YEARS

HONOURING THE PAST, MAKING THE FUTURE.

Wells Compliance Smart Dashboard

How to Digitalise exploration and wells.

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Agenda

Background

Challenges & Impact

Solutions

How did we do it

Business Value & Future Improvement

Question and Answer

Execute Program Wells

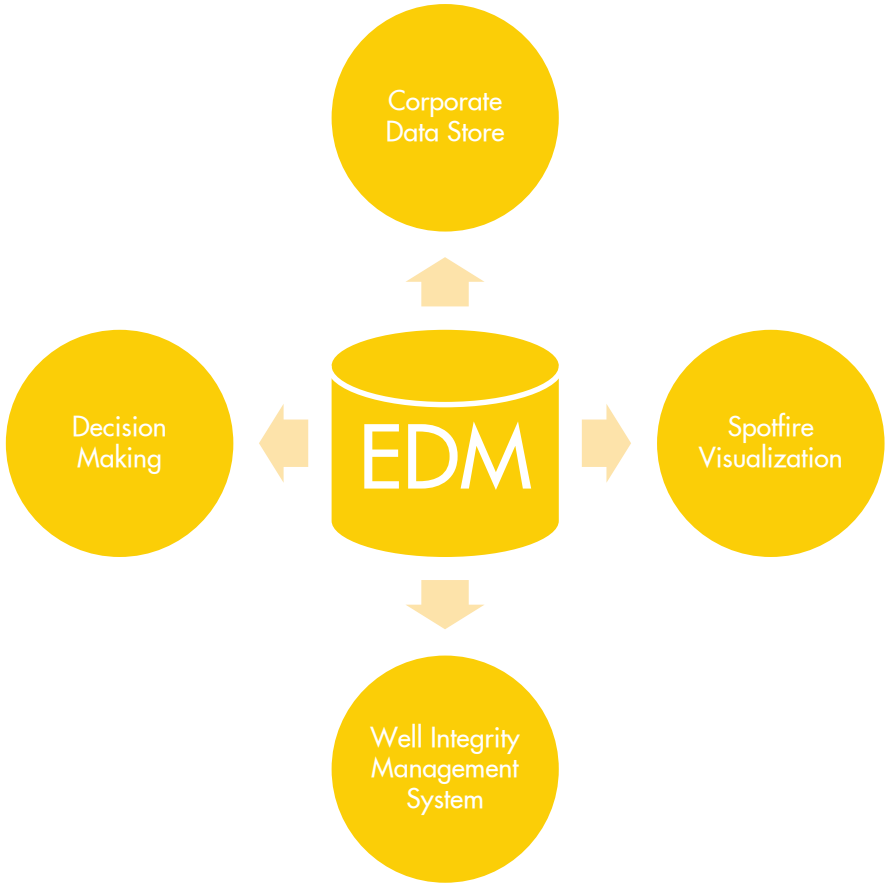
- Drill well as per programme
- Rig team record well's data

30 days post Event

- Checking reports and amendments
- Verifying and QAQC

Approved Well Status Diagram

- WSD has been verified and approved
- Verified well's information readily available



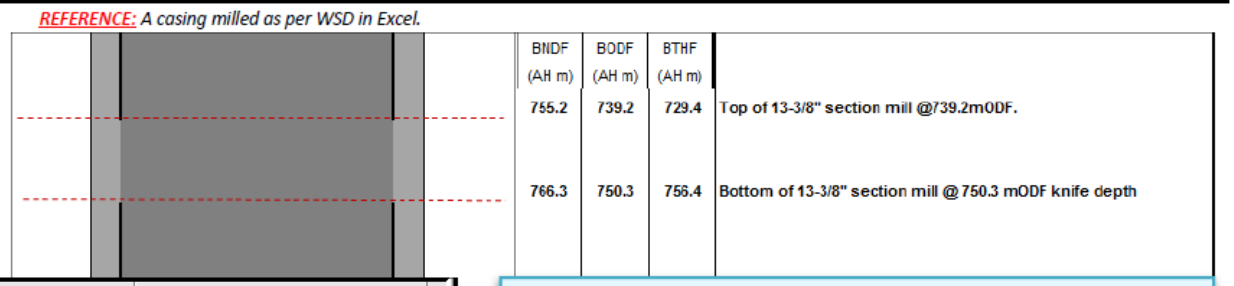
Challenges and Impact

What are the challenges that we currently faced and what are the impacts to current business process

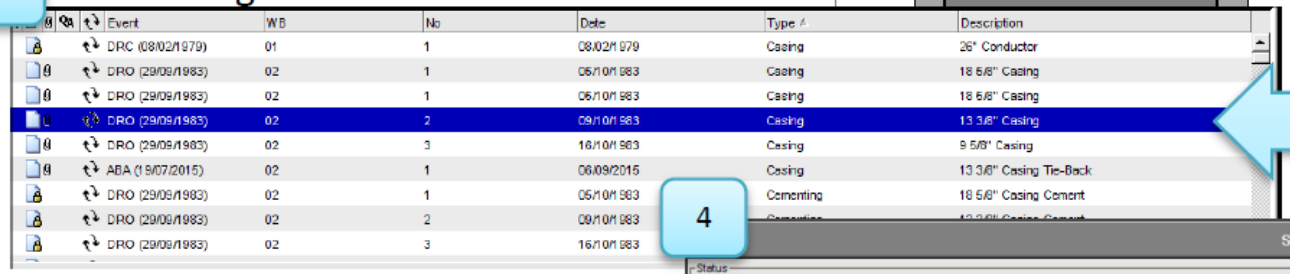
EDM R5000 Create a Milling Casing Report in Openwells "One Pager"

In order to create a milled casing report we need to edit / modify the existing Casing Report. Identify the top part of the casing, the milled section of the casing and the bottom part of the casing. ***Note: Everything must be entered in ODFE inside EDM***

1. Launch **OpenWells.**
2. ***Highlight*** a well , then ***Click*** and go into ***the existing or created Casing Report*** of the Casing where it is milled.



2



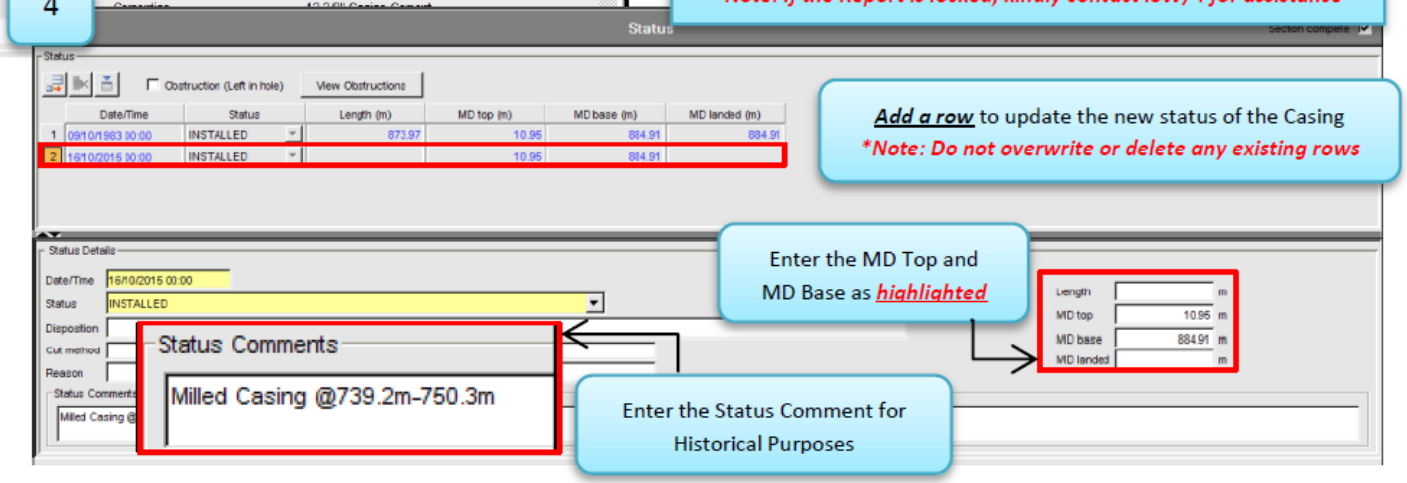
!! Important !!

Click into an ***existing or created Casing Report*** Identify the Top Part of the Casing, the Milled Section of the Casing and the Bottom Part of the casing where it is milled.

Note: If the Report is locked, kindly contact ISW/4 for assistance

3. In ***General Tab***, no changes are made unless there is a change of the MD Top of the Casing.
4. In ***Status Tab***, ***Click*** to ***Add a row*** to update the new status of the casing. Fill the required fields ***highlighted***.

4

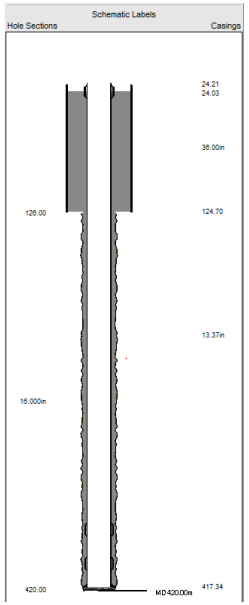


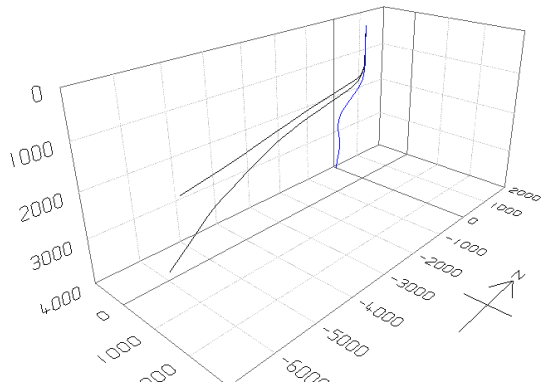
Add a row to update the new status of the Casing

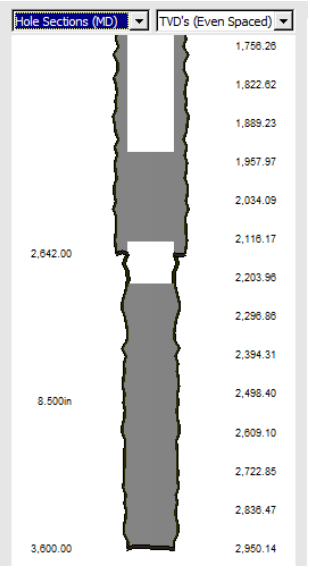
Note: Do not overwrite or delete any existing rows

Enter the MD Top and MD Base as ***highlighted***

Enter the Status Comment for Historical Purposes







	LOT/FIT	Date	MD (m)	TVD test (m)	EMW (kPa/m)	Mud Weight (kPa/m)
1	FIT	01/01/2007	1,000.00	1,000.00	17.50	15.00

LOT/FIT	FIT	
Date	01/01/2007	
MD	1,000.00	m
TVD test	1,000.00	m
Mud Weight	15.00	kPa/m
Surface press.	2,500.00	kPa
BHP	17,499.95	kPa
EMW	17.50	kPa/m

Details

Common well name	W-123
Legal well name	WELL-123
UWI (SAP PSN#)	WELL000123
API no.	
Tenure	
Operator	Brunei Shell Petroleum
Well Environment	Subsea
Well Type	Exploration
Well Function	Info Gathering
Well Fluid Type	Gas
Completion Type	Single
Lift Type	No artificial lift

Challenges

High Non value added time

- 80% of resource time spent on checking data quality
- 100 fields to be checked
- Manual dashboard
- High number of activities
- Mobility of Wellsite Drilling Engineer

Impact

- Amendments taking time
- Delay data verification and QAQC
- Delay in producing Well Status diagram

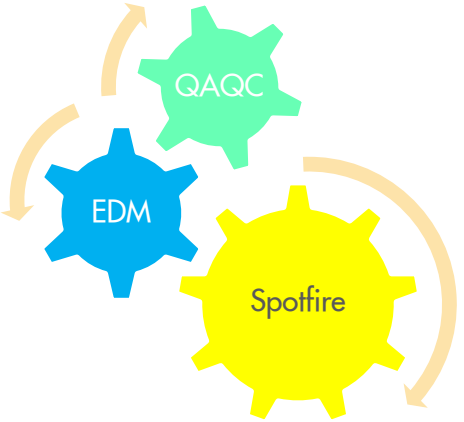
Solutions & Future Improvements

How do we improve the process, removing waste and automate qaqc process.

Solutions – Continuous Improvement approach

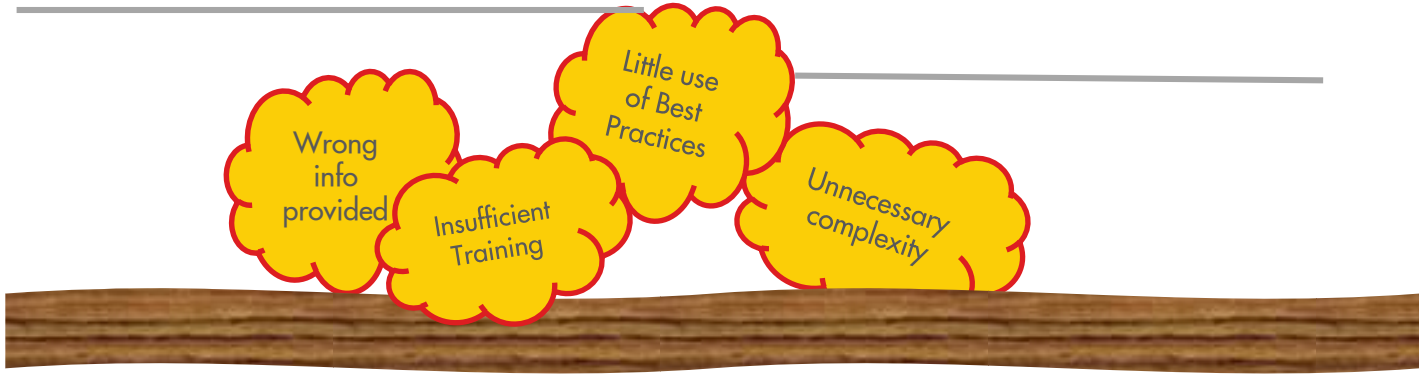
Process Automation

- Spotfire as Live QAQC tool
- Direct connection to data base
- Dynamic dashboard
- Pin point to errors



Remove waste from process

- Hardcoded in Spotfire
- Minimum manual checking
- WSDE can access to live dashboard
- Data approve in time



File Edit Data Visualizations View Tools Help User Editing

WELLS COMPLIANCE SMART TRACKER

PLEASE CLICK ON RIG ICON

RIG A

Overall Report Completeness: 80%

Number of Wells: 10

RIG B

Overall Report Completeness: 100%

Number of Wells: 9

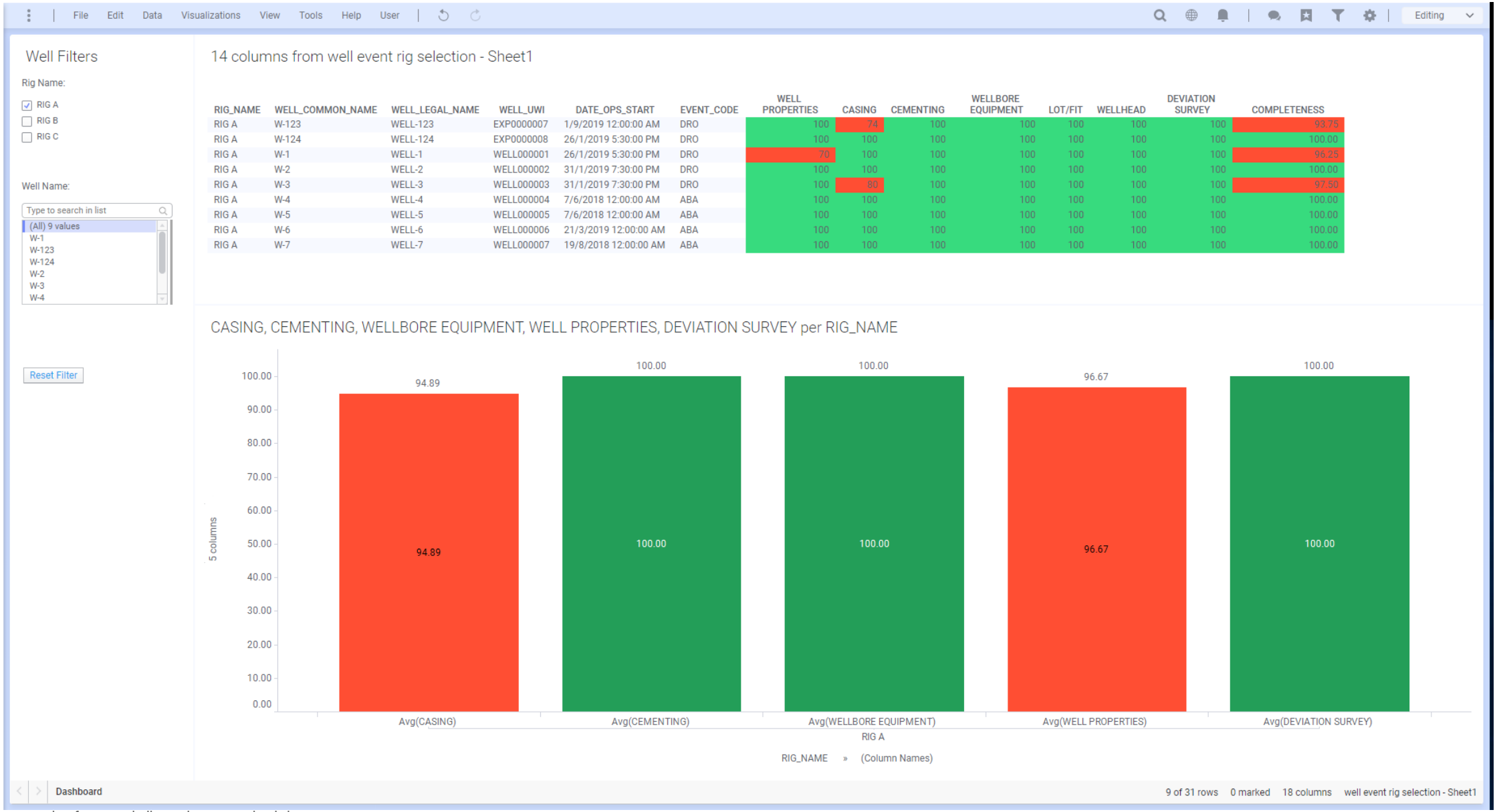
RIG C

Overall Report Completeness: 98%

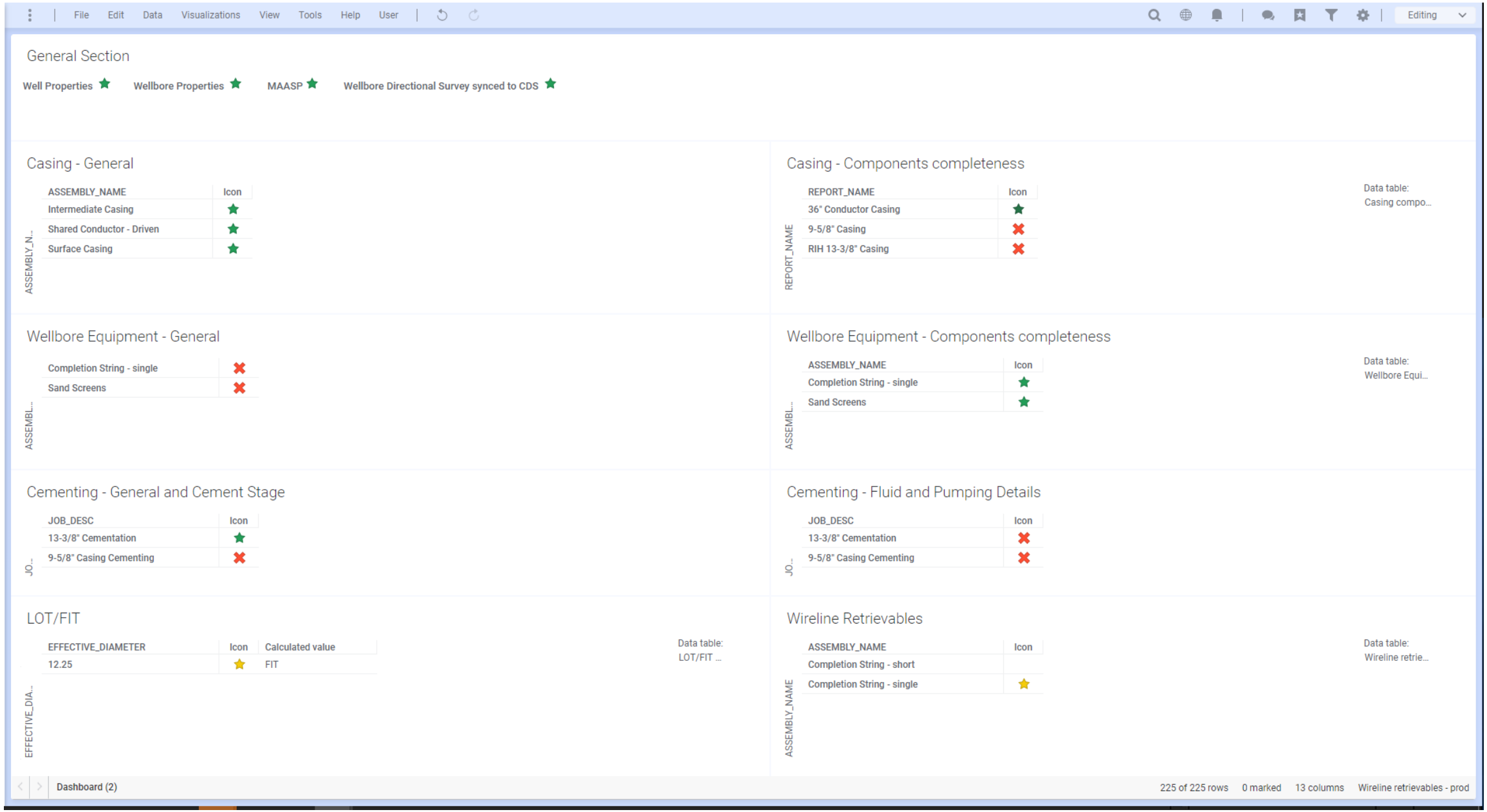
Number of Wells: 7

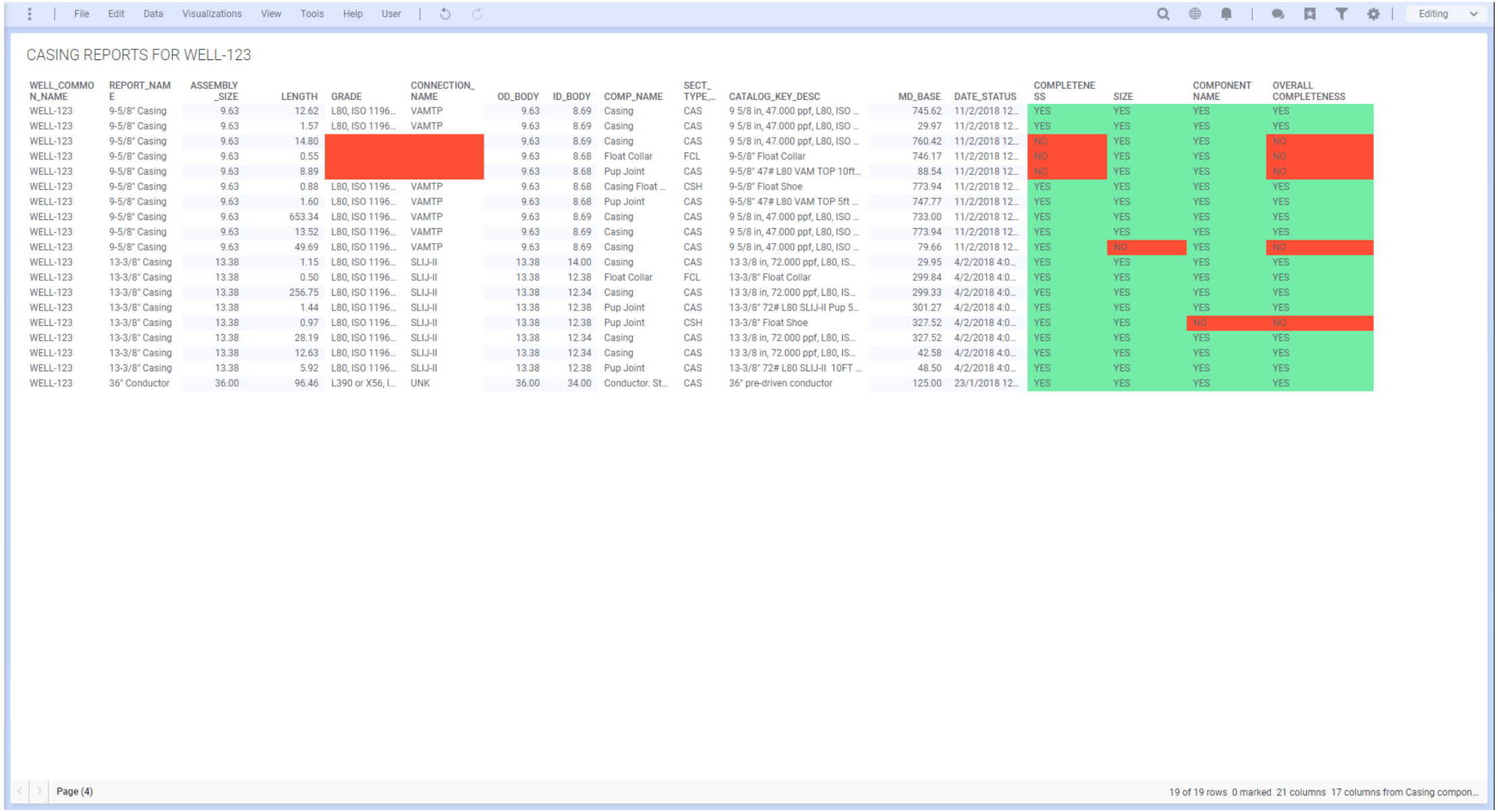
HOME

No active visualization



RIG_NAME	WELL_COMMON_NAME	WELL_LEGAL_NAME	WELL_UWI	DATE_OPS_START	EVENT_CODE	WELL PROPERTIES	CASING	CEMENTING	WELLBORE EQUIPMENT	LOT/FIT	WELLHEAD	DEVIATION SURVEY	COMPLETENESS
RIG A	W-123	WELL-123	EXP0000007	1/9/2019 12:00:00 AM	DRO	100	74	100	100	100	100	100	93.75
RIG A	W-124	WELL-124	EXP0000008	26/1/2019 5:30:00 PM	DRO	100	100	100	100	100	100	100	100.00
RIG A	W-1	WELL-1	WELL000001	26/1/2019 5:30:00 PM	DRO	70	100	100	100	100	100	100	96.25
RIG A	W-2	WELL-2	WELL000002	31/1/2019 7:30:00 PM	DRO	100	100	100	100	100	100	100	100.00
RIG A	W-3	WELL-3	WELL000003	31/1/2019 7:30:00 PM	DRO	100	80	100	100	100	100	100	97.50
RIG A	W-4	WELL-4	WELL000004	7/6/2018 12:00:00 AM	ABA	100	100	100	100	100	100	100	100.00
RIG A	W-5	WELL-5	WELL000005	7/6/2018 12:00:00 AM	ABA	100	100	100	100	100	100	100	100.00
RIG A	W-6	WELL-6	WELL000006	21/3/2019 12:00:00 AM	ABA	100	100	100	100	100	100	100	100.00
RIG A	W-7	WELL-7	WELL000007	19/8/2018 12:00:00 AM	ABA	100	100	100	100	100	100	100	100.00


File Edit Data Visualizations View Tools Help User
Editing
General Section
Well Properties
Wellbore Properties
MAASP
Wellbore Directional Survey synced to CDS
Casing - General
ASSEMBLY_NAME
Icon
Intermediate Casing
Shared Conductor - Driven
Surface Casing
Casing - Components completeness
REPORT_NAME
Icon
36" Conductor Casing
9-5/8" Casing
RIH 13-3/8" Casing
Data table:
Casing compo...
Wellbore Equipment - General
ASSEMBL...
Completion String - single
Sand Screens
Wellbore Equipment - Components completeness
ASSEMBLY_NAME
Icon
Completion String - single
Sand Screens
Data table:
Wellbore Equi...
Cementing - General and Cement Stage
JO...
JOB_DESC
Icon
13-3/8" Cementation
9-5/8" Casing Cementing
Cementing - Fluid and Pumping Details
JO...
JOB_DESC
Icon
13-3/8" Cementation
9-5/8" Casing Cementing
LOT/FIT
EFFECTIVE_DIA...
EFFECTIVE_DIAMETER
Icon
Calculated value
12.25
FIT
Data table:
LOT/FIT ...
Wireline Retrievables
ASSEMBLY_NAME
Icon
Completion String - short
Completion String - single
Data table:
Wireline retrie...
Dashboard (2)
225 of 225 rows
0 marked
13 columns
Wireline retrievables - prod



WELL_COMMON_NAME	REPORT_NAME	ASSEMBLY_SIZE	LENGTH	GRADE	CONNECTION_NAME	OD_BODY	ID_BODY	COMP_NAME	SECT_TYPE_...	CATALOG_KEY_DESC	MD_BASE	DATE_STATUS	COMPLETENESS	SIZE	COMPONENT NAME	OVERALL COMPLETENESS
WELL-123	9-5/8" Casing	9.63	12.62	L80, ISO 1196...	VAMTP	9.63	8.69	Casing	CAS	9 5/8 in, 47.000 ppf, L80, ISO ...	745.62	11/2/2018 12...	YES	YES	YES	YES
WELL-123	9-5/8" Casing	9.63	1.57	L80, ISO 1196...	VAMTP	9.63	8.69	Casing	CAS	9 5/8 in, 47.000 ppf, L80, ISO ...	29.97	11/2/2018 12...	YES	YES	YES	YES
WELL-123	9-5/8" Casing	9.63	14.80			9.63	8.69	Casing	CAS	9 5/8 in, 47.000 ppf, L80, ISO ...	760.42	11/2/2018 12...	NO	YES	YES	NO
WELL-123	9-5/8" Casing	9.63	0.55			9.63	8.68	Float Collar	FCL	9-5/8" Float Collar	746.17	11/2/2018 12...	NO	YES	YES	NO
WELL-123	9-5/8" Casing	9.63	8.89			9.63	8.68	Pup Joint	CAS	9-5/8" 47# L80 VAM TOP 10ft...	88.54	11/2/2018 12...	NO	YES	YES	NO
WELL-123	9-5/8" Casing	9.63	0.88	L80, ISO 1196...	VAMTP	9.63	8.68	Casing Float ...	CSH	9-5/8" Float Shoe	773.94	11/2/2018 12...	YES	YES	YES	YES
WELL-123	9-5/8" Casing	9.63	1.60	L80, ISO 1196...	VAMTP	9.63	8.68	Pup Joint	CAS	9-5/8" 47# L80 VAM TOP 5ft ...	747.77	11/2/2018 12...	YES	YES	YES	YES
WELL-123	9-5/8" Casing	9.63	653.34	L80, ISO 1196...	VAMTP	9.63	8.69	Casing	CAS	9 5/8 in, 47.000 ppf, L80, ISO ...	733.00	11/2/2018 12...	YES	YES	YES	YES
WELL-123	9-5/8" Casing	9.63	13.52	L80, ISO 1196...	VAMTP	9.63	8.69	Casing	CAS	9 5/8 in, 47.000 ppf, L80, ISO ...	773.94	11/2/2018 12...	YES	YES	YES	YES
WELL-123	9-5/8" Casing	9.63	49.69	L80, ISO 1196...	VAMTP	9.63	8.69	Casing	CAS	9 5/8 in, 47.000 ppf, L80, ISO ...	79.66	11/2/2018 12...	YES	NO	YES	NO
WELL-123	13-3/8" Casing	13.38	1.15	L80, ISO 1196...	SLIJ-II	13.38	14.00	Casing	CAS	13 3/8 in, 72.000 ppf, L80, IS...	29.95	4/2/2018 4:0...	YES	YES	YES	YES
WELL-123	13-3/8" Casing	13.38	0.50	L80, ISO 1196...	SLIJ-II	13.38	12.38	Float Collar	FCL	13-3/8" Float Collar	299.84	4/2/2018 4:0...	YES	YES	YES	YES
WELL-123	13-3/8" Casing	13.38	256.75	L80, ISO 1196...	SLIJ-II	13.38	12.34	Casing	CAS	13 3/8 in, 72.000 ppf, L80, IS...	299.33	4/2/2018 4:0...	YES	YES	YES	YES
WELL-123	13-3/8" Casing	13.38	1.44	L80, ISO 1196...	SLIJ-II	13.38	12.38	Pup Joint	CAS	13-3/8" 72# L80 SLIJ-II Pup 5...	301.27	4/2/2018 4:0...	YES	YES	YES	YES
WELL-123	13-3/8" Casing	13.38	0.97	L80, ISO 1196...	SLIJ-II	13.38	12.38	Pup Joint	CSH	13-3/8" Float Shoe	327.52	4/2/2018 4:0...	YES	YES	NO	NO
WELL-123	13-3/8" Casing	13.38	28.19	L80, ISO 1196...	SLIJ-II	13.38	12.34	Casing	CAS	13 3/8 in, 72.000 ppf, L80, IS...	327.52	4/2/2018 4:0...	YES	YES	YES	YES
WELL-123	13-3/8" Casing	13.38	12.63	L80, ISO 1196...	SLIJ-II	13.38	12.34	Casing	CAS	13 3/8 in, 72.000 ppf, L80, IS...	42.58	4/2/2018 4:0...	YES	YES	YES	YES
WELL-123	13-3/8" Casing	13.38	5.92	L80, ISO 1196...	SLIJ-II	13.38	12.38	Pup Joint	CAS	13-3/8" 72# L80 SLIJ-II 10FT ...	48.50	4/2/2018 4:0...	YES	YES	YES	YES
WELL-123	36" Conductor	36.00	96.46	L390 or X56, I...	UNK	36.00	34.00	Conductor. St...	CAS	36" pre-driven conductor	125.00	23/1/2018 12...	YES	YES	YES	YES

Business Value

- Free up resources time
- Automation & Live
- Utilization & building of in-house capability
- Cost efficiency

Future Improvements

- Incorporate Daily Ops Report in tools
- Data in attachments
- Rule book in EDM
- EDM training for WSDE

Questions and Answers

HONOURING THE PAST, MAKING THE FUTURE.