

IPR2024-00300
Patent No. 11,560,770

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTELLIGENT WELLHEAD SYSTEMS, INC.,
Petitioner,

v.

DOWNING WELLHEAD EQUIPMENT, LLC
Patent Owner

IPR2024-00300
Patent No. 11,560,770

PETITIONER'S UPDATED EXHIBIT LIST

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February 20, 2025

Exhibit	Description
Exhibit 1001	U.S. Patent No. 11,560,770 (“770”)
Exhibit 1002	Dr. Robert Durham’s Declaration
Exhibit 1003	U.S. Patent Publication No. 2022/0268141 (“Krupa”)
Exhibit 1004	U.S. Patent Publication No. 2019/0233275 (“Carr”)
Exhibit 1005	PCT International Patent Application Publication No. WO2020/145978 (“Beuterbaugh”)
Exhibit 1006	U.S. Patent No. 8,490,685 (“Tolman”)
Exhibit 1007	U.S. Patent Publication No. 2007/0023184 (“Jackson”)
Exhibit 1008	First Amended Complaint for Patent Infringement, Permanent Injunctive Relief Requested and Demand for Jury Trial, (ECF No. 29); <i>Downing Wellhead Equipment, LLC v. Intelligent Wellhead Systems, Inc., et al.</i> , No. 1:23-cv-01180 (D. Colo.) (“the Litigation”)
Exhibit 1009	Jacobs, Trent. “The Shale Evolution: Zipper Fracture Takes Hold,” J Pet Technol 66 (2014): 60–67. doi: https://doi.org/10.2118/1014-0060-JPT
Exhibit 1010	’770 Prosecution History
Exhibit 1011	Patent Family Priority Diagram
Exhibit 1012	Patent Family Specification Comparisons
Exhibit 1013	’779 Prosecution History
Exhibit 1014	Downing’s Objections and Responses to IWS’s First Set of Interrogatories in the Litigation

Exhibit	Description
Exhibit 1015	Michael Morton, “Unlocking the Earth: A Short History of Hydraulic Fracturing,” GEO ExPro, Vol. 10, No. 6, December 2013 (https://geoexpro.com/unlocking-the-earth-a-short-history-of-hydraulic-fracturing/) (last accessed November 30, 2023)
Exhibit 1016	B.A. Wells and K.L. Wells. “Shooters – A “Fracking” History.” American Oil & Gas Historical Society, (https://aoghs.org/technology/hydraulic-fracturing) (last accessed November 30, 2023)
Exhibit 1017	Carl T. Montgomery and Michael B. Smith, “Hydraulic Fracturing: History of an Enduring Technology,” <i>Journal of Petroleum Technology</i> , Vol. 62, Issue 12 (Dec. 2010)
Exhibit 1018	Bourgoyne, A. T., Jr., K. K. Millheim, M. E. Chenevert and F. S. Young, Jr. (1986). <u>Applied Drilling Engineering</u> , Society of Petroleum Engineers.
Exhibit 1019	Vassiliou, M. S. (2018), <u>Historical dictionary of the petroleum industry</u> , Rowman & Littlefield
Exhibit 1020	U.S. Patent Application Publication No. 2013/0306322 to Sanborn <i>et al.</i> entitled “System and Process for Extracting Oil and Gas by Hydraulic Fracturing” (“ <i>Sanborn</i> ”)
Exhibit 1021	U.S. Patent Publication No. 2012/0255734 to Coli <i>et al.</i> (“ <i>Coli</i> ”) entitled “Mobile, Modular, Electrically Powered System for Use in Fracturing Underground Formations”
Exhibit 1022	Waters, George, Dean, Barry, Downie, Robert, Kerrihard, Ken, Austbo, Lance, and Bruce McPherson. "Simultaneous Hydraulic Fracturing of Adjacent Horizontal Wells in the Woodford Shale." Paper presented at the SPE Hydraulic Fracturing Technology Conference, The Woodlands, Texas, January 2009. doi: https://doi.org/10.2118/119635-MS (“ <i>Waters</i> ”)
Exhibit 1023	Pearson, C.M., Bond, A.J., Eck, M.E., and J.H. Schmidt. "Results of Stress-Oriented and Aligned Perforating in Fracturing Deviated Wells." J Pet Technol 44 (1992): 10–18.

Exhibit	Description
	doi: https://doi.org/10.2118/22836-PA
Exhibit 1024	Mutalik, P N, and Bob Gibson. "Case History of Sequential and Simultaneous Fracturing of the Barnett Shale in Parker County." Paper presented at the SPE Annual Technical Conference and Exhibition, Denver, Colorado, USA, September 2008. doi: https://doi.org/10.2118/116124-MS ("Mutalik")
Exhibit 1025	Mayerhofer, M. J., Lolon, E. P., Warpinski, N. R., Cipolla, C. L., Walser, D., and C. M. Rightmire. "What is Stimulated Reservoir Volume (SRV)?" Paper presented at the SPE Shale Gas Production Conference, Fort Worth, Texas, USA, November 2008. doi: https://doi.org/10.2118/119890-MS ("Mayerhofer")
Exhibit 1026	Roussel, Nicolas P., and Mukul M. Sharma. "Optimizing Fracture Spacing and Sequencing in Horizontal-Well Fracturing." SPE Prod & Oper 26 (2011): 173–184. doi: https://doi.org/10.2118/127986-PA ("Roussel")
Exhibit 1027	K. R. Webster, W. C. Goins, Jr., and S. C. Berry, "A Continuous Multistage Tracing Technique," <i>Journal of Petroleum Technology</i> , vol. 17, no. 06, pp. 619-625, 1965, doi: 10.2118/977-pa. ("Webster")
Exhibit 1028	A. Casero, G. Pace, B. Malone, F. Cantaloube, L. Tealdi, H. Malonga, and R. Seale, "Continuous Pumping, Multistage, Hydraulic Fracturing in Kitina Field, Offshore Congo, West Africa," in <i>SPE International Symposium and Exhibition on Formation Damage Control</i> , 2008, vol. All Days, SPE-112442-MS, doi: 10.2118/112442-ms. [Online]. Available: https://doi.org/10.2118/112442-MS ("Casero")
Exhibit 1029	S. Rassenfoss, "A Look Into What Fractures Really Look Like," <i>Journal of Petroleum Technology</i> , vol. 70, no. 11, pp. 28-36, 2018, doi: 10.2118/1118-0028-jpt. at 6 ("Rassenfoss")
Exhibit 1030	R. Oberhofer, "Application of Ball-Drop Technology to

Exhibit	Description
	Improve Efficiency and Stimulation of Limited Entry Completion Systems,” in <i>Abu Dhabi International Petroleum Exhibition & Conference</i> , 2016, vol. Day 2 Tue, November 08, 2016, D021S052R004, doi: 10.2118/183427-ms. [Online]. Available: https://doi.org/10.2118/183427-MS (“Oberhofer”)
Exhibit 1031	Tolman, R. C., et al. (2009). <u>Method and Apparatus for Simultaneous Stimulation of Multi-Well Pads</u> . SPE Hydraulic Fracturing Technology Conference (“Tolman”)
Exhibit 1032	G. R. Holzhausen and R. P. Gooch, "Impedance of Hydraulic Fractures: Its Measurement and Use for Estimating Fracture Closure Pressure and Dimensions," in <i>SPE/DOE Low Permeability Gas Reservoirs Symposium</i> , 1985, vol. All Days, SPE-13892-MS, doi: 10.2118/13892-ms. [Online]. Available: https://doi.org/10.2118/13892-MS (“Holzhausen”)
Exhibit 1033	R. W. Paige, L. R. Murray, and J. D. M. Roberts, "Field Application of Hydraulic Impedance Testing for Fracture Measurement," <i>SPE Production & Facilities</i> , vol. 10, no. 01, pp. 7-12, 1995, doi: 10.2118/26525-pa (“Paige”)
Exhibit 1034	L. V. Massaras, A. Dragomir, and D. Chiriac, “Enhanced Fracture Entry Friction Analysis of the Rate Step-Down Test,” in <i>SPE Hydraulic Fracturing Technology Conference</i> , 2007, vol. All Days, SPE-106058-MS, doi: 10.2118/106058-ms. [Online]. Available: https://doi.org/10.2118/106058-MS (“Massaras”)
Exhibit 1035	S. Mondal, "Pressure transients in wellbores: Water hammer effects and implications for fracture diagnostics," 2010 (“Mondal”)
Exhibit 1036	Declaration of Califf T. Cooper in Support of Petitioner’s Unopposed Motion For Admission <i>Pro Hac Vice</i> of Califf T. Cooper Under 37 C.F.R. § 42.10(c)
Exhibit 1037-1	<i>Krupa</i> Provisional with filing documents

Exhibit	Description
Exhibit 1037-2	Petitioner's Notice of Deposition of John Hughett, P.E. Pursuant to 37 C.F.R. § 42
Exhibit 1038	Figure 15 A, frac stack atop BP's D-1 well, Page 47 of Exhibit 2006
Exhibit 1039	Table of Exhibits from Petition
Exhibit 1040	Email to Ms. Terry, from Ms. White, dated June 12, 2023, subject: Expert witness candidate
Exhibit 1041	<i>Deep Fix, LLC v. Marine Well Containment Company LLC</i> , CA. No. 4:18-cv-00848, S.D. Tex. (Feb. 18, 2020), Doc. No. 219, "Findings of Fact and Conclusions of Law."
Exhibit 1042	Excerpts of Declaration of John Hughett Support of Patent Owner's Preliminary Response (Exhibit 2006)
Exhibit 1043	Transcript of John P. Hughett, P.E. Deposition
Exhibit 1044	Dr. Robert Durham's Reply Declaration
Exhibit 1045	Signed Errata Sheet from Deposition of Dr. Robert Durham taken on August 15, 2024
Exhibit 1046 (NEW)	Petitioner's Oral Argument Demonstratives
Exhibit 1047 (NEW)	Signed Errata Sheet from Deposition of Dr. Robert Durham taken on January 28, 2025

Dated: February 20, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6, I hereby certify that a true and correct copy of the foregoing Petitioner's Updated Exhibit List was served on February 20, 2025, via email to counsel for Patent Owner at the following:

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