



TIGER 2022



TIGER – Using Cutting Edge Technologies to Deliver Real Time Results on the Web



USING PROGRESSIVE WEB
APPLICATION DEVELOPMENT



BUILT FOR OPTIMAL
PERFORMANCE



OPTIMIZED FOR USE ON ALL
DEVICES – DESKTOP AND MOBILE

Intuitive Menus and Navigation

The screenshot displays a software interface with a dark sidebar on the left and a main content area. The sidebar contains a logo 'TIGER' and a list of navigation items: 'Back To Projects', 'Test - TK2', 'Schematics', 'Intervals' (highlighted in blue), 'SVD', 'Equipment', 'Calculation Pages', 'Calculation Verification', 'End Of Well Summary', 'ROC Well Retort', 'Excel Report', and 'ROC Interval SVD'. The top navigation bar is green and shows a user profile 'gail@dev4.online'. The main content area is titled 'Intervals' and features a table with columns: Interval No., Type, Date, Start Depth, End Depth, and Schema. The table contains 14 rows of data, with the first row (Interval No. 13) being a 'Zero Discharge' and the others being 'Regular'. Each row has a red trash icon in the right margin. A search bar and a 'Show Active' filter are located above the table. At the bottom, there is a pagination control showing '1' and a status '1 - 14 of 14 items'.

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Back To Projects

Test - TK2

Schematics

Intervals

SVD

Equipment

Calculation Pages

Calculation Verification

End Of Well Summary

ROC Well Retort

Excel Report

ROC Interval SVD

Intervals

Show Active Search...

Interval No.	Type	Date	Start Depth	End Depth	Schema
13	Zero Discharge	08 Feb 2022	20515	20635	Schematic Z
12	Regular	01 Feb 2022	20314	20700	Schematic C
11	Regular	31 Jan 2022	20086	20354	Schematic C
10	Regular	30 Jan 2022	19722	20086	Schematic C
9	Regular	30 Jan 2022	19222	19722	Schematic C
8	Regular	29 Jan 2022	18986	19222	Schematic C
7	Regular	29 Jan 2022	18486	18986	Schematic C
6	Regular	29 Jan 2022	17986	18486	Schematic C
5	Regular	28 Jan 2022	17386	17986	Schematic C
4	Regular	28 Jan 2022	16868	17368	Schematic C
3	Regular	28 Jan 2022	16368	16868	Schematic C
0	Non Reportable Discharge	27 Jan 2022	16318	16368	Schematic C

1 - 14 of 14 items

Accurate Real Time Validation and Calculations

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[Back To Projects](#)

Test - TK2

- Schematics
- Intervals
- SVD
- Equipment
- ROC Interval
- Calculation Pages
- Calculation Verification
- End Of Well Summary
- ROC Well Retort
- Excel Report
- ROC Interval SVD

[Regular] [Measured] Interval No [12] Schematic [Schematic C]

Start Depth	End Depth	Begin Date	Input By	Comments	Sampling Interval Footage	Sampling Interval Volume (vj) (bbbls)	Discharge Rate All Cuttings (kg/min)
<input type="text" value="20314"/>	<input type="text" value="20700"/>	<input type="text" value="01/02/20"/>	<input type="text" value="Tom Ki..."/>	<div style="border: 1px solid #ccc; height: 100px;"></div>	386.000	36.566	0.011
Bit Size	Hole Opening/Under Reaming <input type="checkbox"/>		Pilot Hole Size		Sampling Interval ROC (%BF tj)	Well Avg ROC (%BF WELL)	Total NAF Footage (ft)
<input type="text" value="9.875"/>			<input type="text"/>		6.250	4.352	4864.000

Samples (Max [1])

Sample No	Source	Depth	Volume	Taken By	
1	Primary Shakers	20537	1	Tom Kirk	

Recording Interval Sample Data: Intuitive and Fast

[Regular] [Measured] Interval No [12] Schematic [Schematic C] ✕

Sampling/Mass Fraction

Sample No	Source of Sample	Sampling Depth	Collection Start Time	Duration Collection	Volume (gal)
<input type="text" value="1"/>	<input type="text" value="Primary Shakers"/>	<input type="text" value="20537"/>	<input type="text" value="13:30"/>	<input type="text" value="10:00"/>	<input type="text" value="1"/>
Mass Sample [Fi] (kg)	Mass Fraction [Xi]	Sample Data Input By			
<input type="text" value="6.9"/>	<input type="text" value="1.000"/>	<input type="text" value="Tom Kirk"/>			

Retorting/ROC

Start Retort Time	Duration Retort Run (Min)	Mass Empty Retort (g)	Retort (g)	Mass Cooled Retort (Dry Cuttings) (g)	Mass Empty Liquid Receiver (g)
<input type="text" value="13:50"/>	<input type="text" value="08:00"/>	<input type="text" value="856.4"/>	<input type="text"/>	<input type="text" value="886.5"/>	<input type="text" value="97.4"/>
Mass Liquids & Receiver (g)	Volume Water (g)	Retort Technician		Mass Balance Requ	
<input type="text" value="104.1"/>	<input type="text" value="4.4"/>	<input type="text" value="Tom Kirk"/>		<input type="text" value="1.000"/>	

13:30 NOW

Hour	Minute
10	27
11	28
12	29
13	30
14	31
15	32
16	33

Allows You to Build Your Own Schematics

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Back To Projects

Test - TK2

- Schematics
- Intervals
- SVD
- Equipment
- Calculation Pages
- Calculation Verification
- End Of Well Summary
- ROC Well Retort
- Excel Report
- ROC Interval SVD

Schematics

Show Active

Drag a column header and drop it here to group by that column

Schematic	Description
Schematic A	Single Discharge - Cuttings Dryer
Schematic B	Two Discharges - Cuttings Dryer
Schematic C	Single Discharges - Shale Shaker
Schematic D	Two Discharges - Primary & Secondary
Schematic E	Three Discharges - Cuttings Dryer Centrifuge
Schematic Z	Zero Discharge Schematic
Schematic F	Two Discharges - Primary Shaker

Manage Schematic: Schematic E

Interval Types

- Non Reportable Discharge**
+ Add to Schematic | Remove | Set Mass Fraction
- Regular**
+ Add to Schematic | Remove | Set Mass Fraction
- Non Retort BMP**
+ Add to Schematic | Remove | Set Mass Fraction
- SVD**
+ Add to Schematic | Remove | Set Mass Fraction
- Zero Discharge**
+ Add to Schematic | Remove | Set Mass Fraction

Mass Fractions: Regular

Measured x

Save Mass Fractions

SCHEMATIC "A": Single Discharge - Cuttings Dryer

The diagram illustrates the flow of drilling fluid and cuttings through various stages of a well. It starts with the 'ACTIVE DRILLING FLUID SYSTEM: PITS, PUMPS' and 'DOWNHOLE: DRILL STRING, ANNULUS, FLOWLINE'. From the downhole, 'NAF MUD & WET CUTTINGS' are sent to 'SHALE SHAKER'S Primary / Secondary'. From the shakers, 'NAF WET CUTTINGS' go to a 'CUTTINGS DRYER'. The dryer produces '"DRYED" CUTTINGS DISCHARGE' which goes to a 'SAMPLE COLLECTION POINT' and 'OCEAN'. 'NAF MUD RETURN' goes back to the 'RESERVE or STORAGE' tank. 'RECOVERED NAF MUD & FINES' are sent to the 'RESERVE or STORAGE' tank via an 'OR' junction.

RESERVE or STORAGE

ACTIVE DRILLING FLUID SYSTEM: PITS, PUMPS

DOWNHOLE: DRILL STRING, ANNULUS, FLOWLINE

SHALE SHAKER'S Primary / Secondary

CUTTINGS DRYER

"DRYED" CUTTINGS DISCHARGE

OCEAN

SAMPLE COLLECTION POINT

NAF MUD & WET CUTTINGS

NAF WET CUTTINGS

NAF MUD RETURN

RECOVERED NAF MUD & FINES

OR

Schematic A Version 1.0

Includes SVD Sample Collection and Analysis

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Back To Projects

Dev4 Test, GOM, GOC, 23

- Schematics
- Intervals
- SVD
- Equipment
- Calculation Pages
- Calculation Verification
- End Of Well Summary
- ROC Well Retort
- Excel Report
- ROC Interval SVD

SVD- Project [Dev4 Test, GOM,GOC,23]

Begin Date	Comments	SVD Roc (%BF SVD)	Well Avg ROC (%BF WELL)	Well Avg ROC (%BF WELL) without SVD
16/02/2022		15.686	4.35 %	4.037
		Xsvd	Well Mass Cuttings (WELL) (kg)	Fsvd
		0.0271	738170.382	20574.933

Update

SVD

Sampling/Mass Fraction
Manual

Sample No	Source of Sample	Sampling Depth	Collection Start Time	Duration Collection	Volume (gal)
1	Pit Clean-out Solids		04:00	02:00	75
Mass Sample [FI] (kg)	Mass Fraction [XI]	Sample Data Input By	Sample Taken By	Density	Sampling Date (dd/MM/yyyy HH:mm)
20574.93	1.000	Tom Kirk	Tom Kirk	14.4	dd/MM/yyyy HH:mm

Retorting/ROC

Start Retort Time	Duration Retort Run (Min)	Mass Empty Retort (g)	Mass Wet Cuttings and Retort (g)	Mass Cooled Retort (Dry Cuttings) (g)	Mass Empty Liquid Receiver (g)
04:30	02:00	850	901	892	51
Mass Liquids & Receiver (g)	Volume Water (g)	Retort Technician	ROC% %BFi	Mass Balance Requ	
60	1	Tom Kirk	15.686 %	1.000	

Update Save & New Cancel

Samples

Show **Active**

Sample No	Source
1	Pit Clean-

Add Sample

Includes Equipment Calibration Logs

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Back To Projects

Test - TK2

- Schematics
- Intervals
- SVD
- Equipment**
- Calculation Pages
- Calculation Verification
- End Of Well Summary
- ROC Well Retort
- Excel Report
- ROC Interval SVD

Equipment Calibration Log

Final NPDES General Permit for new and Existing Sources and New Dischargers in the Offshore Subcategory of the Oil and Gas Extraction Category for the Westen Portion of the Outer Continental Shelf of Section C5. Monitoring Process

a. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit of approved by the Regional Administrator.

b. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instruments at intervals frequent enough to ensure accuracy of measurements and shall maintain appropriate records of such activities.

c. An adequate analytical quality control program including the analysis of sufficient standards, spike and duplicate samples to ensure the accuracy of all required analytical results shall be maintained by the permittee of designated commercial laboratory.

Show Active Search... 🔍 📄 +

Drag a column header and drop it here to group by that column

Date	Item Calibrated	Technician	Comments	
1/28/2022 12:00:00 AM	Liquid Receiver / Glassware	Tom Kirk	Pass	
1/27/2022 12:00:00 AM	Retort QC Test	Tom Kirk	Pass	
1/28/2022 12:00:00 AM	Retort Max. Temperature	Tom Kirk	Pass	
1/28/2022 12:00:00 AM	SBF Fluid Recovery	Tom Kirk	Pass	

Instant PDF Reports With Real Time Accurate Results

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Back To Projects

Dev4 Test, GOM,GOC,23

- Schematics
- Intervals
- SVD
- Equipment
- Calculation Pages
- Calculation Verification
- End Of Well Summary
- ROC Well Retort
- Excel Report
- ROC Interval SVD

Dev4 Test, GOM,GOC,23-ROC Well Retort-10-04-2022.pdf - Adobe Acrobat Reader DC (32-bit)

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Home Tools Dev4 Test, GOM,G... x

1 / 2 125%

ROC Well Retort Log (Tabular Sampling Interval Summary)

Operator Name:		DEV4 Test				Well Name:		DEV4 Test			
Operator Address:						Well Number:					
Spud Date:						Rig Name & Number:					
NAF Base Fluid Type:		IO 16/18 Equiv. 6.9%				OCS-G Number:					
NAF System Trade Name:		BaraECD				NPDES Permit Number					
Mud Company:		Baroid				API Number					

Sampling Interval #	Interval Type	Date (mm/dd/yy)	Start Depth (MD, ft)	End Depth (MD, ft)	Sampling Interval Linear Footage (ft)	Hole Size (in) ***	Pilot Hole Size (in) ***	Start Time Sample Collection (hh:mm)	Start Time Retorting Samples (hh:mm)	Shipping Time Retort Analysis (hh:mm)	Equip Schematic Letter or Number	Sampling Interval Volume Vj (bbl)	Zero Discharge Being Performed? (Y/N)	Volume of Zero Discharged NAF - Cuttings (bbl)
1	Regular	02/06/2022	6000	6500	500	19.5	0	22:00	22:12	23:12	Schematic C	184.69	No	0.00
2	Regular	02/07/2022	6500	7000	500	19.5	0	06:00	06:25	07:25	Schematic B	184.69	No	0.00
3	Regular	02/07/2022	7000	7340	340	19.5	0	14:55	15:20	16:20	Schematic A	125.59	No	0.00
4	Regular	02/08/2022	7340	7612	272	19.5	0	01:00	01:30	02:30	Schematic D	100.47	No	0.00
5	Regular	02/08/2022	7612	7850	238	19.5	0	10:10	10:30	12:30	Schematic E	87.91	No	0.00
6	Zero Discharge	02/10/2022	7850	8000	150	17.5	0				Schematic Z	44.83	Yes	44.83
7	Regular	02/12/2022	8044	8544	500	17.5	0	04:00	04:25	05:25	Schematic C	148.75	No	0.00
8	Regular	02/12/2022	8544	9044	500	17.5	0	08:00	08:30	09:30	Schematic C	148.75	No	0.00
9	Regular	02/12/2022	9044	10600	1856	19.5	0	17:00	17:20	18:20	Schematic C	685.59	No	0.00
10	Non Retort BMP	02/13/2022	10900	11400	500	17.5	0				Schematic C	148.75	No	0.00
	SVD	02/16/2022			0		0	03:00	03:30	04:30	SVD	0.00	No	0.00

*** Report all depths as measured depth (MD) from the rotary kelly bushing (RKB)**
**** Enter NR to designate a Non-Retort Monitoring During BMPs**
***** Show Pilot hole size in (XX)**

All sampling, analytical methods, and calculations according to Appendix 7 to Subpart A of Part 435 40 CFR and according to EPA Region 6 NPDES G documentation as required by the EPA Region 6 General Permit. Retention values were determined using the 50 cm³ retort, special 0.1 ml graduated liquid procedures. Samples and measurements are representative of the monitored activity.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I am aware that there are significant penalties for submitting false information, including the possibility of imprisonment, fines, and civil penalties.

NAF Base Fluid Type:	IO 16/18 Equiv. 6.9%
NAF System Trade Name:	Baraxcel
Mud Company	Baroid

Sampling Interval Number	
Date (mm/day/yy):	03/25/22
Start Depth:	
Ending Depth:	
Sampling Interval Footage:	0.00

Sampling/Mass Fraction Data:	1
Source of Sample:	Pit Clean-out Solids
Sampling Depth (ft):	20700.000
Sample Collection Start Time (hr:min)	
Duration Sample Collection (min:sec)	
Volume Sample (gal)	N/A
Mass Sample [F] (kg) or Total (G)(kg)	
If ROP Int Average ROP (ft/hr)	N/A
If Zero Discharge Cuttings Volume (bbl)	N/A
If SVD Date	02/06/2022
If SVD Density (lb/gal)	14.300
If SVD Volume (bbl)	75.000
Sampling Taker	Tom Kirk
Sampling Data Entry Person	Tom Kirk

Retorting/ROC Data:	
Start Retort Time (hr:min)	
Duration Retort Run (min)	
Mass Empty Retort (A) (g)	
Mass Wet Cuttings and Retort (B) (g)	
Mass Empty Liquid Receiver (C) (g)	
Mass Liquids & Receiver (D) (g)	
Mass Colled Retort (Dry Cuttings) (E) (g)	
Volume Water (V) (cc)	
Retort Technician	

Calculated Results:	
Source Mass Fraction [Xi]	1.000
Retort Mass Balance Result 0.95 - 1.05	0.000
Sample ROC % (%BFi)	25.000
Well NAF Footage (ft)	N/A
Anticipated Total NAF Footage (ft)	N/A
BMP Ratio	N/A

SVD Summary Data:	
Number of SVD Discharges	1
SVD Total Mass Cuttings (F or Gsvd)(kg)	20432.05
Mass Fraction SVD (Xsvd)	0.0983
Well Mass Cuttings (Gwell) (kg)	194919.38
SVD ROC % (%BFsvd)	25.00
Well Average ROC (%BFwell) w/o SVD	4.02

NOTE: N/A is Not Applicable to this sampling interval.

Number of Equipment Calibration, Maintenance, and Qc / QA Entries - T

Excel Reports Allow for Further Analysis

File Home Insert Page Layout Formulas Data Review View Developer Help

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Wrap Text

General

Conditional Formatting Format as Table

A1

Interval No	Date	Hole Size (")	Footage Drilled (ft)	ROC %	Hole Drilled (bbls)
1	06/02/2022	19.5	500	4.37	184.69
2	07/02/2022	19.5	500	6.36	184.69
3	07/02/2022	19.5	340	2.63	125.59
4	08/02/2022	19.5	272	5.61	100.47
5	09/02/2022	19.5	238	6.33	87.91
INTERVALS:				5	
ROC TOTALS:				25.29	
HOLE VOLUME:					683.37

Interval No	Date	Hole Size (")	Footage Drilled (ft)	ROC %	Hole Drilled (bbls)
6	10/02/2022	17.5	150	0	44.63
7	12/02/2022	17.5	500	4.69	148.75
8	12/02/2022	17.5	500	4.94	148.75
10	13/02/2022	17.5	500	0	148.75
INTERVALS:				4	
ROC TOTALS:				9.63	
HOLE VOLUME:					490.88

Interval No	Date	Hole Size (")	Footage Drilled (ft)	ROC %	Hole Drilled (bbls)
9	12/02/2022	19.5	1856	4.42	685.59
INTERVALS:				1	
ROC TOTALS:				4.42	
HOLE VOLUME:					685.59

Interval No	Date	Hole Size (")	Footage Drilled (ft)	ROC %	Hole Drilled (bbls)
9	12/02/2022	19.5	1856	4.42	685.59
INTERVALS:				1	
ROC TOTALS:				4.42	
HOLE VOLUME:					685.59

SMALL VOLUME DISCHARGES						
TYPE	VOLUME	DENSITY	ROC %	Fsvd kg	MASS FRACTIO N (Xi)	% BFsvd
Pit Clean-out Solids	75	14.4	15.69	20574.93	1	15.69
				20574.93		15.69

WELL TOTALS	
RUNNING AVE FOR WELL (DAILY)	3.93
ROC RUNNING TOTAL:	39.35
TOTAL NUMBER OF SAMPLE	10
FOR Gwell CALCULATIONS	
TOTAL HOLE VOLUME:	Bbls. 1859.84 kgs 738170
Gwell= (kgs)	767215.55
Xsvd=	0.0271
% BASE FLUID	4.68 %

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