

The Ledger

Land & energy, of record.

No. 003 Book 1 • Page 3

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TOWNSHIP 26 SOUTH • RANGE 35 EAST • N.M.P.M.

Sections 2, 16, 32 and 36 of every township: granted to New Mexico for schools (Enabling Act, 1910)

Section 20 - where the first well across the state line begins

Where the Line Runs

The state line a survey marked in the wrong place in 1859 and the law kept there, the Gulf sea floor the United States leases on its own terms, and the salt water that comes up with Permian oil.

I • CHAIN OF TITLE

The line on the ground

A corner monument set in 1859 with no longitude observed, a strip 310 miles long, and the state line an examiner still works to.

II • OF RECORD

Who owns the sea floor

\$82,689,756 on 59 Gulf blocks at 12.5 percent from one lessor, and a Permian that paid 22 to 67 times as much an acre.

III • FUTURE INTERESTS

Three barrels of water

Texas gave produced water to the lessee in 2025, New Mexico banned its discharge through 2030, and what the water is worth is still open.



A third entry. Section I follows the New Mexico and Texas line from the act of 1850 to the monuments that still mark it, two to four miles from where the act put it. Section II reads the Gulf lease sale of August 12, 2026 for who owns the sea floor. Section III follows the Permian's produced water to the courts.

I • CHAIN OF TITLE LOOKING BACK

The line on the ground

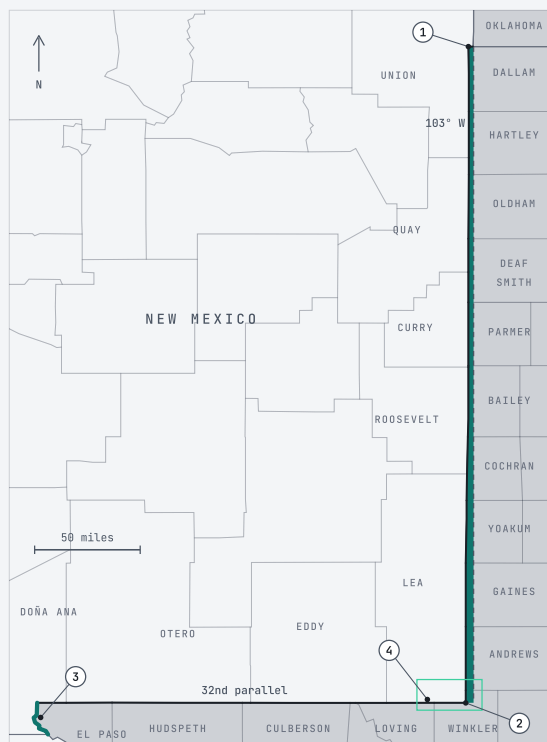
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SECTION I
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THE LEDGER • NO. 003
ARCHIVE LEDGER, INC.

In 1850 Congress drew the western line of Texas on the 103rd meridian, and in 1859 a federal survey marked it on the ground two to four miles to the west. Congress and Texas made the marked line the law, and it is the line an examiner works to and a horizontal well now crosses.

On May 22, 1859, the boundary survey under John H. Clark, the United States commissioner, erected a monument to mark the intersection of the 32nd parallel with the 103rd meridian west of Greenwich [1]. It was the corner Congress had drawn on paper nine years before, where the western line of Texas turned north. Its latitude had been observed from twenty-seven pairs of stars over five nights. Its longitude had not. Marcus Baker of the Geological Survey, rebuilding the work from

Clark's field notes in 1902, found that "no observations for longitude appear to have been made at this point"; the meridian's place there rested on a position fixed at Frontera and on rough measurements across about 225 miles, most of them made with a chain [2]. The monument, re-set by the surveyors of both states in 2015, stands 3.84 miles west of the true meridian [1], [3]. It is the southeast corner of New Mexico all the same, and the reasons belong to the law more than to surveying.





Geometry: U.S. Census cartographic boundaries via us-atlas; the 103rd meridian drawn at its exact coordinate; Section 20 from the BLM PLSS sections layer. Offsets: Kidder (1903) and USGS Professional Paper 909 (1976). Well location approximate.

the New Mexico and Texas line, drawn to scale

- The strip between the marked line and the 103rd meridian
- The state line of record: Clark's line, re-marked in 1911
- 103° W, the meridian the act of 1850 named
- The Rio Grande sector decided in New Mexico v. Texas (1927)

- ① **Northwest corner of Texas, 36°30' N**
Clark's line 2.23 to 2.29 miles west of the meridian by the surveys of 1882, 1900 and 1903, and about 2.28 from the Geological Survey's coordinates.
- ② **Southeast corner of New Mexico**
Clark's corner monument, set May 22, 1859; concrete monument of 1911; re-set by the surveyors of both states on March 14, 2015. 3.84 miles west of the meridian.
- ③ **The Rio Grande sector**
About fifteen air-miles from the 32nd parallel south to 31°47' N; the only stretch the Supreme Court decided in 1927. Gannett's line confirmed March 23, 1931.
- ④ **El Campeon Fed Com 404H**
Surface location in Section 20, T26S R35E, Lea County; bottom hole in Section 25, Block C24, Loving County, Texas. The first well across the line (OCD Case 21872, 2021).

detail at the southeast corner of New Mexico, about 7 times the map scale

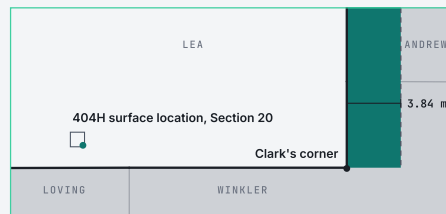


FIG. 1 The New Mexico and Texas line drawn to scale from Census boundary geometry, with the border counties on both sides. The accent band is the strip between Clark's marked line and the true 103rd meridian, a sliver at this scale; the inset enlarges the southeast corner of New Mexico, where the first well across the line begins [1], [3], [4].

The line had been drawn in Washington, in one of the measures of the Compromise of 1850. The act of September 9, 1850 carried the boundary of Texas along 36°30' "due west to the meridian of one hundred and three degrees west from Greenwich," then due south to the 32nd parallel and west along it to the Rio Grande, and offered Texas \$10 million in five percent stock redeemable in fourteen years [5], [6]. Texas gave up "almost one-third of its territory" [6]. Thomas Hart Benton had argued for the 102nd meridian instead, holding up a Texas Land Office map that, he said, showed no Texas land titles beyond it [6], [7]. Senator James Alfred Pearce of Maryland wrote the bill that passed [8], [9]. Governor Peter H. Bell signed Texas's

acceptance on November 25, and President Millard Fillmore proclaimed the act in force on December 13, 1850 [6], [9], [10].

Congress paid for the marking eight years later: the act of June 5, 1858 appropriated \$80,000 to run the line from the Rio Grande to the Red River, and Interior Secretary Jacob Thompson appointed Clark [1], [11], [12]. His surveyor, John E. Weyss, ran the lines [13]. The party reached the initial point on the Rio Grande on January 2, 1859, began the parallel on January 26 from a base line of 4,750 feet, and had carried it to the Pecos by April 15. By the time it set the corner it had traveled 1,248 miles to survey 211.4246 and had set thirty-two monuments [1].



North of the corner the water ran out. Baker's reconstruction has the party moving by pack-mule train on May 24 and 25, 1859 to latitude $32^{\circ}20'45''$, where "further continuation of the line was abandoned": twenty-four miles, three monuments. That autumn it worked from the other end, running south from the corner on $36^{\circ}30'$ between August 23 and September 20, 1859 and setting its last monument near $34^{\circ}14'$: 156 miles, twenty-three monuments. Of the meridian's 310 miles, 180 had been surveyed and 130 had not [2]. The northern end carried an error of its own. Its longitude depended on a monument Col. Joseph E. Johnston had set on the 37th parallel in 1857; a review of Clark's computations in the Washington office found an error of 11,582 feet in it, and once that was fixed "the corrected point was still more than two miles too far west" [14]. In January 1862, with the Civil War under way, the Secretary of the Interior ordered the commission to terminate at once [14].

The error surfaced in 1882, after Texas had surveyed the land. That year the syndicate that took 3,050,000 acres of the Capitol Reservation in payment for the state capitol inspected its ground, and its surveyor, W. S. Mabry, running the fence, found Clark's northwest corner 2.23 miles west of the meridian; Levi S. Preston's retracement of 1900 made it 2.24 [1]. Arthur D. Kidder of the General Land Office retraced the line in 1903 and reported 2.29 miles at the northwest corner, holding for about 172 miles south, and 3.84 miles at the southeast corner of New Mexico: "perhaps the most incorrect of any land line in the United States" [1], [14]. The Geological Survey's coordinates for the two ends of the marked line, $103^{\circ}02'28.04''$ and $103^{\circ}03'55.02''$ west, reproduce the measurements: about 2.28 miles at the north end and 3.84 at the south, computed by *The Ledger* [3].



mark the Clark line, and from the Joint Resolution of February 16, 1911. It called the 1891 confirmations "a conclusive location and settlement of said boundary lines," ordered Clark's lines re-marked, declared that they remain the true boundary, and made of no effect any provision of New Mexico's constitution tending to change them [11], [18]. The statehood resolution of August 21, 1911 admitted New Mexico subject to those terms, and Taft proclaimed the admission complete on January 6, 1912 [22], [23].

The commissioners were Francis M. Cockrell for the United States, commissioned on March 9, 1911 at \$20 a day, and Sam R. Scott for Texas [24], [25]. Their instructions had the survey "initiated at the Clark monument marking the southeast corner of New Mexico," and on April 18, 1911 they replaced Clark's iron-pipe mark there with a concrete monument lettered

CLARK BOUNDARY 1859 [1], [24]. Clark's other monuments were re-marked where they stood; the commission was sent to re-mark a line, not to find a meridian [18], [24]. The work was finished on September 26, 1911, at \$581.13 more than the \$20,000 appropriated [1], [24], [25].

MARGINAL NOTE

Field notes in triplicate

The 1911 commission set concrete monuments with brass tablets on Clark's sites and iron posts with brass caps at the mile corners, and it wrote its field notes and plats in triplicate: the original for the General Land Office in Washington, the duplicate for the Texas General Land Office at Austin, the triplicate for the United States surveyor general at Santa Fe [24]. By Executive Order No. 1716 of February 25, 1913, a copy went into the permanent archives of the General Land Office as a perpetual memorial [26]. The same line can be retraced from three archives.





FIG. 3 From paper to monument, 1850 to 2022: the act, the survey, the confirmations of 1891 and 1911, statehood, the 1927 case over the Rio Grande sector and its relief act, and the modern record. Dates from the statutes, the Supreme Court and the surveying record [1], [5], [12], [16], [18], [23], [26], [27], [28].

The Supreme Court case usually told as the end of this story concerns the other end of the line. *New Mexico v. Texas*, brought in 1913, went to a Special Master who received 2,150 pages of printed briefs, and was decided on December 5, 1927 in an opinion by Justice Edward T. Sanford; the dispute was roughly fifteen air-miles of the Rio Grande valley, from the 32nd parallel south to 31°47' [26]. The Court found for Texas on the "tacit and long-continued acquiescence of the United States" in Texas surveys and patents while New Mexico was a territory, and because the 1911 resolutions bound New Mexico to the commission's re-established monument: Clark's Monument No. 1 on the river, which the commission had displaced 216.5 feet. The opinion says nothing about the meridian error and names no acreage [26].

The decree of April 9, 1928 fixed that stretch at the middle of the channel of the Rio Grande as it existed on September 9, 1850 and appointed Samuel S. Gannett to mark it; the Court confirmed his line on March 23, 1931 [3], [29]. Title had to follow. The act of June 16, 1934 let persons in actual and bona fide possession on April 9, 1928, claiming under a Texas patent, take a United States patent at \$1.25 an acre to land the decree had placed in New Mexico, and Texas had passed a mirror-image statute for its own side on June 6, 1933 [27], [30]. Both acts belong to the river sector. Neither touches the strip along the meridian.

Texas law states the result in the survey's own terms. Section 11.015 of the Natural Resources Code fixes the boundary on the line "as determined and fixed by John H. Clark" in 1859 and 1860 and retraced to completion on



September 26, 1911, and it builds a bridge in the record: deeds certified by the custodian of records in the New Mexico county where the land lies are admissible in Texas suits, and a Texas county clerk may file the certified copies as the originals could have been filed [25]. New Mexico tried once more. Senate Bill 815 of 2003 appropriated \$100,000 to the Attorney General to sue Texas for the return of 603,485 acres and compensation for the mineral rights, royalties, taxes and grazing privileges that went with them [16]. The Attorney General's office judged the litigation "not likely to be successful," the committee substitute carried no money, and no suit was filed [31].

Since 2022 the line has also had to divide oil. A Memorandum of Agreement signed on September 1 and 2, 2022 by the New Mexico Oil Conservation Division and the Railroad Commission of Texas covers horizontal wells that produce in both states from one wellbore, and allocates their production "on a proportional basis considering all relevant factors," among them the length of wellbore and the mineral acreage assigned in each state [28], [32]. The first such well, Titus Oil & Gas Production's El Campeon Fed Com 404H (Case No. 21872, filed April 6, 2021), has its surface location in Section 20, Township 26 South, Range 35 East, Lea County, and its bottom hole in Section 25, Block C24, Public School Land Survey, Abstract 701, Loving County, Texas [4], [33]. One wellbore carries two descriptions in two systems of land, and Clark's line runs between them.

None of it moved a monument. From Union County to Lea County the line with Texas is Clark's, as the 1911 commission re-marked it and as Congress, Texas and the terms of statehood confirmed it; the meridian named in the act of 1850 and in New Mexico's constitution lies two to four miles east [18], [22]. A State Bar of New

Mexico historian once told readers to "stop at the state line to compare your GPS reading of the meridian" with the constitution's legal description [34]. An examiner makes the same comparison on paper, and the rule is short: a coordinate for 103 degrees west is not the state line; the monuments are [18], [25]. When a description on a border tract calls for the state line, does it mean Clark's monuments, the meridian, or a number? The meridian of 1850 is on paper. The state line is on the ground.



Who owns the sea floor

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SECTION II

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On August 12, 2026 the United States leased Gulf sea floor on its own terms: \$82,689,756 in high bids on 59 blocks at a 12.5 percent royalty. In the same weeks federal and state sales in the Permian paid 22 to 67 times as much an acre, and the difference begins with who owns the ground.

On August 12, 2026 the Bureau of Ocean Energy Management (BOEM), now part of the Marine Minerals Administration, held Gulf of America Lease Sale BBG3, the third of at least thirty sales Congress ordered in 2025. It took \$82,689,756 in high bids from sixteen companies on 59 of the 15,185 blocks offered [35], [36]. The blocks bid on covered 330,150.70 acres, an average of \$250.46 for every acre bid on, and 52 of the 59 drew a single bid [35], [37]. Every lease the sale produces will have the same lessor, the United States; the same royalty, 12.5 percent; and the same printed form [38], [39]. That is the first difference from the Permian, and most of the others follow from it.

The money went to deep water. Blocks in 800 meters or more took 45 of the 59 high bids and \$79,818,183, which is 96.5 percent of the total; shelf blocks under 200 meters took twelve and \$1,670,751; nothing between 200 and 400 meters drew a bid, computed by *The Ledger* [35]. The Final Notice of Sale, published July 8, 2026, had stepped the terms by depth: a minimum bonus of \$25 an acre under 400 meters and \$100 at 400 or deeper, a primary term of five years in water under 800 meters and ten beyond it, and a royalty of 12.5 percent in every depth, “the minimum allowed” by the 2025 statute [39].



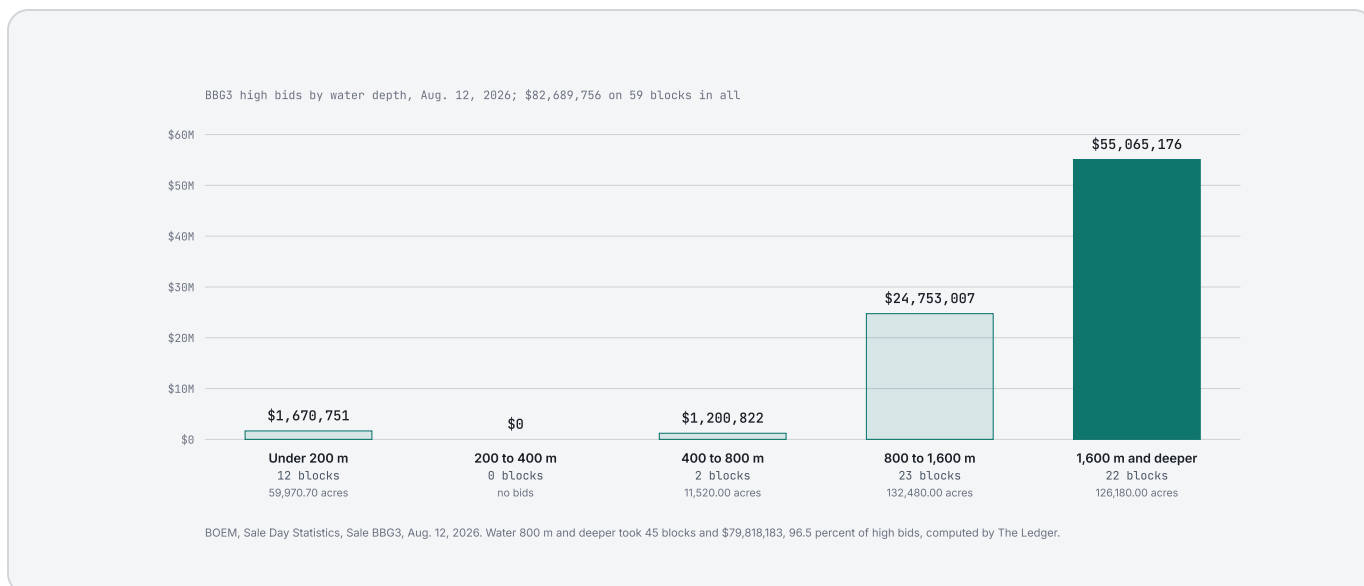


FIG. 4 High bids at Gulf of America Lease Sale BBG3, August 12, 2026, by water depth: \$1,670,751 on 12 blocks under 200 meters, none from 200 to 400, \$1,200,822 on 2 blocks from 400 to 800, \$24,753,007 on 23 from 800 to 1,600, and \$55,065,176 on 22 at 1,600 meters and deeper; \$82,689,756 on 59 blocks in all [35].

Congress set the calendar. Section 50102 of Public Law 119-21, signed July 4, 2025, orders at least thirty region-wide Gulf sales through 2040, two a year from 2026 to 2039, one by March 15 and one after March 15 and no later than August 15, each offering at least 80 million acres or all that is available, at a royalty of not less than 12.5 percent nor more than 16 2/3 percent [40], [41]. The sales run outside the five-year leasing program, whose eleventh edition is still a draft [42], [43]. The next, BBG4, is scheduled for March 2027 [44].

The agency that held the sale was reorganized between the notice and the bidding. On July 10, 2026 the Secretary of the Interior signed Order 3451, forming the Marine Minerals Administration from BOEM, which leases the sea floor, and the Bureau of Safety and Environmental Enforcement (BSEE), which regulates the wells on it. The order provides that “All existing regulations and standards applicable to BOEM and BSEE remain in full force” and leaves royalty collection where it was [45], [46]. The acceptance sheet of

September 24, 2026 carries the new name; the Data Center and the leasing regulations still carry the old one [47], [48], [49].

Who owns the sea floor was settled between 1947 and 1960, and the answer depends on how far out it lies. The Supreme Court held in 1947 and 1950 that the United States had paramount rights in the marginal sea, first off California and then off Texas [50], [51]. The Submerged Lands Act, approved May 22, 1953, then gave the states title to the lands beneath navigable waters within their boundaries, three geographical miles out, and let a Gulf state’s line run as far as “three marine leagues into the Gulf of Mexico” [52], [53]. The Outer Continental Shelf Lands Act, approved August 7, 1953, declared that the subsoil and seabed beyond appertain to the United States and gave the Secretary the power to lease them [38], [54]. On May 31, 1960 the Court held Texas entitled to three marine leagues, on the strength of its boundary act of December 19, 1836 and its annexation in 1845;



Louisiana, Mississippi and Alabama took three geographical miles, and Florida three leagues on its Gulf coast [55], [56].

MARGINAL NOTE

Three marine leagues

A marine league is three nautical miles, so the Texas line lies nine nautical miles out, which is 10.36 statute miles, computed by *The Ledger*; the General Land Office describes it as “approximately 10 miles” [57], [58]. The distance belongs to Texas and to Florida’s Gulf coast because the Supreme Court found it in their history in 1960; the other Gulf states hold three geographical miles [55], [56]. BOEM’s page on federal offshore lands gives three marine leagues as 16.2 kilometers. Nine nautical miles is 16.668 [57], [59].



FIG. 5 Who owns the Gulf sea floor, from the coastline out, as the Submerged Lands Act, the Outer Continental Shelf Lands Act and the Supreme Court fixed it: state title to three marine leagues off Texas and Florida’s Gulf coast and to three geographical miles off Louisiana, Mississippi and Alabama; the 8(g) band three nautical miles beyond, where 27 percent of federal revenue goes to the state; federal title seaward of that. Schematic [38], [45], [53], [54], [55], [57].

New Mexico has no marine submerged lands. The Submerged Lands Act’s grant of the beds of navigable inland waters runs to every state, but its seaward grant runs to the coastal states, and New Mexico is not among the coastal states on NOAA’s list [60], [61]. Its public mineral money comes from land: the Mineral Leasing Act pays a state half of the federal onshore bonuses, rentals

and royalties collected within it, less 2 percent, and New Mexico received \$2.76 billion in fiscal year 2025, the most of any state [62], [63]. The Gulf states are paid by another formula. Twenty-seven percent of the revenue from federal tracts within three nautical miles of a state’s seaward line goes to that state, the band known as the

8(g) zone; BBG3 offered 681 blocks with acreage in it and drew bids on three, for \$396,962 [35], [38], [64].

On land the lessor changes with the tract, and the lease changes with the lessor. A federal onshore lease carries a royalty of not less than 12.5 percent, restored by the same 2025 law, a ten-year primary term and a minimum bid of \$10 an acre [40], [65], [66]. A New Mexico State Land Office lease on premium Permian acreage carries a royalty of “not less than one-fifth nor more than one-fourth” under Senate Bill 23 of 2025 and a five-year term; every sale the office held from July 21 to September 15, 2026 was at one-fourth [67], [68], [69], [70]. Texas leases its Permanent School Fund land, including the Gulf out to its three leagues, at a royalty of at least one-eighth for a term of no more than ten years [71], [72]. A private fee lease is a contract whose terms are, in the Railroad Commission’s

words, “private contractual matters,” and it is recorded with the county clerk where the land lies [73], [74], [75].

The prices say the same thing in dollars. The Bureau of Land Management’s New Mexico sale of August 19, 2026 leased 25 parcels on 20,334 acres in New Mexico, Oklahoma and Texas for \$139,021,741 in total receipts [76]. Its high bids, \$138,881,355.00 on 20,333.78 acres, came to \$6,830.08 an acre, 27.3 times the Gulf’s average on one sixteenth of the acreage, computed by *The Ledger* [37], [77]. The State Land Office’s three sales of July 21, August 18 and September 15, 2026 sold every tract offered, 27 tracts on 5,687.50 acres, at \$10,278.40 an acre, 41 times the Gulf’s figure, computed by *The Ledger*; the July sale’s top bid was \$30,009.38 an acre, by Devon in Lea County [68], [69], [70]. The federal figure understates Eddy and Lea, because the August sale also carried San Juan Basin, Oklahoma and East Texas parcels [78], [79], [80].



FIG. 6 Dollars of high bid per acre at five lease sales between July 21 and September 15, 2026, with the acres sold and the royalty: the Gulf’s BBG3 at \$250.46, the Bureau of Land Management’s New Mexico sale at \$6,830.08, and the State Land Office’s three sales at \$9,209.92, \$5,567.66 and \$16,723.27. Computed by *The Ledger* [37], [68], [69], [70], [77].

Texas's own sea floor was quiet. The General Land Office held no lease sale between July 2 and September 30, 2026; its last, with bids opened May 12, 2026, drew \$12,962,890.00 on fifteen tracts and included no Gulf tract, and its next opens bids on October 20, 2026 [81], [82]. On August 18, 2026 the School Land Board pooled the Tabbs Bay State Unit in Harris County, and on August 10, 2026 the Land Office reported 42 orphaned wells plugged with the Railroad Commission on state-owned submerged land [83], [84].

MARGINAL NOTE

Record title offshore

No lease on the Outer Continental Shelf may be transferred without the Secretary's approval, and an assignment of record title takes effect at 12:01 a.m. on the first day of the month after approval, for a \$260 fee [38], [49]. Operating rights are "an interest created by sublease out of the record title interest"; the regulation does not define record title itself [49], [85]. The land is a block on an official protraction diagram, never larger than 5,760 acres, and filings go to the bureau by mail, courier or email: "In-person, hand filings will not be accepted" [86], [87], [88].

Under the leases the difference is scale. In July 2026, by the Energy Information Administration's monthly figures released September 30, 2026, federal offshore Gulf wells produced 2,043 thousand barrels of crude a day, 14.6 percent of the national 13,948, computed by *The Ledger* [89]. The agency's outlook of September 9, 2026 puts the Permian at 6.76 million barrels a day for 2026 against 2.00 million from the federal Gulf, about 3.4 times as much, computed by *The Ledger* [90]. On September 25, 2026 Baker Hughes counted six rigs in the Gulf of Mexico and 270 in the Permian [91]. The wells answer to different regulators: offshore, BSEE, now inside the new administration, with a base

lease bond of \$50,000 or \$300,000 area-wide; in Texas state waters, the Railroad Commission, with at least \$100,000 of added security for an offshore well; in New Mexico, the Oil Conservation Division, with a one-well plugging bond of \$25,000 plus \$2 a foot [46], [49], [92], [93].

A beginning, not an end. A Gulf bid is a long way from a barrel: of 1,863 active Gulf leases on September 1, 2026, 476 were producing, and BOEM's own leasing booklet puts first oil from a deepwater sale at "Year 16 onwards" [94], [95].

By September 24, 2026 the government had accepted 39 of the 59 BBG3 high bids and rejected none; it will decide the last twenty [47].

The federal court in Washington will rule on the suits over BBG1 and BBG2, in which the government argued on August 24, 2026 that the thirty-sale mandate displaces sale-specific environmental review [96], [97], [98]. The Bureau of Land Management sells 30 parcels in New Mexico, Oklahoma, Kansas and Texas on November 18, 2026 at "a fixed 12.5 percent," and BBG4 follows in March 2027 [44], [99]. Offshore, each of those leases will stand in one federal register against one owner. Onshore, the first question on any tract is still whose minerals they are.



Three barrels of water

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SECTION III

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The Permian brings up about three barrels of salt water for every barrel of oil, and in 2025 Texas decided that a typical lease carries it to the lessee. What the water is worth, who shares in it and whether it may leave the oilfield are still being written, differently on each side of the state line.

On June 27, 2025 the Supreme Court of Texas decided who holds the water that comes up with the oil. In *Cactus Water Services v. COG Operating*, the operator held four leases on about 37,000 acres in Reeves County, where 72 horizontal wells had made nearly 52 million barrels of produced water and the operator had paid nearly \$21 million in disposal fees; the surface owners had leased the same water to a water company [100]. The Court held that “a deed or lease using typical language to convey oil-and-gas rights” carries the produced water with it, and that a reservation must be express. It treated the brine as oil and gas waste, not as water [100]. Rehearing was denied on September 5, 2025 [101]. New Mexico has no such ruling.

The quantity is known mostly by estimate, because Texas does not require operators to report it [102]. The Bureau of Economic Geology at the University of Texas puts Permian produced water at about 21 million barrels a day in 2025; against the Energy Information Administration's 6.57 million barrels of Permian crude a day, that is about 3.2 to 1, computed by *The Ledger* from the two publishers' figures [103], [104]. About 7.9 million barrels a day went back into fracturing, roughly 38 percent of the total [103]. New Mexico's Oil Conservation Division recorded 2,526,025,213 barrels in 2024, about 6.90 million a day, computed by *The Ledger* [105]. B3 Insight projected in March 2025 that Permian produced water would exceed 26 million barrels a day by 2030 [106].



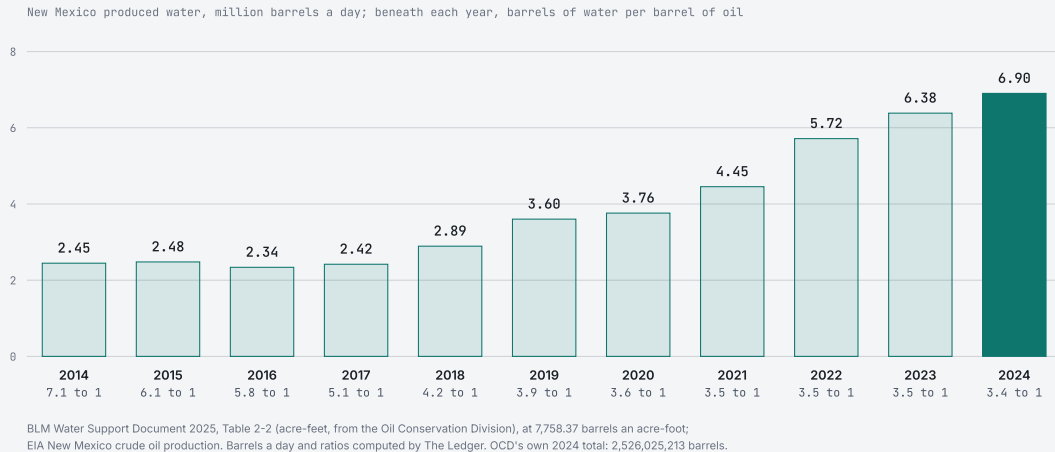


FIG. 7 New Mexico produced water, 2014 to 2024, in million barrels a day, with barrels of water per barrel of oil beneath each year: 2.45 million a day at 7.1 to 1 in 2014, 6.90 million at 3.4 to 1 in 2024. BLM acre-feet sourced to the Oil Conservation Division and EIA crude; computed by *The Ledger* [105], [107], [108].

Most of it goes back into the ground, and the ground has answered. A University of Texas researcher reports that shallow disposal grew 500 percent in the Delaware Basin in a decade, with reservoir pressures in places 1,000 psi or more above pre-injection levels [109]. The Geological Survey found the magnitude 5.0 west Texas earthquake of March 26, 2020 most likely induced by nearby disposal [110]. The Railroad Commission suspended every deep disposal permit in its Northern Culberson-Reeves seismic response area, 23 wells, effective January 12, 2024, and New Mexico's Oil Conservation Division cancelled 75 pending disposal applications around County Line on July 11, 2024 [111], [112].

Cactus settled who holds the water by default, and only that. Its footnote 3 expressed no view on the minerals dissolved in the brine, and Justice Busby, concurring for three justices, called the holding "simply a default rule" and asked whether the lessee will owe royalty on the water it sells [100], [113]. Texas has defined produced water as fluid oil and gas waste since

2013, and since September 1, 2019 section 122.002 of its Natural Resources Code has given treated waste to whoever takes it for treatment, unless a lease, surface use agreement or other binding document expressly provides otherwise [114], [115], [116], [117]. The Court did not rest on the 2019 words and called their effect "a matter of some debate" [100]. A 2025 bill on the ownership of brine died in committee [118].

MARGINAL NOTE

Produced water

The salt water that comes up a well with oil and gas. Texas has defined it since 2013 as fluid oil and gas waste, along with flowback, and its Supreme Court read it that way in 2025 [100], [114], [115]. It is not fresh water. Raw samples in the Texas Produced Water Consortium's report of April 17, 2026 averaged 131,117 milligrams of dissolved solids a liter and a gross alpha activity of 1,394 picocuries a liter, about 93 times the federal drinking water limit of 15, computed by *The Ledger* [119], [120].



New Mexico wrote its answer into a statute. The Produced Water Act, signed April 3, 2019, puts produced water under the responsibility and control of the well's working interest owners and operator, who "shall have a possessory interest in the produced water" and may sell it and keep the proceeds, unless law, a contract, a bill of sale or another binding document provides otherwise [121], [122]. Disposing of it is not an appropriation of water, needs no State Engineer permit and creates no water right [121]. The act also voids certain terms in private agreements entered into on or after July 1, 2019, among them requirements to buy fresh water when the operator elects to use produced or recycled water; a 2020 agency FAQ says existing lease provisions are void, but the statute reaches only the later agreements [121], [122], [123]. No New Mexico court has ruled on ownership as between lessee, mineral owner and surface owner [124].

Texas spent 2025 building a permit path out of the oilfield. House Bill 49, effective September 1, 2025, shields the person who takes produced water for treatment, the generator and the surface owner from tort suits over later use of the treated water, except for gross negligence, intentional wrongs, or negligence joined with a breach of the governing rules or permits; its rulemaking clause runs to the Railroad Commission [114], [125]. Land application came from Senate Bill 1145, which lets the Texas Commission on Environmental Quality permit it [126]. Discharge has sat with that commission since it took over Clean Water Act permitting for oil and gas on January 15, 2021 [127], [128]. It proposed its land application rule on April 30, 2026; staff expected adoption in August 2026, and as of September 30, 2026 the rule was not adopted [129].

The applications are waiting. Five Permian discharge requests stood at first notice on the commission's list of September 14, 2026, among them NGL Water Solutions Permian's request to pipe an annual average of 16,900,000 gallons a day of treated water into Red Bluff Reservoir on the Pecos, about 402,000 barrels a day, computed by *The Ledger* [130], [131]. Inside Climate News reported on August 20, 2026 that no river discharge permit had issued, and none was found through September 30, 2026 [130], [132]. An NGL executive said on August 4, 2026 that the company expected its permit in August 2026; Texas Pacific Water Resources said in August 2026 that it hoped for approval by the end of 2026 [133], [134].

New Mexico went the other way. Its Water Quality Control Commission voted 7-0 on May 14, 2025 to adopt 20.6.8 NMAC, in force July 12, 2025, which provides that "No person shall cause or allow untreated produced water to discharge," bars the discharge of treated produced water to surface or ground water as well, allows only pilot projects that do not discharge, and expires December 31, 2030 [135], [136]. NMOGA's appeal, filed June 23, 2025, is pending in the Court of Appeals [137]. On May 12, 2026 the commission voted 7 to 4, with one abstention, to hear a petition by the WATR Alliance, the City of Bloomfield and Lea County for permitted uses and discharges in 13 counties including Eddy and Lea. It has a hearing officer and no hearing date; the Environment Department's water protection director said in July 2026 that a hearing was hoped for in spring or summer 2027 [138], [139], [140], [141].



produced water in Texas and New Mexico, as of Sept. 30, 2026

	Texas	New Mexico
WHO HOLDS IT BY DEFAULT	The lessee, under a typical oil and gas grant (Cactus, June 27, 2025).	The working interest owners and operator, with a possessory interest and the proceeds (Produced Water Act, 2019).
CAN AN INSTRUMENT CHANGE IT	Yes: an express reservation; since Sept. 1, 2019 a lease or surface use agreement may provide otherwise.	Yes: law, a contract, a bill of sale or another binding document; some surface terms signed on or after July 1, 2019 are void.
DISCHARGE TO SURFACE WATER	An individual TCEQ permit; five Permian applications at first notice, none issued as of Sept. 30, 2026.	Banned, treated or untreated, until the rule expires Dec. 31, 2030.
LAND APPLICATION	TCEQ may permit it (S.B. 1145, 2025); rule proposed Apr. 30, 2026, not adopted.	Only pilot projects that do not discharge.
ROYALTY AND DISSOLVED MINERALS	Left open by the Court (footnote 3; the Busby concurrence).	Proceeds to the working interest owners and operator absent contrary law or contract; no court ruling.
WHAT COMES NEXT	Adoption of the TCEQ land application rule; the first discharge permits.	A hearing on petition WQCC 26-18, hoped for in 2027 (NMED, July 2026); NMOGA's appeal.

Cactus Water Servs. v. COG Operating (Tex. 2025); Tex. Nat. Res. Code 122.002; H.B. 49 and S.B. 1145 (2025); TCEQ lists of Sept. 14, 2026; NMSA 70-13-4 and 70-13-5; 20.6.8 NMAG; WQCC 26-18.

FIG. 8 Produced water in Texas and New Mexico as of September 30, 2026: who holds it by default, what can change that, whether it may be discharged or applied to land, what is open, and what comes next. From the statutes, the *Cactus* opinion, the Texas and New Mexico agency records and the petition dockets [100], [116], [121], [125], [126], [130], [136], [139], [141].

The money has already reached the surface. Texas Pacific Land, a surface owner, reported produced water royalties of \$124.2 million in 2025 on 4.292 million barrels a day, about 7.9 cents a barrel, computed by *The Ledger* [142]. A 2015 Midland County surface use agreement filed with the Securities and Exchange Commission paid 15 cents for each barrel disposed; University Lands charges 10 cents a barrel for disposal; the New Mexico State Land Office prices a disposal easement at \$10,000 a well a year plus 5 cents a barrel, or 11 cents when disposal is half or more of the holder's gross revenue [143], [144], [145]. One court has enforced such terms: on December 1, 2025 the Eastland court of appeals let stand \$2,898,358.50 in disposal fee damages and affirmed \$1,449,179 for skim oil under a surface agreement that obliged the operator to offer the surface owners any disposal well it drilled within five miles [146].

MARGINAL NOTE

Reading for the water

In a Texas chain, a typical oil and gas grant carries produced water to the lessee; a surface owner keeps it only by an express reservation, and since September 1, 2019 a lease or surface use agreement may provide otherwise [100], [116], [117]. In New Mexico the working interest owners and operator hold it unless law or an instrument provides otherwise, and no water right attaches [121], [122]. The instruments to read are the lease, the surface use agreement, any disposal agreement or easement, and any produced water lease from the surface owner [100], [145].

Capital has moved ahead of the permits. Done: Western Midstream closed its purchase of Aris Water Solutions, whose system runs through Eddy and Lea counties, on October 15, 2025, in a deal it put at an enterprise value of about \$2.0 billion; WaterBridge priced its public offering at



\$20.00 a share on September 16, 2025; Texas Pacific Land finished its desalination plant at Orla, rated for 10,000 inlet barrels a day, and began commissioning it; and on June 17, 2026 Western Midstream started a pilot near Red Bluff Reservoir that takes in 2,000 barrels a day and returns about 1,000 as fresh water [147], [148], [149], [150]. Announced, not closed: Select Water Solutions agreed on September 24, 2026 to buy Pilot Water Solutions for \$700 million, with closing expected in the fourth quarter of 2026 [151].

The arithmetic still favors the disposal well. The Texas consortium's 2022 report put typical piped disposal at 60 to 70 cents a barrel and said treatment must reach about a dollar to compete, against a member average of \$2.55; its 2024

report called economic viability “the most significant hurdle to beneficial use” [102], [152]. Treatment works in pilots, where the consortium found more than 99 percent of salinity, organics and radioactivity removed, though desalinated water passed whole-effluent toxicity tests in only 3 of 16 until it was polished [119]. About half of what enters a desalination plant leaves as brine for a disposal well [102], [132]. The three pending discharge requests on the Pecos total about 700,000 barrels a day, computed by *The Ledger*, against about 21 million produced [103], [131], [153], [154]. Federally, the Environmental Protection Agency said on March 12, 2025 that it would revise its wastewater limits to expand reuse, and it had proposed nothing by September 30, 2026 [155], [156], [157].



FIG. 9 What a barrel of produced water costs to recycle, dispose of or treat, as estimated by the Texas Produced Water Consortium (2022, 2024), B3 Insight and Five Point Energy (2025), against what a surface owner is paid a barrel under recorded rates and agreements. Estimates are their authors'; TPL's rate is computed by *The Ledger* [102], [106], [142], [143], [144], [145], [152], [158].



The next instruments are already named. Justice Busby listed royalty on water that is sold and the accounting for its reuse, and wrote that “These questions and more remain to be answered in future cases” [113]. Ownership of the minerals dissolved in the brine was expressly left open [100]. Cactus Water Services sued again on November 3, 2025, this time claiming the water still in the ground; there is no ruling [159]. *The Ledger* found no appellate decision in either state on whether a royalty owner shares in produced water revenue [160]. So the title question produced water brings is one an examiner can ask of every lease and surface agreement in an Eddy or Lea chain: does any instrument say who takes the water? In Texas, if none does, the lessee takes it. In New Mexico the working interest owners and operator hold it, and no court has yet said more.



The record is clear.

Archive builds title from the record: an automated title examination platform for the Permian Basin, beginning with Eddy and Lea counties, New Mexico. *The Ledger* is published at archiveledger.com.

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