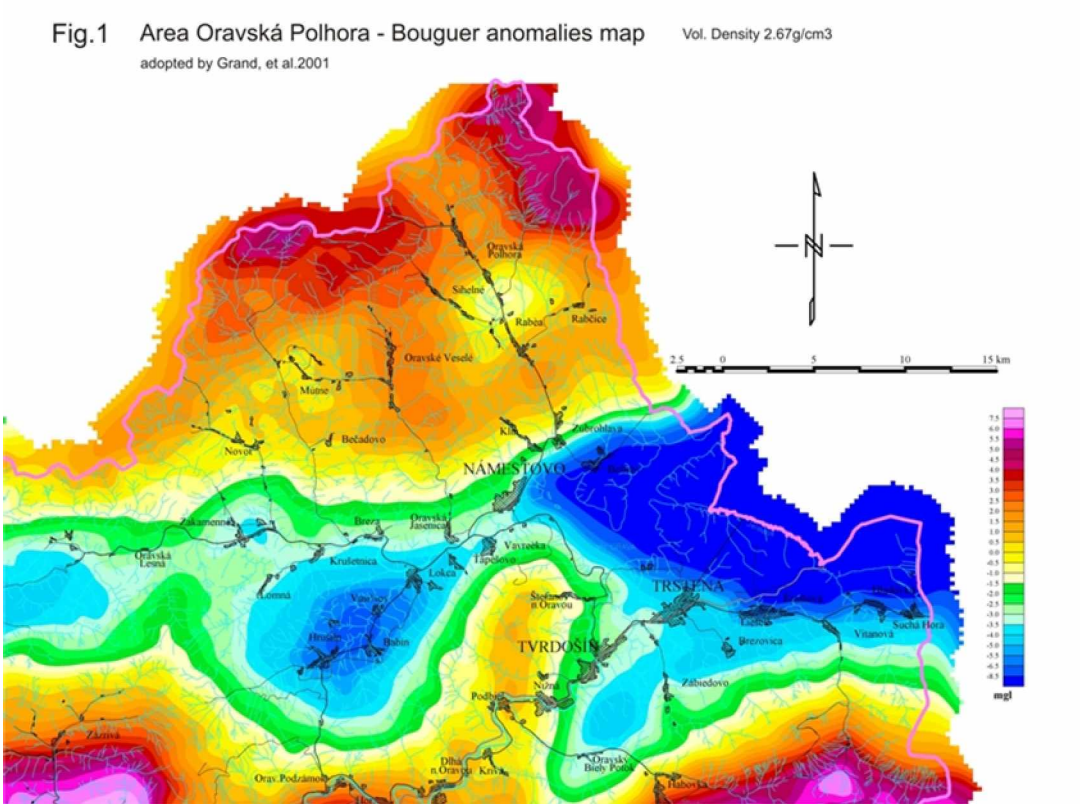
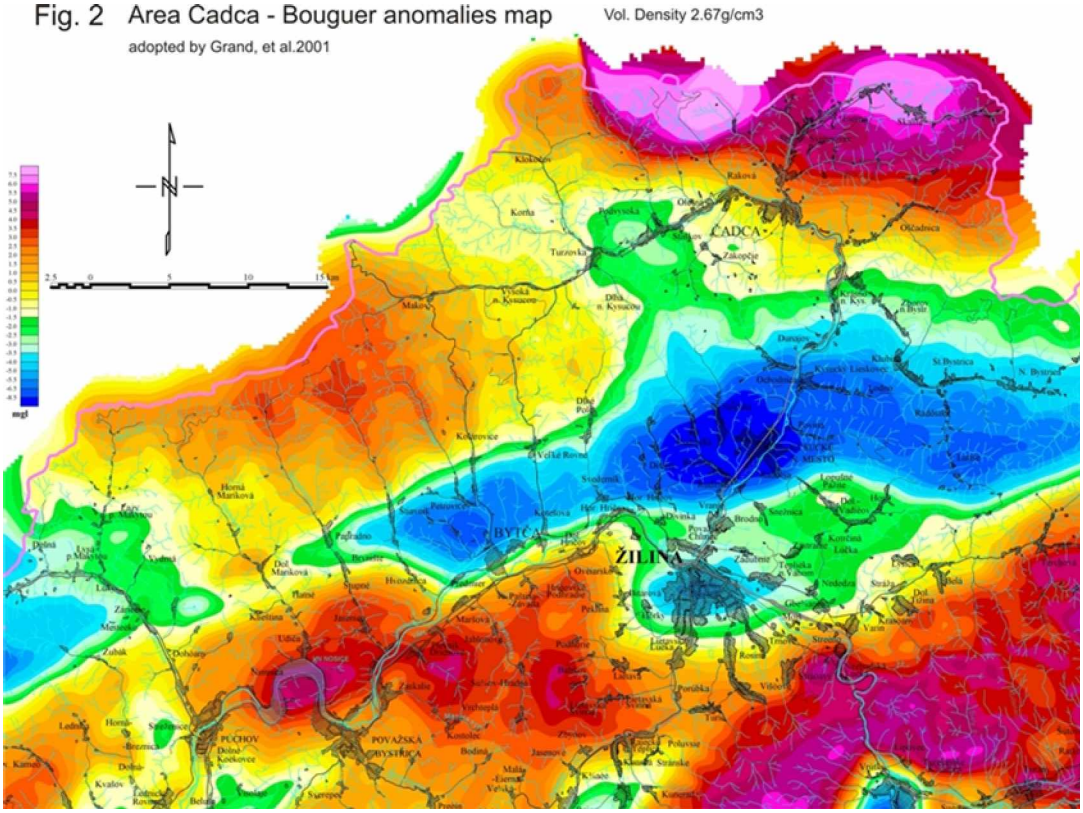


Fig. 2 Area Cadca - Bouguer anomalies map Vol. Density 2.67g/cm3

adopted by Grand, et al.2001



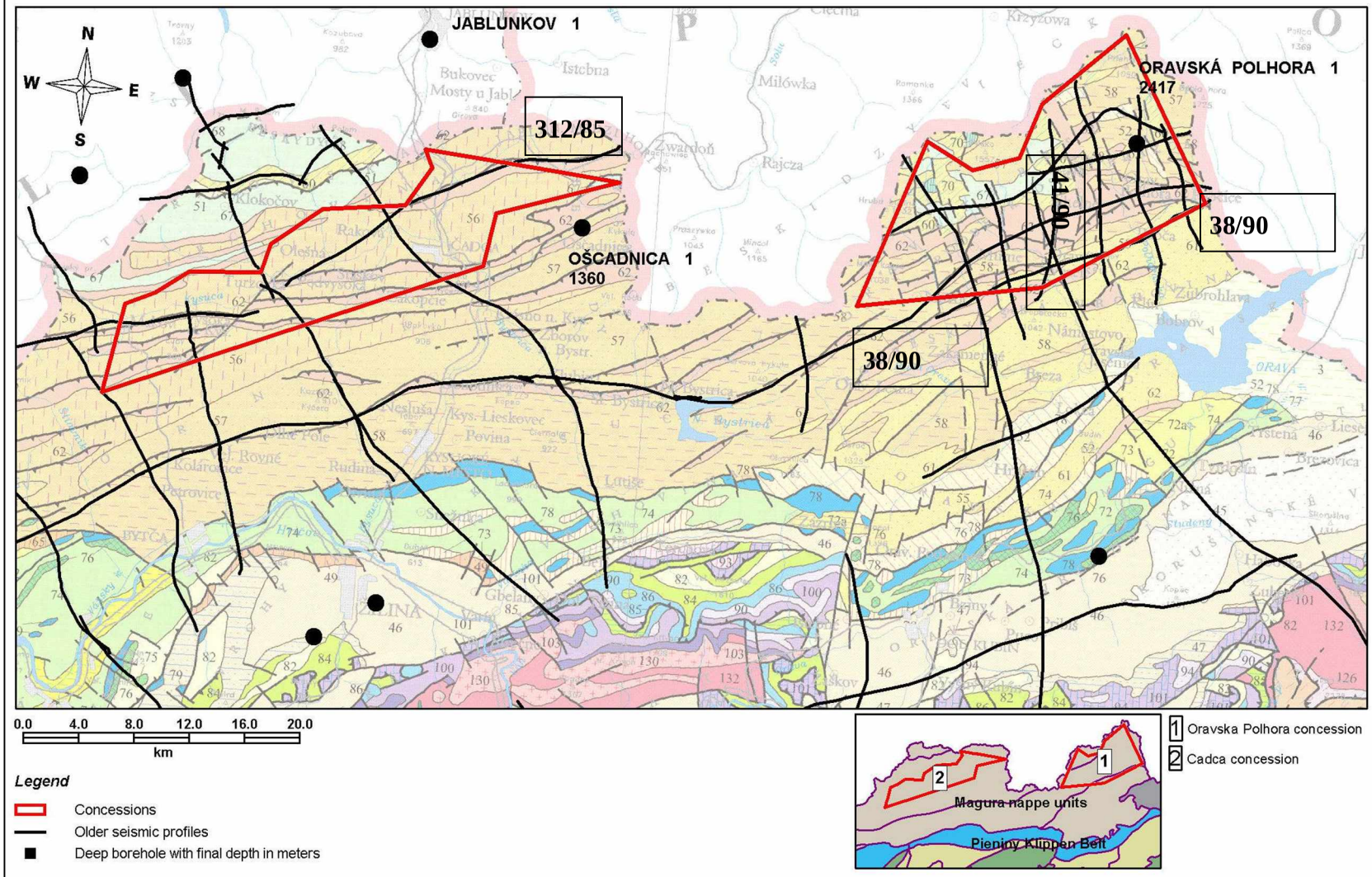
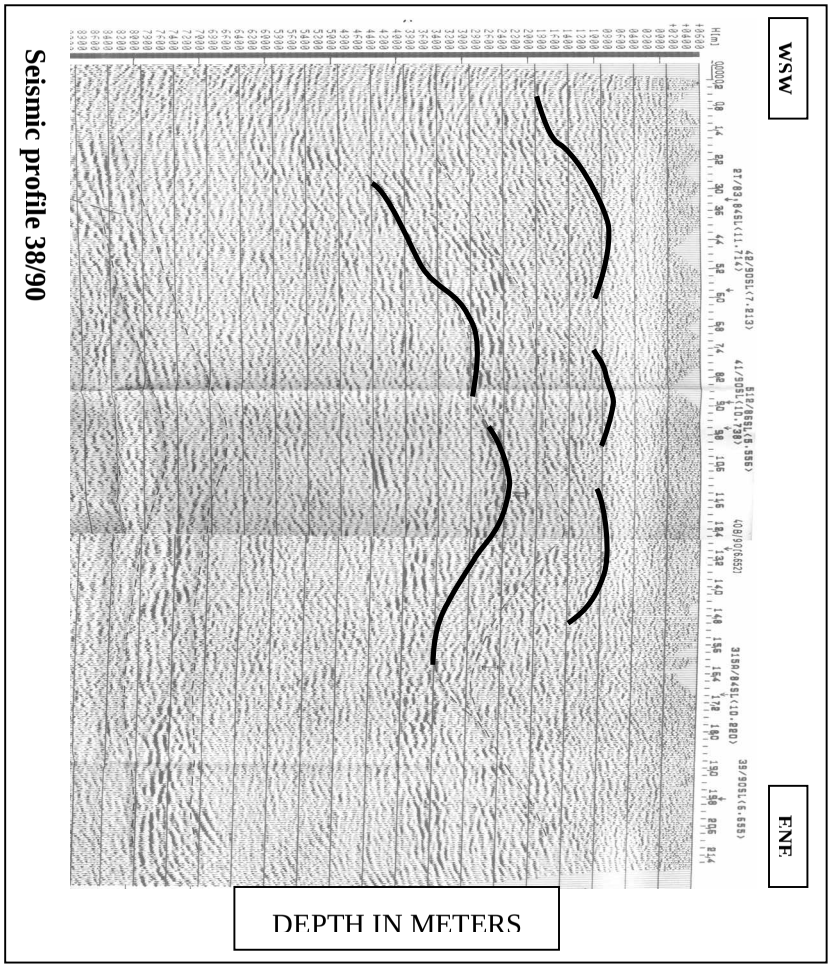


Fig.3 West Carpathians flysch belt with two concessed localities



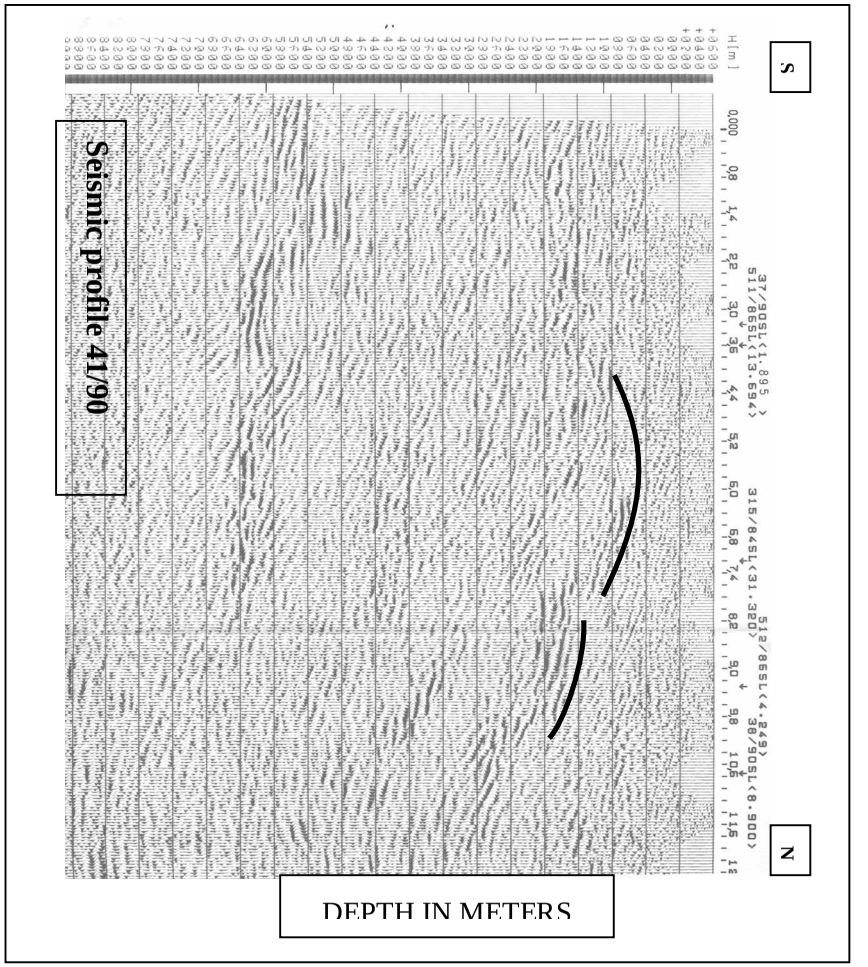


Fig. 4 Locality Orav. Polhora - variant of interprettion

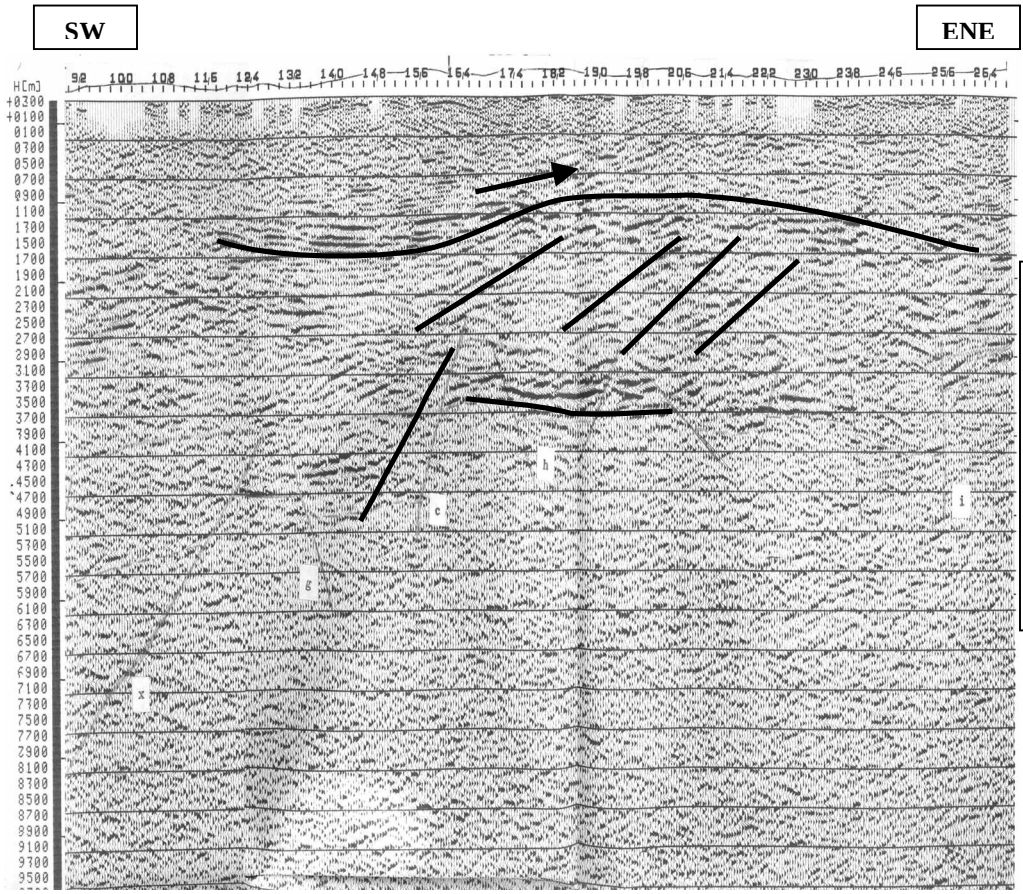


Fig. 5 Locality Cadca – variat of interpretation