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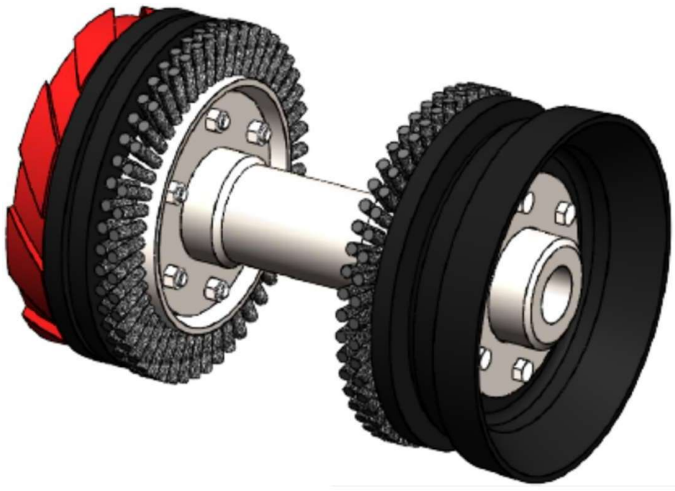
# Full Metal Jacket Field Report

## 12” Cleaning Program

## Sweeny, Texas

Prepared by: Kelly Mcdonald



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**Overview**

A pipeline operator was experiencing issues with effectively and economically cleaning this pipeline using the current offering of cleaning tools with their existing cleaning tools suppliers.

McDonald Oilfield Operations was engaged to provide their Full Metal Jacket cleaning pig for use in a 12” NGL Pipeline based in Sweeny, Texas. The pipeline details are:

| Pipeline | Length | WT | Product |
|---|---|---|---|
| Sweeny, TX | 10.2mi | .375-.500 | NGL |

**Scope of Work**

Pipeline Cleaning for the CP Chem Lateral pipeline segment in Sweeny, TX for the purpose of preparing the pipeline for an in-line Inspection program. The Client was experiencing sludge and ferrous material at the trap. This has impacted their ability to achieve successful first run in-Line Inspections.

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**Procedure**

The pipeline operator plans to run several cleaning tools over the span of 3 days beginning May 11th 2022.

On May 11th 2022, McDonald Oilfield Operations arrived onsite in Sweeny, TX to facilitate running the FMJ Pig alongside the existing 12" TDW Cleaning tool fleet.

The sequence of Cleaning Tools launched was as follows:

| Run | Date | Pig | Pipeline | Product |
|---|---|---|---|---|
| 1 | 11-May | TDW | Lateral Pipeline | NGL |
| 2 | 11-May | TDW | Lateral Pipeline | NGL |
| 3 | 11-May | TDW | Lateral Pipeline | NGL |
| 4 | 12-May | FMJ | Lateral Pipeline | NGL |
| 5 | 12-May | TDW | Lateral Pipeline | NGL |
| 6 | 12-May | TDW | Lateral Pipeline | NGL |
| 7 | 12-May | FMJ | Lateral Pipeline | NGL |
| 8 | 13-May | TDW | Lateral Pipeline | NGL |
| 9 | 13-May | FMJ | Lateral Pipeline | NGL |
| 10 | 20-May | TDW | Lateral Pipeline | NGL |
| 11 | 20-May | FMJ | Lateral Pipeline | NGL |

| Run | Date | Pig | Pipeline | Product |
|---|---|---|---|---|
| 1 | 14-June | Combo ILI | Lateral Pipeline | NGL |

This pipeline segment has no established cleaning program so the pigs used were deemed to be of sufficient collapsibility to not become stuck in the pipeline thus not impacting deliveries.

The customer was onsite to facilitate running the pigs and dictated the sequence the pigs were to be launched.

This report is based on observations in the field during this cleaning program.

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## Pig #1 Results (TDW 12” Delran body w/Magnets)

**Observations**: The Tool was routinely trapped with approx. ~1 gallon of soft debris and some ferrous material on the magnets.

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## Pig #2 Results (TDW 12” Delran body w/Magnets)

**Observations**: The Tool was routinely trapped with < 1 Gallon of debris and some ferrous material on the magnets primarily on the 6 o’clock position.

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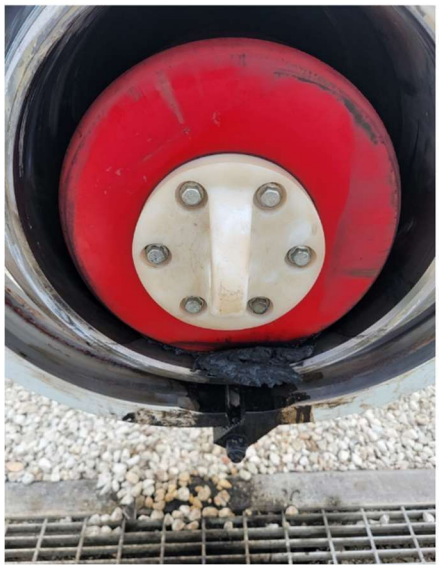
## Pig #3 Results (TDW 12” Delran body w/Magnets)



**Observations**: The Tool was routinely trapped with < 1 gallon of debris and some ferrous material on the magnets primarily on the 6 o’clock position. Very little residual debris in the barrel at trap.

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## Pig #4 Results (Full Metal Jacket - 12” SS body w/ Internal Magnet Stack)

**Observations**: The Tool was routinely trapped with <1 gallon of debris however, noticeably more ferrous material on the magnet stack circumferentially on the tool body.

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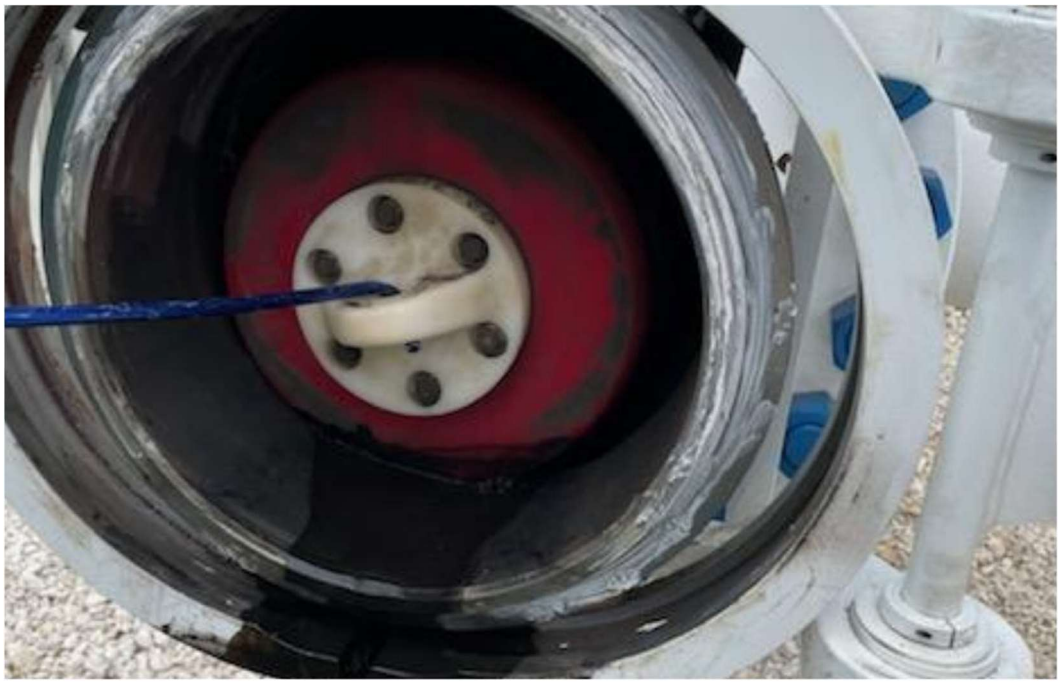
## Pig #5 Results (TDW 12” Delran body w/Magnets)



**Observations**: The Tool was routinely trapped with < 1 gallon of debris and some ferrous material on the magnets. Very little residual debris in the barrel at trap. Similar to Pig 3.

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## Pig #6 Results (TDW 12” Delran body w/Magnets)

**Observations**: The Tool was routinely trapped with < 1 gallon of debris and very little ferrous material on the magnets. No residual debris in the barrel at trap to report.

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## Pig #7 Results (Full Metal Jacket - 12” SS body w/ Internal Magnet Stack)

**Observations**: The Tool was routinely trapped with no noticeable sludge in the pig. There was noticeable amount of ferrous material on the magnet stack on the body of the pig. This measured ~1” in depth on the tool on the body only. No residual debris in the barrel at trap to report.

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## Pig #8 Results (TDW 12” Delran body w/Magnets)


**Observations**: The Tool was routinely trapped with no noticeable sludge in the pig. There was some ferrous material on the magnet disk toward the rear of the tool. No residual debris in the barrel at trap to report.

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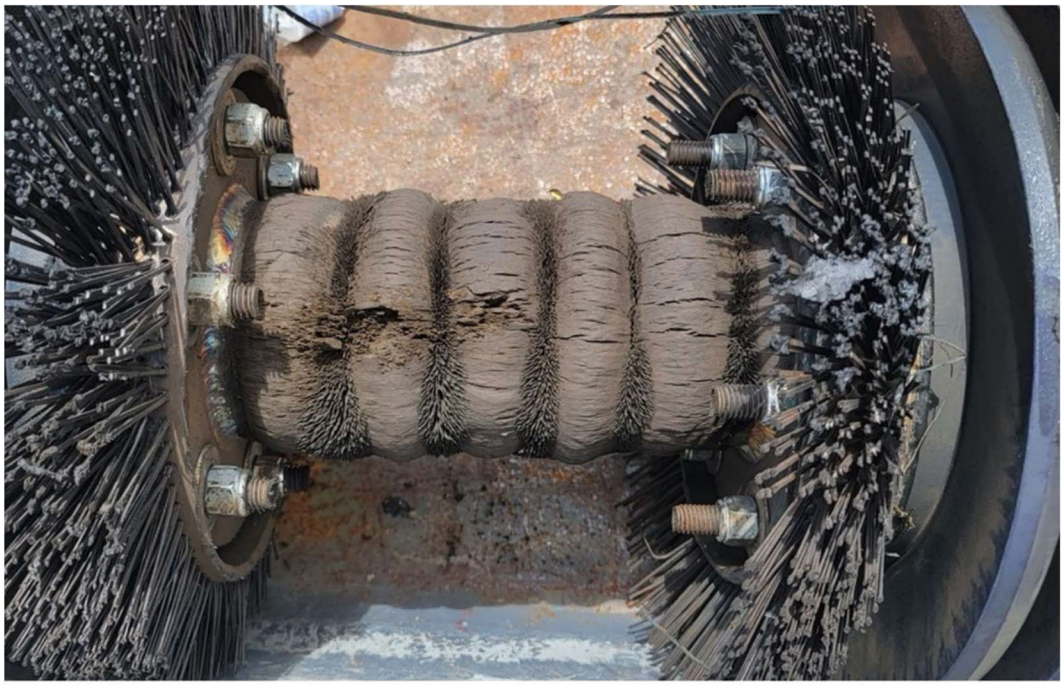
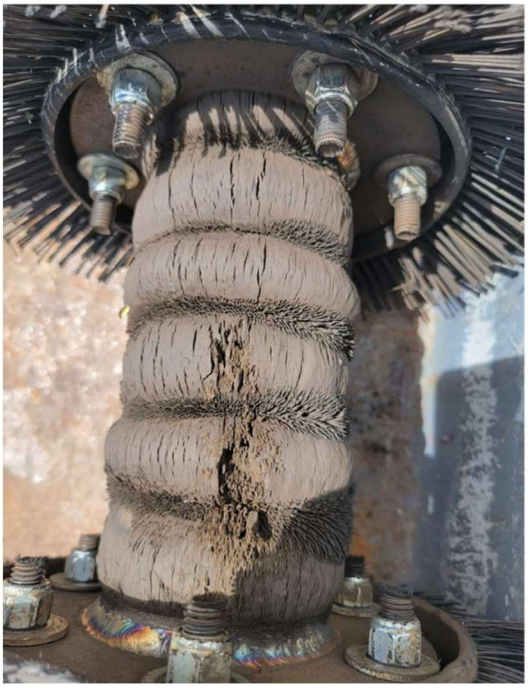
## Pig #9 Results (Full Metal Jacket - 12” SS body w/ Internal Magnet Stack)





**Observations**: The Tool was routinely trapped with no noticeable sludge in the pig. There was still a noticeable amount of ferrous material on the magnet stack on the body of the pig. This measured ~3/4” in depth on the tool on the body only. No residual debris in the barrel at trap to report.

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## Pig #10 Results (TDW 12” Delran body w/Magnets)


**Observations:** The Tool was routinely trapped with no noticeable sludge in the pig. There was some ferrous material on the magnet disk toward the rear of the tool. No residual debris in the barrel at trap to report.

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## Pig #11 Results (Full Metal Jacket - 12” SS body w/ Internal Magnet Stack)

**Observations:** This was the final run of this cleaning campaign. The decision was made to run the FMJ Pig without brushes to measure the effect of the FMJ magnet stack. As noted in the pictures, the pigwas still able to capture an ample amount of ferrous material at the trap.

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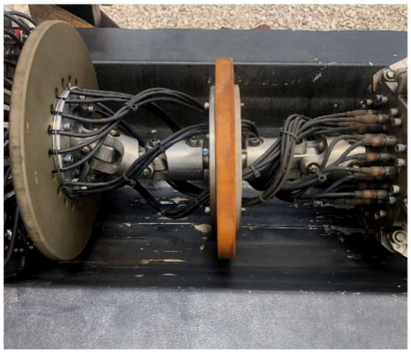
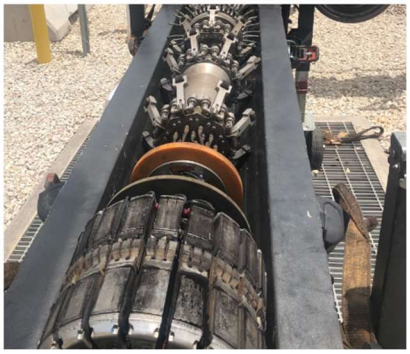
## ILI Tool Results – Sled Based Combo Tool





**Observations:** This was the 1st run of this ILI Inspection campaign. The tool was trapped with a minimal amount of debris. The Cleaning program was deemed a success.

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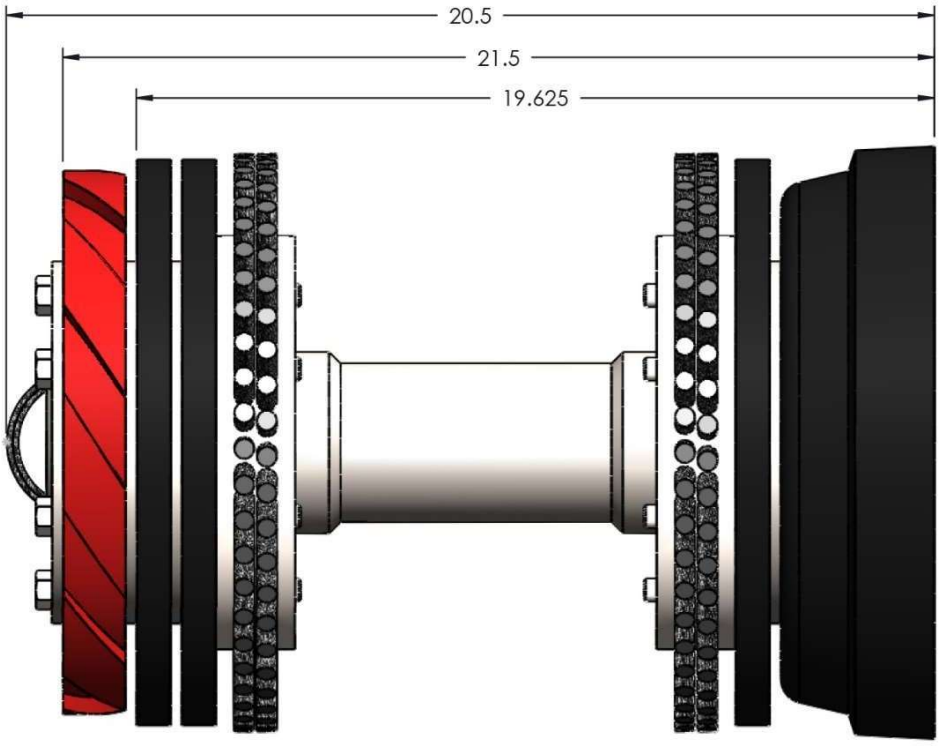
# 12” Full Metal Jacket Cleaning Tool




| Length | Weight | Magnet Surface Area |
|---|---|---|
| 20.5" | 53.2lbs | 98.96sq " |

For more information, please contact

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