Featured Job Results

Well Location	Type	Sticking Mode	Well Geometry	Well Depth / Freepoint	Workstring – BHA Detail	Prior Action	Vibration Results	Subsequent Action
Mobile Co., AL	Coil tubing	Mechanical (Junk)	~ Vertical	18,423' / 18,440'	1-1/4" CT, wash nozzle	Work pipe, actuated disconnect. Stuck 2 days.	Freed in < 2hrs. CT parted @ 18,350'	POOH
Jefferson Co., TX	BHA	Key Seat	Vertical	~8,000 / 4,591'	5" 19.5# DP, BHA	Jar, spot pill. Stuck for 1 day.	Freed BHA in 45 mins.	POOH
Galveston Co., TX	Running casing	Mechanical (centralizers)	Deviated	13,300' / 11,630'	Swedge, 7" 26# Csg.	Spot friction reducers, work Csg. Stuck 1-1/2 days.	Freed Csg. in 18 mins.	Run casing to bottom
Refugio Co., TX	BHA	Differential	Deviated	11,300' / ~10,900'	3-1/2" 15.5# DP, BHA	Spot friction reducers, work pipe. Stuck 1-1/2 days.	Freed BHA in 5 hrs., 45 mins.	POOH
Zapata Co., TX	Running liner	Mechanical (dogleg)	Deviated	10,189' / 8,879'	5" 19.5# DP, 7-5/8" 39# liner	Spot diesel, work pipe. Stuck 2 days.	Freed liner in 27 mins.	Run to bottom and cmt liner
Grady Co., OK	Stuck tubing	Sand	Vertical	10,598' / ~10,400'	2-7/8" 6.5# EUE, N-80	Work pipe 1 day.	Freed Tbg. in 35 mins.	Clean out sand
Hidalgo County, TX	Running casing	Differential	Deviated	10402' / 7,138'	9-7/8" 62.8# Csg. with centralizers	Stack out, spot pill. Stuck 51 hrs.	Freed Csg. in 1 hr., 20 mins.	Run casing to bottom
Hidalgo County, TX	Velocity string	Salt	Vertical	12,819' / ~12,500'	1-1/4" CT	None.	Freed CT in 10 mins.	Clean out
Acadia Parish, LA	Coil tubing	Sand	Vertical	3,100' / 3,016'	1-1/4" CT, wash nozzle	Work pipe. Stuck 1 day.	Freed CT in 1 hr.	Continue clean out
Orange Co., TX	Overshot inside 4-1/2' csg	Mechanical (overshot pushed thru bad casing)	Severe S-Curve	12990' / TOF at 12928'	2-3/8" 5.95# CS Hydrill, DC's and jars., overshot	Jar. Stuck 1 day.	Freed overshot in < 2 hrs.	Recomplete
Orange Co., TX	Mud stuck csg.	Mud stuck, incomplete cuts	Vertical	15,202' / 6,540'	3-1/2" 13.3# DP, overshot, 4-1/2" 15.1# Csg.	Jar. Stuck 1 day.	Freed Csg. down to 11,383', breaking two cuts in 17 hrs., 45 mins.	Continue program
OCSG 22501	Running casing	Hole collapse	Vertical	2,673' / ~2,500'	Csg. Spear @ Surface, 16" 84# J-55 Csg.	Work Csg. Stuck 1 day.	Free casing in ~7 hours	POOH, continue drilling program
OCSG 02969	Snap latch packer	Mechanical	Deviated	11,650' / G.P. Packer @11,482'	3-1/2" 13.3# IF DP,1-1/2" WP	Work pipe. Stuck 1 day.	Freed snap latch and WP in 4 mins.	Complete well
Caddo Co., OK	Drill pipe	Differential	Vertical	10,332' / ~5,000'	4-1/2" 16.6# DP, BHA	Work pipe. Stuck 1-1/2 days.	Freed DP in 1 min.	POOH, continue drilling program
Iberville Parish, LA	Packer	Mechanical	Vertical	Packer @ 9,028' / 9,028'	2-3/8" 4.7# EUE - Model R packer inside 5" liner	Work pipe. Stuck 1 day.	Freed Pkr. in < 1.5 hrs.	Recomplete
Roger Mills Co., OK	BHA	Hole collapse	Vertical	12,800' / 8,639'	5" 19.5# DP, BHA	Work pipe, jar. Stuck 1-1/2 days.	Freed DP in 25 mins.	POOH, continue drilling program
Pittsburg Co., OK	Overshot	Sand	Deviated	Packer @ 14,373' / 14,207'	2-3/8" EUE 8rd L-80, 4.7#, overshot	Work pipe. Stuck 1 day.	Freed overshot in 59 mins.	POOH, continue workover
Wheeler Co., TX	BHA	Hole collapse	Vertical	13,147' / 2,566'	4-1/2" XH 16.6# DP, BHA	Work pipe, jar. Stuck 2 days.	Freed BHA in 8 mins.	POOH, continue drilling program
Texas Co., OK	BHA	Differential	Vertical	3,802' / 3,192'	4-1/2" XH 16.6# DP, BHA	Spot oil, work pipe, jar. Stuck 8 days.	Freed BHA in 20 mins.	POOH, continue drilling program
San Juan Co. NM	BHA	Coal fines	Vertical	3,373' / ~3,000'	2-7/8" 6.85# DP, BHA	Work pipe. Stuck 1 day.	Freed BHA in ~3.5 hrs.	POOH
Caddo Parish, LA	BHA	Key seat	Dog Legged	8,589' / ~3,200'	4-1/2" XH 16.6# DP, BHA	Spot oil, work pipe. Stuck 2 days.	Freed BHA in 12 mins.	POOH
Texas Co., OK	Running casing	Differential	Vertical	7,120' / 5,800'	4-1/2" 10.5# Csg.	Worked Csg. Stuck 2 days.	Freed Csg. in 12 mins.	Run casing to bottom
Refugio Co., TX	Tubing	Sand	Vertical	5,700' / ~4,800	2-3/8" EUE J-55 Tbg.	Cut 3 places, jar. Stuck 1 day.	Freed all 3 cuts in 16-1/2 hrs.	Burn over packer
Marion Co., TX	Running casing	Differential	Vertical	10,706' / 2,791'	5-1/2" 17# Csg. (shoe @ 7,703')	Work Csg. Stuck 1 day.	Freed Csg. in 3 mins.	Run casing to bottom
South Pass Block 26	Running casing	Hole collapse	Vertical	5,000' / 2,100'	Swedge, 16" 97# Csg.	Work Csg. Stuck 2 days.	Freed Csg. in 35 mins.	Run casing to bottom
Jones Co., MS	BHA	Key seat	Deviated	9,800' / 3,649' @ stabiilizer	4-1/2" XH 22.82# DP, screw in sub	Spot oil, surface jar. Stuck 1-1/2 days.	Freed BHA in 2 hrs., 20 mins.	Continue Drilling
Jones Co., MS	BHA	Hole collapse	Vertical	220' / shallow	4-1/2" HWDP at rotary / BHA	Work pipe, wash along side, est. circ. Stuck 2 days.	Freed BHA in 7 mins.	POOH
Wharton Co., TX	Screen	Sand	Vertical	4,100' / 4,060'	2-3/8" 4.7# EUE J-55, overshot	Part screen, wash over 4 ft. Stuck 1 day.	Freed 40' remaining screen in 16 mins.	Recomplete
Victoria Co., TX	Wash pipe	Sand	Vertical	4,300' / 4,270'	2-3/8" 4.7# EUE J-55, overshot	Mill, jar. Stuck 2 days.	Freed in WP 1 hr., 42 mins.	Recomplete
Bienville Parish, LA	Tubing	Salt	Vertical	3,800' / 3,500'	7" 23# 8rd Tbg.	Work pipe. Stuck 1 day.	Freed Tbg. in 2 mins.	Recomplete
Jones Co., MS	Strip over wireline logging tool	Differential	Deviated	16,394' / 8,791'	5" 19.5# DP, overshot	Spot diesel, work pipe. Stuck 2 days.	Freed DP & overshot in 57 mins.	POOH
Evangeline Parish, LA	Seal assembly	Mechanical	Vertical	12,000' / ~12,000'	2-7/8" 6.5# PH-6	Work pipe. Stuck 1 day.	Free seals in 4 hrs.	POOH
OCSG 04473	Slot recovery	Mud stuck	Vertical	4,000' / 3,000'	5" 19.5# DP, spear, 7-5/8" 29.7# Csg.	Cut Csg. @ 4,000' and 53' to remove Csg. slips	Freed to 3,800'. Cut Csg. @ 3,600'. Total vibration time of 137 mins.	POOH, continue sidetrack program
Hood Co., TX	Multi-zone frac	Sand	Horizontal (KOP @ 5,223')	8,714' / ~5,500' (bit @ 8,337)	2-7/8" 6.5# EUE, N-80, 4-3/4" bit	Work pipe. Attempt circulation. Stuck > 7 days.	Freed tubing and bit in ~ 11 hrs.	Complete well
Leon Co., TX	BHA	Key Seat	Dog Legged	~10,000' / ~3,800 (@ 20° dog leg)	5" 19.5# DP, 24 x 8" DC's, 10-5/8" Bit	Wait for VTI. Stuck ~ 16 hrs.	Freed BHA < 30 mins.	Continue Drilling
Jack Co., TX	Parted braided rope	Mechanical	Horizontal (KOP @ 4,462')	TMD 8,395' / rope spear @ 6,346'	2-3/8" 5.95# PH-6, accel., DC's, bumper sub, bulldog rope spear	Jarred 20 hrs., moved 120' with no further progress.	Freed BHA in < 12.5 hrs. actual vibrating time over a 5 day period.	POOH
Jackson Parish, LA	J-Latch Seal Assembly	Mechanical	Vertical	12,444' / 12,444'	2-3/8" 4.7# EUE N-80 / 10' seal assembly	Work pipe one day, no movement.	Freed 10' seal assembly in < 40 mins.	POOH
Iberville Parish, LA	Packer	Mechanical	Vertical	~1,300' / ~1,100'	2-3/8" 4.7# 8rd / spear	Worked pipe, cut below packer	Freed in < 1 hr., parted 50' below incomplete cut in screen blank	POOH

VIBRATION TECHNOLOGY
Innovative Technology for Removing Stuck Tubulars

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Product / Service Information

INNOVATIVE TECHNOLOGY FOR REMOVING STUCK TUBULARS

Any stuck pipe situation that may respond to the conventional application of tension, compression, reciprocation, or percussion will respond favorably to the application of vibration. Vibration Technology specializes in providing resonant pipe vibration services to the upstream oil and gas industry. Expertise in and exclusive focus on the technology has resulted in the development of reliable and safe operating equipment, highly experienced personnel, sound operating procedures, and excellent operational results.

Vibration Technology, Inc.

Innovative Technology for Removing Stuck Tubulars

Vibration Technology, Inc.

Since 1997, Vibration Technology has been providing pipe vibration services to the oil and gas industry. Pipe vibration is used to free and recover stuck pipe in both drilling and workover applications. A surface operated, hydraulically driven, mechanical oscillator is used to induce axial standing wave vibration into the pipe work string and that vibration is transmitted by the work string to the downhole stuck interval. Over an approximate 10-year period, the company has worked on hundreds of wells involving wide-ranging applications and has achieved an enviable record of success.

Vibration Technology is becoming the industry standard for the recovery of stuck pipe. Over an approximate 10-year period, the company has worked on hundreds of wells involving wide-ranging applications and has achieved an enviable record of success.

DRILLING APPLICATIONS

• DIFFERENTIAL • KEYSEAT • HOLE COLLAPSE

Drilling applications have included the recovery of differential, key-seated, and mechanically stuck drilling assemblies. Stuck casing and liners, whether running or retrieving, have often responded favorably to pipe vibration. Casing recovery for sidetrack or slot recovery has proven to be an excellent application.
In addition to a long history of demonstrated results, pipe vibration in drilling operations can often be underway or even completed in less total time and at lower risk than most alternatives.

WORKOVER APPLICATIONS

SUCKER RODS	SUBMERSIBLE PUMPS
TUBING ANCHORS	RETRIEVABLE PACKERS
SEAL ASSEMBLIES	GRAVEL PACK TOOLS
GRAVEL PACK SCREENS	SLOTTED LINERS
MUD STUCK TUBULARS	TUBING HANGERS
COIL TUBING	PERFORATING GUNS

Workover and completion applications include the recovery of well tubing, coil tubing, and velocity strings that are sand, mud, or mechanically (junk) stuck. Additionally, pipe vibration will recover stuck washover pipe, jar assemblies, milling, and other conventional downhole tools that may have become stuck.

Equipment to Meet Your Requirements

Vibration Technology presently operates six sizes of mechanical oscillators with hook load capacities ranging from 50 to 500 thousand pounds. Each unit is skid mounted for ease of handling and comes with an appropriate hydraulic power unit. VT transports its vibration units designed for workover service with company operated vehicles. All higher capacity units are transported via commercial trucking. Ancillary tools required for all of our mechanical oscillators include an appropriate set of elevators, crossover subs, and safety valves for well control purposes. A side-entry pump-in sub is required when circulation may be desirable in conjunction with pipe vibration.

Vibration is Quick and Easy to Apply

Any stuck pipe event, with all of its ominous implications, can be resolved very efficiently through the application of vibration. The vibration procedure has been used to recover stuck pipe in less than a day that in some instances had taken as much as 50 days by conventional methods on an adjacent sister well. In many applications where vibration has been applied the work was done after at least a jarring operation was attempted and on numerous occasions vibration has recovered stuck pipe even with the jar assembly still in place.

Whenever time and reduction of risk has value then vibration offers a potentially huge operational and economic advantage. Optimizing the opportunity for vibration only requires that sound judgments be made and exercised in the initial conduct of any stuck pipe recovery operation.

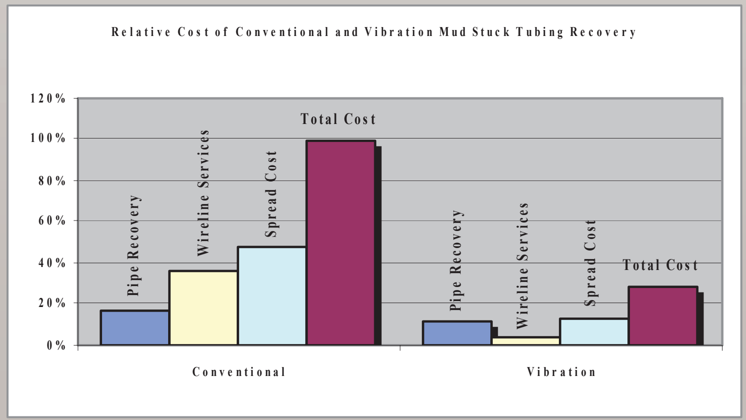
Economic Benefits

The daily cost of vibration services is comparable to traditional fishing services. The differentiator is time and ancillary services required to achieve the desired result. Vibration substantially reduces time to completion thus providing a superior economic advantage and elimination of undue risk.

Less rig time

Less ancillary cost

Less risk of complications



Operating Time Frame

Vibration will usually produce some change in the stuck situation within several hours of operation. Noticeable change often begins with an increase in pipe stretch indicating that some of the stuck pipe has become free and then leading to actual pipe string movement before the pipe becomes completely free. Operational experience has shown that some change should occur within 4 to 6 hours of vibration operation. While vibration results are often immediate it is not unusual for the process to take a few hours and a few specific applications such as the recovery of mud stuck tubing and casing may require an extended period of operation chiefly due to the relatively long lengths of stuck pipe that may be involved.

Benefits of Pipe Vibration:

- **Low risk** approach to pipe recovery.
- **Rigs up at surface** and operates in the derrick so little or no downhole intervention is required.
- Vibration generally **does not require free point and back off** procedures.
- **Substantial reduction** in the number of pipe trips required to recover any stuck downhole pipe or equipment.
- **Demonstrated Results**. Vibration equipment and methods have succeeded in stuck pipe recovery even after all else has failed.
- **Quick to Apply.** With very little preparatory work required, pipe vibration operations can often be underway or even completed in less total time than most alternatives.

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