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«ХАЛЫҚ» ЖҚ

Х А Б А Р Л А Р Ы

ИЗВЕСТИЯ

РОО «НАЦИОНАЛЬНОЙ
АКАДЕМИИ НАУК РЕСПУБЛИКИ
КАЗАХСТАН»
ЧФ «Халық»

N E W S

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NAS RK is pleased to announce that News of NAS RK. Series of geology and technical sciences scientific journal has been accepted for indexing in the Emerging Sources Citation Index, a new edition of Web of Science. Content in this index is under consideration by Clarivate Analytics to be accepted in the Science Citation Index Expanded, the Social Sciences Citation Index, and the Arts & Humanities Citation Index. The quality and depth of content Web of Science offers to researchers, authors, publishers, and institutions sets it apart from other research databases. The inclusion of News of NAS RK. Series of geology and technical sciences in the Emerging Sources Citation Index demonstrates our dedication to providing the most relevant and influential content of geology and engineering sciences to our community.

Қазақстан Республикасы Ұлттық ғылым академиясы «ҚР ҰҒА Хабарлары. Геология және техникалық ғылымдар сериясы» ғылыми журналының Web of Science-тің жаңаланған нұсқасы Emerging Sources Citation Index-те индекстелуге қабылданғанын хабарлайды. Бұл индекстелу барысында Clarivate Analytics компаниясы журналды одан әрі the Science Citation Index Expanded, the Social Sciences Citation Index және the Arts & Humanities Citation Index-ке қабылдау мәселесін қарастыруда. Web of Science зерттеушілер, авторлар, баспашылар мен мекемелерге контент тереңдігі мен сапасын ұсынады. ҚР ҰҒА Хабарлары. Геология және техникалық ғылымдар сериясы Emerging Sources Citation Index-ке енуі біздің қоғамдастық үшін ең өзекті және беделді геология және техникалық ғылымдар бойынша контентке адалдығымызды білдіреді.

НАНПК сообщает, что научный журнал «Известия НАНПК. Серия геологии и технических наук» был принят для индексирования в Emerging Sources Citation Index, обновленной версии Web of Science. Содержание в этом индексировании находится в стадии рассмотрения компанией Clarivate Analytics для дальнейшего принятия журнала в the Science Citation Index Expanded, the Social Sciences Citation Index и the Arts & Humanities Citation Index. Web of Science предлагает качество и глубину контента для исследователей, авторов, издателей и учреждений. Включение Известия НАНПК. Серия геологии и технических наук в Emerging Sources Citation Index демонстрирует нашу приверженность к наиболее актуальному и влиятельному контенту по геологии и техническим наукам для нашего сообщества.



ЧФ «ХАЛЫҚ»

В 2016 году для развития и улучшения качества жизни казахстанцев был создан частный Благотворительный фонд «Халык». За годы своей деятельности на реализацию благотворительных проектов в областях образования и науки, социальной защиты, культуры, здравоохранения и спорта, Фонд выделил более 45 миллиардов тенге.

Особое внимание Благотворительный фонд «Халык» уделяет образовательным программам, считая это направление одним из ключевых в своей деятельности. Оказывая поддержку отечественному образованию, Фонд вносит свой посильный вклад в развитие качественного образования в Казахстане. Тем самым способствуя росту числа людей, способных менять жизнь в стране к лучшему – профессионалов в различных сферах, потенциальных лидеров и «великих умов». Одной из значимых инициатив фонда «Халык» в образовательной сфере стал проект *Ozgeris powered by Halyk Fund* – первый в стране бизнес-инкубатор для учащихся 9-11 классов, который помогает развивать необходимые в современном мире предпринимательские навыки. Так, на содействие малому бизнесу школьников было выделено более 200 грантов. Для поддержки талантливых и мотивированных детей Фонд неоднократно выделял гранты на обучение в Международной школе «Мирас» и в Astana IT University, а также помог казахстанским школьникам принять участие в престижном конкурсе «USTEM Robotics» в США. Авторские работы в рамках проекта «Тәлімгер», которому Фонд оказал поддержку, легли в основу учебной программы, учебников и учебно-методических книг по предмету «Основы предпринимательства и бизнеса», преподаваемого в 10-11 классах казахстанских школ и колледжей.

Помимо помощи школьникам, учащимся колледжей и студентам Фонд считает важным внести свой вклад в повышение квалификации педагогов, совершенствование их знаний и навыков, поскольку именно они являются проводниками знаний будущих поколений казахстанцев. При поддержке Фонда «Халык» в южной столице был организован ежегодный городской конкурс педагогов «Almaty Digital Ustaz».

Важной инициативой стал реализуемый проект по обучению основам финансовой грамотности преподавателей из восьми областей Казахстана, что должно оказать существенное влияние на воспитание финансовой грамотности и предпринимательского мышления у нового поколения граждан страны.

Необходимую помощь Фонд «Халык» оказывает и тем, кто особенно остро в ней нуждается. В рамках социальной защиты населения активно проводится

работа по поддержке детей, оставшихся без родителей, детей и взрослых из социально уязвимых слоев населения, людей с ограниченными возможностями, а также обеспечению нуждающихся социальным жильем, строительству социально важных объектов, таких как детские сады, детские площадки и физкультурно-оздоровительные комплексы.

В копилку добрых дел Фонда «Халык» можно добавить оказание помощи детскому спорту, куда относится поддержка в развитии детского футбола и карате в нашей стране. Жизненно важную помощь Благотворительный фонд «Халык» оказал нашим соотечественникам во время недавней пандемии COVID-19. Тогда, в разгар тяжелой борьбы с коронавирусной инфекцией Фонд выделил свыше 11 миллиардов тенге на приобретение необходимого медицинского оборудования и дорогостоящих медицинских препаратов, автомобилей скорой медицинской помощи и средств защиты, адресную материальную помощь социально уязвимым слоям населения и денежные выплаты медицинским работникам.

В 2023 году наряду с другими проектами, нацеленными на повышение благосостояния казахстанских граждан Фонд решил уделить особое внимание науке, поскольку она является частью общественной культуры, а уровень ее развития определяет уровень развития государства.

Поддержка Фондом выпуска журналов Национальной Академии наук Республики Казахстан, которые входят в международные фонды Scopus и Wos и в которых публикуются статьи отечественных ученых, докторантов и магистрантов, а также научных сотрудников высших учебных заведений и научно-исследовательских институтов нашей страны является не менее значимым вкладом Фонда в развитие казахстанского общества.

**С уважением,
Благотворительный Фонд «Халык»!**

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TECTONICS OF THE ZHAZGURLINSKY DEPRESSION OF SOUTHERN MANGYSHLAK

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Abstract. Geographically, the territory under consideration is located in the central part of the Mangyshlak Peninsula, and tectonically within the Zhazgurlinsky depression and the Large Mangyshlak flexure, complicating the central side of the South Mangyshlak trough. In the 50–70 years of the last century, seismic surveys were carried out on the territory of Southern Mangyshlak using the methods of the RWM (reflected wave method) and KMPV (correlations.the method of refracted waves). In this article, the deposits of the upper, Middle and to a lesser extent Jurassic deposits of the Zhazgurlinsky depression are promising. The territory in question belongs to the semi-desert zone and is a slightly undulating flat terrain inclined to the west, that is, towards the Caspian Sea. The western part of the Zhazgurlinsky depression is characterized by a fairly high degree of geological and geophysical study. As a result of seismic studies of the CDPM (Common depth point method) S.P. 1/76–77 of the MOGF (Mangyshlakoilgeophysics) trust, the presence of the Bakand uplift was established,

which, according to the V2 reflecting horizon in the Triassic, is a half-circle adjacent to the fault of the sublatitudinal strike. Thus, it should be noted that the western part of the Bolshaya Mangyshlak flexure was studied by seismic exploration to a greater extent than its eastern part, and the use of the latest seismic exploration methods at that time, such as RWM, played a significant role in identifying local structures at great depth.

Keywords: oil and gas content, deposit, depression, geoblock, seismic

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ОҢТҮСТІК МАҢҒЫШЛАҚТЫҢ ЖАЗҒЫРЛЫ ОЙПАТЫНЫҢ ТЕКТНИКАСЫ

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Аннотация. Географиялық тұрғыдан қарастырылатын аумақ Маңғышлақ түбегінің орталық бөлігінде, ал тектоникалық жағынан Жазғырлы депрессия мен Оңтүстік Маңғышлақ иілуінің орталық бортын қиындататын үлкен Маңғышлақ флексурасы шегінде орналасқан. Өткен ғасырдың 50–70 жылдарында Оңтүстік Маңғышлақ аумағында сейсмикалық зерттеулер ШТӘ (шағылысқан толқындар әдісі) және КСТӘ (корреляц сынған толқындар әдісі) әдістерімен өңірлік сипатта жүргізілді. Бұл мақалада Жазғырлы депрессиясының жоғарғы, орта және аз дәрежеде юра шөгінділері перспективалы болып табылады. Қарастырылып отырған аумақ шөлейт аймаққа жатады және батысқа қарай, яғни Каспий теңізіне қарай қисайған сәл толқынды жазық жер. Жазғырлы де-

прессиясының батыс бөлігі геологиялық-геофизикалық зерттелудің жоғары деңгейімен сипатталады. МОГТ сейсмикалық зерттеулерінің нәтижесінде (жалпы тереңдік нүктесі әдісі), С.П. 1/76–77 МГФ тресті (Маңғышлақмұнайгеофизика) триастағы V2 шағылысатын көкжиек бойынша суб-ендік кеңею ақауларына іргелес жартылай суағар болып табылатын Баканд көтерілуінің болуы анықталды. Осылайша, үлкен Маңғышлақ флексурасының батыс бөлігін сейсмикалық барлау оның шығыс бөлігіне қарағанда көбірек зерттегенін және сол кезде сейсмикалық барлаудың ең жаңа әдістерін ЖТНӘ (жалпы тереңдік нүктесінің әдісі) ретінде қолданғаны жергілікті құрылымдарды үлкен тереңдікте анықтауда маңызды рөл атқарғанын атап өткен жөн.

Түйін сөздер: мұнай-газ, кен орны, депрессия, геоблок, сейсмика

Мүдделер қақтығысы: Авторлар осы мақалада мүдделер қақтығысы жоқ деп мәлімдемейді.

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ТЕКТОНИКА ЖАЗГУРЛИНСКОЙ ДЕПРЕССИИ ЮЖНОГО МАНГЫШЛАКА

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Аннотация. Географически рассматриваемая территория находится в центральной части полуострова Мангышлак, а тектонически — в пределах Жазгурлинской депрессии и Большой Мангышлакской флексуры, осложняющей центральный борт Южно-Мангышлакского прогиба. В 50–70 годах прошлого столетия на территории Южного Мангышлака сейсмические исследования регионального характера проводились методами МОВ (метод отражённых волн) и КМПВ (корреляционный метод преломлённых волн). В данной статье представлены

результаты исследований перспективных отложений верхнего, среднего и в меньшей степени юрских отложений Жазгурлинской депрессии. Западная часть Жазгурлинской депрессии характеризуется достаточно высокой степенью геолого-геофизической изученности. В результате сейсмических исследований МОГТ (метод общей глубинной точки), с.п. 1/76–77 треста МНГФ (Мангышлакнефтегеофизика) установлено наличие Бакандского поднятия, которое по V_2 отражающему горизонту в триасе представляет собой полусвод, примыкающий к разлому субширотного простирания. Таким образом, следует отметить, что западная часть Большой Мангышлакской флексуры была изучена сейсморазведкой в большей степени, чем ее восточная часть и применение в то время новейших методов сейсморазведки как МОГТ, сыграло значительную роль в выявлении локальных структур на большой глубине.

Ключевые слова: нефтегазоносность, залежь, депрессия, геоблок, сейсмика
Конфликт интересов: авторы заявляют об отсутствии конфликта интересов.

Introduction

The Zhazgurli depression occupies the entire eastern part of the Southern -Mangyshlak geoblock and is one of the most important promising oil and gas-bearing areas of the eastern side of the Middle Caspian Depression (Hibasov B.B, 2013). The area under consideration is tectonically confined to the central part of the South Mangyshlak trough and is located in the zone of articulation of various tectonic elements of the II order, as indicated in my previous work by (Merekeyeva, Kozhakhmet, 2023). In the northwest it borders with the Karagiinsky saddle, in the south - with the Aksu-Kendyrlynsky step, in the east with the Karynzhyark saddle, from the northwest to the northeast with the Zhetybai-Uzen and Kokumbai steps, in the southwest - with the Peschanomyssko-Shell zone.

The territory in question belongs to the semi-desert zone and is a slightly undulating flat terrain inclined to the west, that is, towards the Caspian Sea.

On the Southern Mangyshlak (Krupin, Rykus, 2012), three extended geoblocks are distinguished along the surface of the foundation: North-Mangyshlak, South-Mangyshlak and Karabogaz, having a west-northwest orientation.

The Zhazgurlynsky depression and the Large Mangyshlak flexure occupy the entire eastern part of the Southern - Mangyshlak geoblock, in the center of which the roof of the foundation is submerged up to 9.5 km. In the north-western part of the Zhazgurli depression, the Bayram mulda is isolated by an isohypse of -6500 m. (Zakrevsky, Kundin, 2016).

Research materials and methods

The area under consideration is confined to the central part of the South Mangyshlak trough and is located in the zone of articulation of various tectonic elements of the II order. In the northwest it borders with the Karagiinsky saddle, from northwest to northeast with the Zhetybai-Uzen and Kokumbai steps, in the southwest with the Peschanomyssk-Rakushechnaya zone, in the south with the Aksu-Kendyrly step, in the east with the Karynzhyark saddle (Figure 1).



Figure 1 - Tectonic map of the Zhazgurlinsky depression of Southern Mangyshlak

На Южном Мангышлаке установлено, что по поверхности фундамента выделяются три протяженных геоблока (Северо-Мангышлакский, Южно-Мангышлакский и Карабогазский), имеющих западно-северо-западную ориентировку. Deep (Jun Qu et al, 2023) exploration wells have been drilled on the work area in different years (Wang et al., 2023).

The Zhazgurlinsky depression and the Large Mangyshlak flexure occupy the entire eastern part of the South Mangyshlak geoblock, in the center of which the roof of the foundation is immersed up to 9.5 km. In the northwestern part of the Zhazgurlinsky depression, the Bayram mulda is isolated by an isohypse of -6500 m. Within the limits of the Zhazgurlinsky depression and the Bolshaya Mangyshlak flexure, seismic exploration of the CDPM 2D (common depth

point method) along reflecting horizons in the platform cover and transition complex revealed a number of local uplifts, a brief description of which is given below.

In general, the reference reflecting horizons in the Jurassic-Paleogene complex are everywhere and unambiguously traced in the territory under consideration: I (Oligocene sole), II (Senon-Turon sole), III (Goteriv sole) and IV₁ (Oxford reference point), which are characterized by dynamic expressiveness and smooth behavior on time sections. The reflecting horizon IV₂ (the reference point in the bayos) is less confidently monitored. Reflections from the V₁ horizon (the sole of the Jurassic) often have low dynamic expressiveness, but in general, they are traced with a sufficient degree of reliability over the area. The horizon stands out most clearly and dynamically within the Kokumbai stage, in the zones of absence of upper-Middle Triassic sediments. Its unambiguous traceability worsens in the Zhazgurlinsky depression and, partially, in the Bolshaya Mangyshlak flexure, where the main criterion for horizon identification are indirect signs: erosive disagreement with the underlying horizons and its position on time sections.

The wave field of the Triassic sediment complex is complicated, which is primarily due to the dislocation of rocks, their gradual release under the pre-Jurassic erosion and the residual background of regular and irregular interference waves.

Nevertheless, almost all reflections of the V horizon group are mainly characterized by high dynamic expressiveness and reliable traceability. Their identified and phase correlation does not cause difficulties, although in some areas characterized by a particularly complex geological structure (disjunctive, block tectonics), a share of conditionality is not excluded. Such sites include the northern side of the Zhazgurlinsky depression and its junctions with the Zhetybai-Uzen and Kokumbai steps (Big Mangyshlak flexura).

Reflecting horizons V₁², V₂^{II}, V₂ in the Upper-Middle Triassic sediments can be traced in these tectonic zones.

The Zhazgurlinsky depression is divided by a narrow sublatitudinal Bayram-Kurganbai shaft into Western-Eastern-Zhazgurlinsky sections.

All drilled uplifts are located within the western part of the depression, their structural structure is briefly described below.

Lifting of the Zharty based on the results of materials from seismic batches 3/78, 3/78–79 according to V3 reflecting horizon (blurred surface of the Lower Triassic) The structure was a two-arched block anticline fold of latitudinal strike. The dimensions of the ascent along the isohypse minus 4650 m were 7.0 * 2.5 km, the amplitude was 80 m. From the north-west and from the south, the uplift is complicated by tectonic disturbances. Drilling of two wells (№.1, 2) revealed a discrepancy and served as a reason for reinterpretation of seismic material.

Based on the results of reinterpretation, new constructions were made, according to which the structure of the Horizon along the V3 reflecting horizon is a block complicated by two brachianticlinal uplifts – western and eastern. The western elevation is represented by a semicircle, a limited violation. According to the isohypse minus 4450 m, the dimensions are 4.1 * 0.8 km, the amplitude is 90 m. The drilled well No. 2 is confined to its eastern pericline. The eastern elevation in the contour of the isohypse minus 4,500 m has dimensions of 4.5 * 1.3 km, amplitude-60 m (Figure 2).

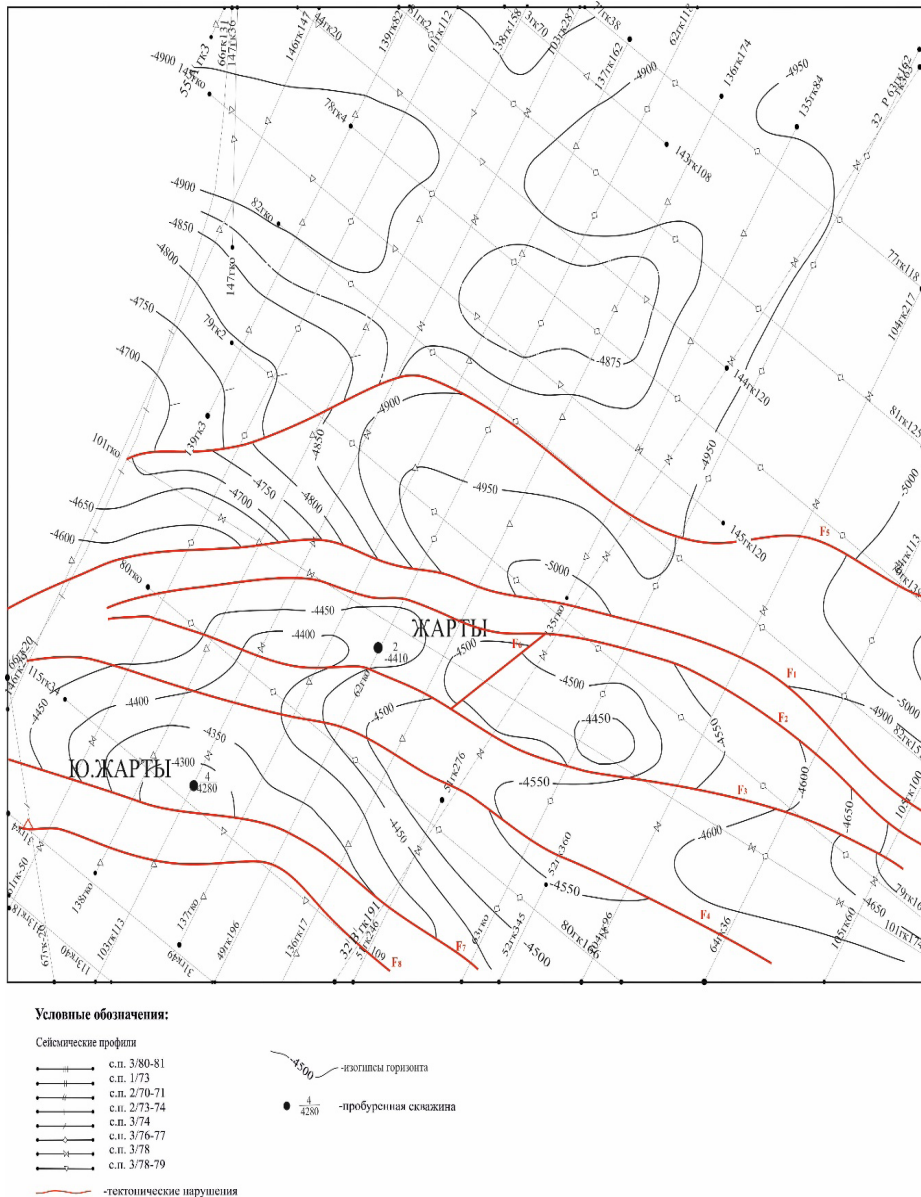


Figure 2 - The squares. Structural map of the reflecting horizon V_3

Based on the results of reinterpretation, new constructions were made, according to which the Zharty structure along the V_3 reflecting horizon is a block complicated by two brachianticlinal uplifts – western and eastern. The western elevation is represented by a semicircle, a limited violation. According to the isohypse minus 4450 m, the dimensions are 4.1 * 0.8 km, the amplitude is 90 m. The drilled well No. 2 is confined to its eastern pericline. The eastern elevation in the contour of the isohypse minus 4,500 m has dimensions of 4.5 * 1.3 km, amplitude-60 m (Figure 2).

The arch of the structure is shifted relative to the original drawing to the east and the drilled well No. 1 is confined to the western pericline part of the fold. Prospecting well No. 3

To the east of the Mahat there is a second Coastal structure, complicated by two arches, contoured with isohypses of the same name. The central uplift – Pribrezhnoye proper – is an anticline of sublatitudinal strike, measuring 8*3 km in an isohypse contour of -4750 m and an amplitude of more than 40 m. The northern wing of the structure is complicated by a violation of the eastern strike. The southern uplift has a dome-shaped shape, its dimensions in the contour of the isohypse minus 4750 are about 2.2 * 1.5 km, and the amplitude is 20 m.

The Kumak structure along the V_2^{II} reflecting horizon (the roof of the carbonate pack A in the middle Triassic) is an anticlinal fold, the eastern wing of which is divided by a series of tectonic disturbances into a number of blocks gradually sinking in a southeasterly direction (Brandano et al., 2021). The northwestern raised block of the structure has a size of 7.5*3.0 km, an amplitude of 50 m along the isohypse minus 4450 m (Figure 4).

Along the V_1 reflecting horizon (sole J_1), the uplift is closed by a single isohypse of -3950 m, measuring 3.7 x 2.5 km, amplitude -25 m, tectonic disturbances are not observed.

The Demal structure along the V_2^{II} reflecting horizon (the roof of the carbonate pack A in the Middle Triassic) is an anticlinal fold bounded from the southeast by a tectonic disturbance. According to the isohypse minus 4600 m, the elevation dimensions are 9.0 * 6.9 km, the amplitude is 125 m. According to the V_1 reflecting horizon (sole J_1), the structure is closed by an isohypse of 3975 m, measuring 5x6 km, there are no tectonic disturbances.

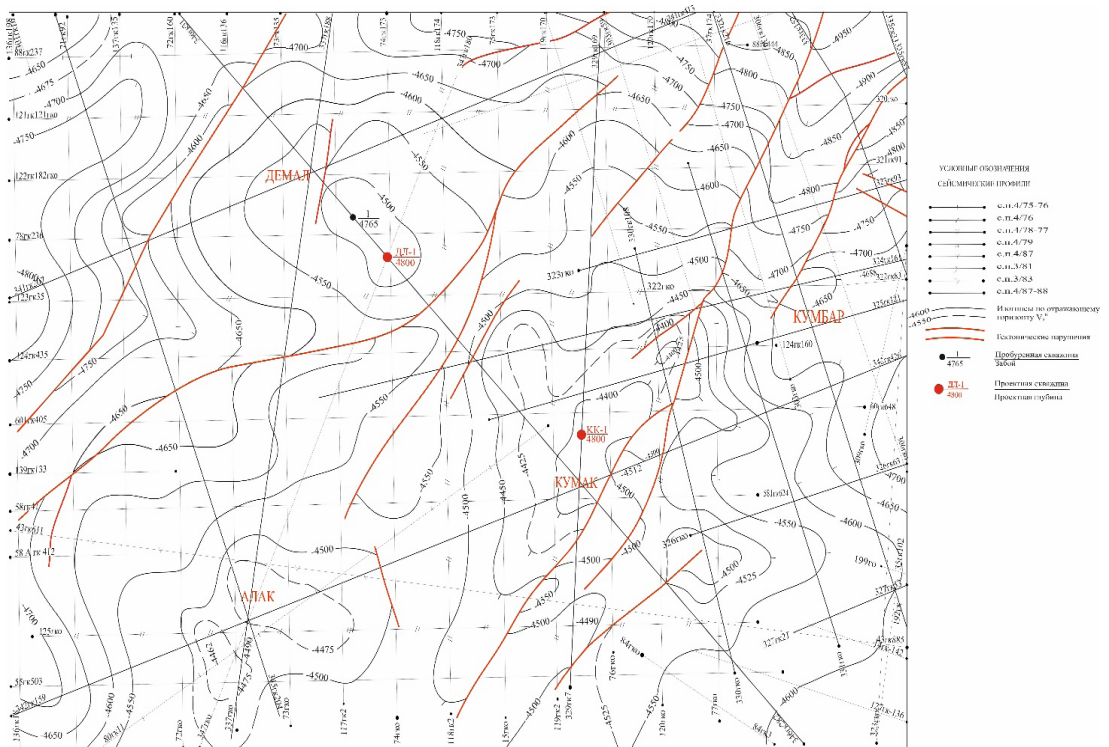


Figure 4 - Demal, Kumak, Kumbar, Alak. Structural map of the reflecting horizon V_2^{II}

The Kumbar area along the V_2^{II} reflecting horizon (the roof of the carbonate pack A in the Middle Triassic) is represented by two elevations. The western elevation along the closed isohypse minus 4650 m has dimensions of 1.3*1.0 km with an amplitude of 15 m, the eastern

one along the isohypse minus 4675 m has dimensions of 1.7*0.9 km with an amplitude of 15 m. The western elevation is shielded by a discontinuous disturbance (Figure 4).

According to the V_1 reflecting horizon (the sole of the Jurassic strata), only the western uplift, the Kumbar structure, with dimensions of 2.0*1.3 km and an amplitude of 10 m within the boundaries of a closed isohypse minus 4025 m, remains.

Within the considered area, two reflecting horizons IV_{bt}^I and IV_{bt}^{II} are traced in the Middle Jurassic thickness, characterizing the geological structure of the surface of the proposed bar body within the Batsky tier of the Middle Jurassic and the exposed surface of the subbar deposits of the Middle Jurassic, respectively

Along the IV_{bt}^I horizon, the boron body is a terrigenous reservoir with two arm-shaped branches in the northeast and southeast directions. The size of the object is 15*4 km.

The highest part of the non-anticlinal trap is contoured with an isohypse of minus 2800 m and has dimensions of 5.5*2.5 km with an amplitude of 50 m. In general, the height of the trap reaches 200 m.

In the western direction, the roof surface of the bar sinks sharply to minus 2,900 m. To the northeast and southeast, the dive is calmer and at the boundaries of the object tracking reaches minus 3000 m. The end of the southeastern branch is complicated by a small arch measuring 1.7*1.0 km with an amplitude of 20 m within the boundaries of the isohypse minus 2900 m.

The exposed subbar surface has a calm occurrence. The most elevated part is mapped in the south (abs. mark 2,880 m), then there is a gradual dip to the northeast and southeast, where the marks reach minus 3,000 m.

The degree of activity of the tectonic regime in the Jurassic epoch is significantly reduced in comparison with the Triassic (Yang et al., 2019), for this reason, no disjunctive disturbances were detected on the intra-Jurassic surfaces.

During testing in the column, a weak inflow of water and gas was obtained from the aalen deposits. According to the results of drilling these wells in the Kurganbai area, the presence of an anticline structure (Ramirez-Perez et al., 2023) was confirmed for Upper Jurassic sediments with dimensions of 9.5x3.5 km and an amplitude of up to 70 m along a closed isohypse -2920 m.

The Bayram-Kyzyladyr uplift is located in the central part of the Zhazgurli depression. Tectonically, the studied area is confined to the central part of the South Mangyshlak trough (Kozhagulova et al., 2023; Imashev et al., 2014: 286–289). On structural maps along the reflecting horizons V_3 , V_2-2 represents a large shaft (Bayram-Kyzyladyr), which plunges from the southwest to the northeast. The structure throughout its entire length is complicated by a large number of tectonic disturbances of various lengths, orientations and amplitudes.

Along the V_2 reflecting horizon (the sole of the upper Triassic) retains the structural shape of the underlying volcanogenic-carbonate complex (Brandano et al., 2021), is elongated in the sublatitudinal direction, consists of two parts, the elevated western part of the structure, along a closed isohypse of -4650 m has dimensions of 5.2 * 4.5 km, amplitude -160 m. The eastern lowered part has the shape of a semicircle, along the adjacent isohypse – 4750 m, dimensions - 3.4 * 3.2 km, amplitude -50 m.

Wells No. 3, having opened 60 m of Lower Jurassic deposits, was liquidated for geological reasons, since, according to well-log data (Wood, 2020), there were no productive layers in the opened Jurassic-Cretaceous section.

In order to assess the oil and gas potential (Tlepieva et al., 2021; Abirov et al., 2022: 159–173)

of the Triassic deposits of the arched part of the eastern block (half-water) of the Bayram-Kyzyladyr uplift, a search well 11 was drilled, and a search well 10 was drilled in the central part of the area. The design depth of both wells is 4900 m, the design horizon is the middle Triassic. Upon reaching depths of 3850 m, the wells were stopped by drilling in the lower part of the Lower Jurassic sediments and mothballed due to the lack of chemicals, weighting and casing pipes.

Discussion

Tectonically, the area under consideration is confined to the central part of the South Mangyshlak trough and is located in the zone of articulation of various tectonic elements of the II order. In the north-west it borders with the Karagiinskaya saddle, from northwest to northeast with the Zhetybai-Uzenskaya and Kokumbai steps, in the southwest with the Peschanomyssk-Rakushechnaya zone, in the south with the Aksu-Kendyrli step, in the east with the Karynzhyryk saddle

Almost all reflections of the V horizon group are mainly characterized by high dynamic expressiveness and reliable traceability. Their identified and phase correlation does not cause difficulties, although in some areas characterized by a particularly complex geological structure (disjunctive, block tectonics), a share of conditionality is not excluded. Such sites include the northern side of the Zhazgurlinsky depression and its junctions with the Zhetybai-Uzen and Kokumbai steps (Big Mangyshlak flexura).

Based on the analysis and discussion of the results obtained, the raising of the Kurganbai complicates the northeastern part of the Bayram - Kurganbai shaft, along the reflecting horizons V3 and V2II has a block structure.

On the Kurganbai structure, wave field analysis was applied for signs of fracturing. This information should be taken into account when choosing a drilling point, however, at this stage, reliable well data with a modern well-log complex should be obtained. Only after the availability of modern well-log data, the Upper Jurassic carbonates complex can be studied by the wave features of seismic exploration. A possible tool for studying fracturing from seismic data will be the study of anisotropy from azimuthal data, which was not implemented within the framework of this work, since such an analysis is a completely different branch of the use of seismic data. In any case, the first step is to obtain up-to-date well-log data.

The oil and gas complex of the Lower Jurassic period was uncovered at several sites, the uncovered complex could potentially be a complex of embedded valleys that could exist on the wings or arches of existing structures. Anomalies have also been identified in the Lower Jurassic complex, which are recommended for drilling.

The risks of the Triassic oil and gas complex are associated with the central part of the Mangyshlak basin as a whole, i.e. with the structures we are studying, since the northern and southern areas have deposits that are under development in the interval of the Triassic period. The qualitative characteristic of the reservoir is the main risk of the oil and gas complex in the studied part of the basin. The expected roof of the Triassic period is at a depth of 4000 m or more. Carbonates required karst to develop porosity, which is the result of erosion.

Conclusions

According to the results of the performed studies, in addition to the identified anticlinal uplifts, non-anticlinal traps may also be promising.

The use of common depth point methods allowed us to obtain detailed data on the structure of productive horizons, which is an important factor in planning exploratory drilling.

The search for oil and gas with an assessment of the probable oil and gas potential of

non-anticlinal traps in basins with a high degree of study is quite a promising direction. For the Mangyshlak basin, the implementation of this direction is most appropriate for the carbonate Kimeridzh-Titons and terrigenous Bayos complexes. (Merekeyeva et al., 2023).

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