RAYCO DRILLING CO. V. DIA-LOG CO., 1970-NMSC-007, 81 N.M. 101, 464 P.2d 17 (S. Ct. 1970)

**RAYCO DRILLING COMPANY, a New Mexico Corporation,
Plaintiff-Appellee,
vs.
THE DIA-LOG COMPANY, a California Corporation,
Defendant-Appellant**

No. 8854

SUPREME COURT OF NEW MEXICO

1970-NMSC-007, 81 N.M. 101, 464 P.2d 17

January 19, 1970

Appeal from the District Court of San Juan County, Zinn, Judge.

COUNSEL

B. J. BAGGETT, Farmington, New Mexico, Attorney for Plaintiff-Appellee.

CARTRON, CARTRON & DONNELLY, Santa Fe, New Mexico, PAINTER, TEMPELTON, & CARLIN Los Angeles, California, Attorneys for Defendant-Appellant.

JUDGES

REESE, Jr., District Judge, wrote the opinion.

WE CONCUR:

Paul Tackett, J., John T. Watson, J.

AUTHOR: REESE

OPINION

*{*102}* REESE, Jr., District Judge.

{1} This action was commenced in the District Court of San Juan County, New Mexico, by Rayco Drilling Company, appellee herein. Rayco alleged in its complaint that the Dia-Log Company, appellant herein, negligently dropped a tool in the well bore of an oil and gas well, causing certain items to become irretrievably stuck in the hole and

necessitating the hole to be whipstocked and a new hole drilled. From an adverse judgment in the amount of $46,889.64, defendant appeals.

{2} Rayco Drilling Company, hereinafter called Rayco, was engaged in drilling an oil and gas well in La Plata County, Colorado, and had reached a depth of 5501 feet when its drill pipe stuck in the hole and a fishing job[1] occurred. The Dia-Log Company, hereinafter called Dia-Log, was a special service company and its business was the furnishing and use of equipment to locate the point above which pipe was loose in the hole (the freepoint) and string shots for detonation to accomplish back-offs or the unscrewing of the pipe at selected points. Rayco employed Dia-Log to furnish and run its equipment, and during the fishing operation a tool known as a Dia-Log Free Point Indicator was by Dia-Log dropped in the hole. The trial court found that the Dia-Log employees were guilty of negligence in dropping the tool and that as a proximate result of such negligence Rayco suffered damages from the loss of equipment in the hole and from the expenditures necessarily incurred in setting a whipstock and drilling a new hole from the whipstock outside the original hole and down to the original depth of 5501 feet. On appeal from a judgment against it, Dia-Log does not question the finding of negligence, but urges two points for reversal.

{3} These points are:

POINT ONE

"The findings of fact that the dropping of the free point indicator caused the wash pipe to be stuck and proximately resulted in loss and damages to plaintiff's well are contrary to the undisputed evidence, and are based upon conjecture and surmise and not supported by substantial evidence."

POINT TWO

"The findings of fact and conclusions of law that the plaintiff sustained damages proximately caused by defendant's negligence, in the amount of $46,889.64, are not supported by substantial evidence."

*{*103}* **{4}** The trial court found that Dia-Log negligently dropped its free point indicator in Rayco's well and thereby caused the wash pipe to become irretrievably stuck, and that this resulted in Rayco being required to abandon the recovery of and to lose the drill collars and equipment in the bottom of the hole and to whipstock the well."

{5} In discussing these findings and the evidence supporting them we shall first discuss the drill collars and equipment in the bottom of the hole which Dia-Log strenuously argues were irretrievably stuck in the hole before the wash pipe was run and stuck, and from this asserted fact Dia-Log urges the conclusion that regardless of later events Rayco would have suffered substantially the same loss.

{6} We have reviewed the entire record in this case and in our view the evidence not only fails to show that the drill collars were irretrievably stuck in the hole before the wash pipe was run but, contrariwise, supports a reasonable inference that they were not stuck and could probably have been recovered but for the sticking of the wash pipe.

{7} The daily drilling log kept by Rayco and the records kept by Dia-Log and later transferred to a graphic exhibit show the following facts: The hole was drilled with 3 1/2" drill pipe, 6" and 6 1/2" drill collars, and 8 3/4" bit to a depth of 5501 feet when, on November 25, 1965, circulation was lost due to a fractured formation which had been penetrated by the bit and while coming out of the hole the elevators unlatched and the drilling string fell back into the hole. Due to the fall the drill pipe parted at 1650 feet below the surface and the bottom part of the string, some 3851 feet, fell 1080 feet to the bottom of the hole. This partial string consisted of the 8 3/4" bit about four feet long, 23 drill collars 666 feet long, and 3181 feet of 3 1/2" drill pipe, total length 3851 feet.

{8} The fall of this string caused the drill pipe to corkscrew and become so crooked above the drill collars that no effective pulling force could or did reach the collars by pulling or jarring on the pipe above them. This was the situation on November 28, 1965 when the services of Dia-Log were commenced. Runs made with the Dia-Log tool from time to time showed that below 1955 feet the drill pipe was completely stuck in torque. The crooked drill pipe was removed from above 4768 feet and there was left in the hole 63 feet of the 3 1/2" drill pipe which was partially stuck in torque some 42 feet from its top, and the 23 drill collars and bit above described. There is no satisfactory evidence in the record bearing on the questions as to whether the drill collars were stuck in the hole except the fact that the hole was sloughing or caving above the collars and the fact that jarring was attempted for an hour, and after removing the crooked pipe last mentioned, it was necessary to clean out several feet of cavings from the top of the fish in order to reach it. This was done by drilling and circulating down to the top and after reconditioning the hole it was decided to wash around the drill collars before attempting to pull them.

{9} The wash string consisted of a wash shoe 8 5/8" o.d. attached to the bottom of six joints (215 feet) of 7 5/8" o.d. casing and the casing was attached to the drill string with a 3 1/2" to 7 5/8" connection. The wash string was run and rotated over the 63 feet of drill pipe and seven feet of the drill collars when the string "tried to stick" and efforts were then made to "work" the wash pipe up the hole. The wash pipe was coming out satisfactorily and three joints of drill pipe (90 feet) had been pulled and laid down when the kelly broke and the wash string fell back down the hole, coming to rest seven feet below the top of the collars where washing had been completed.

{10} The size of the hole for the length of the drill collars was about nine inches. The bit was 8 3/4" and the hole did not have time to get out of gauge before the drill collars were dropped back to bottom. It, therefore, would be expected that the wash shoe 8 5/8" would be somewhat tight in the hole when going down around the drill collars and it must also be remembered that the 62 feet of *{*104}* drill pipe above the collars was

somewhat crooked. The tight hole and the crooked pipe would cause the wash string to try to stick.

{11} The cavings and the fact that the wash pipe "tried to stick" do not support an inference that the drill collars were "irretrievably stuck" before the wash pipe was run. No witness disagreed with the thesis that in nearly all cases it is possible with little difficulty to wash over drill collars situated as were these in this case and remove or fish them out of the hole.

{12} The second part of Dia-Log's argument under its first point is that there is no substantial evidence to show that the dropping of the free point indicator was the proximate cause of the sticking of the wash string.

{13} We have mentioned that when the wash pipe string was being "worked up the hole," the kelly broke letting the string fall back to the bottom. The fall of the pipe caused it to part 1920 feet below the surface and the top part of the string with the broken kelly on it wedged alongside the bottom part of the string a distance of some 684 feet, leaving the top of the broken kelly this distance below the surface. The fall caused this string of pipe in both its parts to become crooked and to be in torque at various places. After numerous back-offs and efforts to jar and remove various pieces of the broken wash string, there was in the hole at the time the tool was dropped the same two parts of the wash string, except that: (1) the bottom part (the string down to 4798 feet) had been backed off at 2235 feet and an effort had been made to pull the top 187 feet. This top piece was wedged so tight that it could be moved only two feet up the hole. The fishing string was unscrewed at 2046 feet leaving the top 187 feet separated by two feet from the rest of the string at 2235 feet. (2) the top part of the wash string which dropped alongside the bottom part of the string for a distance of some 684 feet and wedged in the hole had been engaged and some of it removed, and a piece extending from 2011 feet to 2604 feet remained. Connection with this fish was made and free point located at 2200 feet. A back-off was made at 2198 feet and the string extending down to 2198 feet was pulled up the hole some three to five feet so the slips could be set in the rotary table and the kelly could be unscrewed to permit the installation of a line wiper at the top of the pipe and just below the raised kelly.

{14} When the line wiper was installed, Dia-Log started out of the hole with its free point indicator and negligently failed to slow down or stop in time to prevent the rope socket on top of the tool from hitting the bottom of the kelly at which time the line pulled out of the rope socket and the tool, some nine feet, seven inches in length and 1 5/8" in diameter, and the rope socket fell inside the drill pipe.

{15} Dia-Log argues that its tool did not necessarily go down the drill hole outside the wash string and stop at the top of the 7 5/8" wash casing. It argues that it might have gone inside the wash pipe or it might have lodged in a cavity in the side of the drill hole, and in either case it could not have caused the wash pipe to stick.

{16} As noted above, the top of the wash string was at 2046 feet. The bottom part of the fish lying alongside and through which the tool fell was at 2198 feet. Obviously, the tool could not have entered the wash pipe at the top of the wash string. The wash string was parted for two feet at 2233 feet to 2235 feet and if the tool had left the fish at 2198 feet in might conceivably have entered the wash pipe at 2235 feet if the wash string had moved laterally in the hole after the two foot separation, above mentioned, and if the bottom part of the fish through which the tool dropped had moved laterally after the fish was pulled up the hole three to five feet as above mentioned, leaving a gap at 2193 feet to 2198 feet. These are big ifs, and in all probability neither occurred since the pipe was crooked and wedged so tightly in the hole that it could not move laterally. The records kept by *{*105}* Dia-Log employees reported rather tersely what happened, as follows:

"Backed off 3 1/2" drill pipe with string shot at 2198' of fish No. 3. Since well had kicked and flowed drilling mud out of pipe, rig crew picked up drilling string unscrewed kelly from drill pipe before pulling wire line from hole. Line wiper was installed between top of drill pipe and bottom of kelly. While pulling wire line from hole the rope socket at top of Combination Free Point Indicator did not enter the bottom of the unscrewed and raised kelly and the rope socket pulled loose from the end of the cable permitting the Combination Free Point Indicator to fall back down inside of the drill pipe. Made a feeler run in the drill pipe with Dia-Log wire line overshot and found combination tools had fallen through and out the lower end of fish No. 3. On this run checked that fish No. 3 was backed off at 2198 feet and the lower end of fish No. 3 was at 2604'."

{17} We hold that the facts herein detailed, and which are undisputed support the finding that the Free Point Indicator did not enter the wash string but went on down the hole on the outside of the wash string. Probabilities will support a conclusion. White v. Valley Land Co., 64 N.M. 9, 322 P.2d 707 (1957). Here the evidence was not equally consistent with two hypotheses. Compare Lovato v. Plateau, Inc., 79 N.M. 428, 444 P.2d 613 (1968).

{18} With reference to the contention of Dia-Log that the tool could have lodged in a cavity in the side of the hole, the drilling log shows that on November 15 the hole was at 2308 feet. At the end of November, the hole was at 4885 feet. The log reflects no cavings or other notations which might point to any cavities in the hole from 2308 feet to 4885 feet. It is improbable that any cavities developed between November 20 and December 6 when the tool was dropped. There had been cavings above 2308 feet from time to time and the cavings which were found on top of the drill collars on December 1 probably came from above 2308 feet. The tool was falling through drilling mud as it went alongside the wash string and since there is no evidence to show cavities below 2308 feet there is a reasonable inference that the tool continued down the hole to the top of the wash pipe.

{19} The wash pipe was 7 5/8" o.d., the drill hole approximately 9 to 9 1/4" and the diameter of the tool was 1 5/8". There were two belly springs on the tool approximately fourteen inches apart which were designed to hold the tool inside the pipe. There was simply not enough clearance between the wash pipe and the sides of the drill hole to

permit the tool to drop down along the wash pipe and if there had been enough clearance to permit the tool to start down the side of the wash pipe the belly springs would have prevented a continuation of such a fall.

{20} On December 7, after numerous fishing operations, everything was cleared out of the hole except the wash string and the drill collars, pipe and bit which were being washed over. The pumps were started when the wash string was engaged, the hole was conditioned, and 40 barrels of oil were run down the pipe and up the hole so as to free the wash string. The top of the wash string was at 2232 feet when it was engaged with an overshot prior to pumping. After the oil was spotted, the wash string was pulled up the hole about 225 feet when it stuck and the pipe parted three feet below the overshot. The stub of pipe was removed from the overshot and the fish was re-engaged at 2010 feet below the surface. The fish could not be moved up the hole and the pipe was backed off at 4311 feet. At this point, it was decided to lay down the 3 1/2" drill pipe and run a new string of four-inch drill pipe before re-engaging the fish at 4311 feet. The change in drill pipe was accomplished on December 12 and the four-inch drill pipe was screwed in the wash string at 4311 feet after washing out sixty feet of fill. Efforts to pull the wash string failed and after eight hours of jarring, Dia-Log's Combination Free Point Indicator *{*106}* and string shot was run. Free point was located at 4350 feet, or four feet above the top of the wash pipe. After several back-off attempts, the sub at 4311 feet unscrewed and the whipstock operations commenced by running a cement plug on top of the fish and back up the hole to 4067 feet.

{21} Expert opinion varied as to whether the Dia-Log tool was capable of sticking the wash pipe. Rayco witnesses opined that the tool not only could but did stick the wash pipe after it was moving freely up the hole for a distance of 225 feet. Some witnesses for Dia-Log were of the opinion that it should have been possible to shove the tool back in the formation by jarring even if it had found its way to the top of the wash pipe and caused it to stick.

{22} The trial court accepted the opinions of Rayco's expert witnesses, and the facts which we have detailed appear to us to be entirely adequate to support the inference drawn by these experts, that the Dia-Log tool did in fact cause the wash string to be irretrievably stuck in the hole.

{23} We hold that the findings of the trial court as to proximate cause are supported by substantial evidence and that all inferences necessary to support such ultimate findings were properly made by the trial court under principles announced in many of our decisions. Airco Supply Co. v. Albuquerque National Bank, 68 N.M. 195, 360 P.2d 386 (1961); and Tapia v. Panhandle Steel Erectors Co., 78 N.M. 86, 428 P.2d 625 (1967).

{24} As to Point Two urged by Dia-Log, there is substantial evidence to support an award of damages flowing from the loss of the drill collars and other equipment in the hole and from the setting of the whipstock and redrilling of the hole down to original depth. Appellant questions the allowance of the costs of restoring circulation in the

second hole. The damage which Dia-Log would have us deduct from the judgment is as follows:

Dowell Mud Bill $3,508.34
11 days x $58 fuel costs 638.00
11 days x $454 labor & overhead 4,994.00
11 days x $90 drill collar rental 990.00

TOTAL $10,130.34

{25} It is apparent from the record that the geological formations penetrated by the two holes in which circulation losses occurred were identical and that the final loss of circulation at 5501 feet in the first hole was equivalent to the loss of circulation in the second hole at 5477 feet to 5480 feet.

{26} In the first hole, when circulation was lost at 5501 feet, mud and other materials were pumped into the formation for at least six hours with no returns. While pulling the pipe out of the hole following this pumping, the elevators came unlatched allowing the drilling string to drop and no further efforts to restore circulation were possible thereafter.

{27} In the second hole, after circulation was finally lost at 5480 feet, Rayco spent some eleven days in pumping materials into the formation and in squeeze jobs in order to restore circulation and get the hole in shape for further drilling.

{28} It is certain that Rayco, in the first hole, would have been required to restore circulation before it could have drilled any deeper and it is reasonable to say that the time and expense would have been as great as it incurred for this purpose in the second hole. Furthermore, there is no particular magic in the figure 5501 feet, as opposed to 5480 feet. The second hole at 5480 feet was in the same formation and in the same condition as to lost circulation *{*107}* as was the first hole at 5501 feet. We hold that there is no substantial evidence to support the allowance of the questioned items listed above, totaling $10,130.34.

{29} There is at least an equal probability that the damages in question were not the result of Dia-Log's negligence and in this event recovery may not be allowed. Renfro v. J.D. Coggins Co., 71 N.M. 310, 378 P.2d 130 (1963).

{30} The cause is remanded with directions to the trial court to reinstate the case upon its docket and modify the judgment to conform herewith. The costs of this appeal should be divided equally between the parties.

{31} IT IS SO ORDERED.

WE CONCUR:

Paul Tackett, J., John T. Watson, J.

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1 The following definitions of terms used in this opinion are included here by way of footnote for the convenience of the reader: "Fish" - the various pipes and other equipment which are stuck in the well; "fishing" - the job of retrieving the fish from the well bore; "drill pipe" - pipe that drives the rotary drill bit; "drill collar" - similar to drill pipe but larger in O.D. (i.e., outside diameter), and which provides the weight for the drilling bit; "wash pipe" - a specialized pipe used to drill over the outside of a stuck fish in an effort to free it; the operation is known as "washing over"; "washover shoe" - attached to the foot of the wash pipe and which aids the wash pipe in grinding down through the formation and over the stuck fish; "whipstock" - drilling at an angle off from the original hole at the point where there is an obstruction; "lost circulation" - a condition when none or only part of the drilling mud pumped into the drill pipe returns to the surface, the remainder of the fluid being lost by going down and out into the formation through fractures; "kelly" - a heavy square pipe which maybe raised and lowered through the square hole in the rotary table of the drilling rig, which has as its function to rotate the drill pipe and drilling bit; "free point" - the deepest depth at which the stuck pipe is free; "back-off" - the process of unscrewing the threaded pipe connection above the depth where stuck; "string shot" - one or more strands of primacord explosive with an attached electric detonating or blasting cap, which initiates the unscrewing of the joint by being detonated at or near the free point; "jarring" - a process of pulling and releasing jars and bumper jars (fishing tools) with a certain amount of weight and great force, thereby imparting sharp up-and-down jolting blows to the stuck drill pipe or drill collars in the attempt to free them.