



# CALAYA ENGINEERING SERVICES LIMITED

***“MODERN WELL CONTROL AND  
INTERVENTION: MAKING THE IMPOSSIBLE  
POSSIBLE WITH RS CLARE SOLUTION”***



# INTRODUCTION



CALAYA ENGINEERING SERVICES LTD is a limited liability company incorporated under the law of the federal republic of Nigeria, Republic of Equatorial Guinea, Congo Brazzaville and Angola. We are an Engineering and oil & gas service provider in Nigeria, other African countries. We also specialize in training and Certification in Non Destructive Testing (NDT) using the American Society of Non-Destructive Testing (ASNT) standards, have strategically partnered with other leading agencies around the globe to conduct these different location around Africa.

## OUR VISION

....is to be one of the world most renowned oil servicing Company in the nearest possible time.

## OUR STRATEGY

"...is using well informed leadership capable of Thinking and acting in the present while developing, Planning and facilitating the change required for the Future

## OUR MISSION

....is to alleviate the plight of technically sound Nigerians to the world by partaking in various engineering works to completion at the scheduled time without compromising required standards either nationally or internationally.



## RS CLARE TECHNOLOGY



### RS Clare Technology:

Is one of the Industry's most successful and most widely used lubricant/sealant for gate, ball and plug valves. It was designed to provide exceptional performance across the widest range of well operating conditions, processes valves and flow line valves applications. It holds a large field success testimonials and performance reports and is widely acknowledged across the industry by Field Operators, Drilling Contractors, Well Intervention and Workover Companies.





## OBJECTIVE



- To build a long lasting well control and intervention solution in the Oil and Gas industries throughout the world.
- To reduce downtime in well operations in the oil & gas industry.
- To help in cost reduction in well intervention operations.
- To provide field proven lasting solution to leaking valves and flowlines.

# VALVE LUBRICANT 601

- RS Clare 601 provides long lasting lubrication solution and is suitable for all valve lubrication as its hydrocarbon resistance gives it the ability to remain in the valve cavity and ensure operational protection to the valve's critical internal components.

## Valve Lubricant 601 delivers operational cost savings across key areas by achieving:

- Reduced spend on replacement valve components or replacement valves
- Less downtime and NPT due to maintenance
- Decreased downtime during well procedures and intervention jobs
- A reduction in expenditure on grease by remaining in the cavity and permitting increased re-lubrication intervals, thereby reducing spend on maintenance activity





# VIEW OF RS CLARE LUBRICANT AND STANDARD SERVICE LUBRICANT SUBMERGED IN HYDROCARBON



# VALVE SEALANT 701 - DAMAGED GATE VALVE SEALANT

- Valve Sealant 701 provides superior sealing performance for leaking gate; designed to further expand on the sealing performance that has been achieved with Valve Lubricant 601. Valve Sealant 701 is a corrective maintenance solution.

Gate valves leak when there is damage across the sealing surfaces of the gate or seats, in the form of galling, scoring or cutting. Valve Sealant 701 sealing particles help to fill the damaged area and assisting the valve to hold pressure across the seal system so that operations can continue with limited down time.





## **FIELD PROVEN FOR THE EMERGENCY ISOLATION OF LEAKING GATE VALVES:**



- Able to seal gate, ball, plug, process and flowline valves which have moderate to severe damage on the gate and seats.
- Proven in pressure test workshop by using purposely cut seats in the test valve.
- Performance proven in field deployment with successes documented where previous attempts to seal the valve with other sealant products have failed.
- Does not harden like other sealants offering consistently good lubrication qualities in conjunction with its market leading sealing capabilities.





## **RESTORING VALVE INTEGRITY ON A NUMBER OF DIFFERENT OEM VALVES**



**SUPPORTING VALVE INTEGRITY DURING FLOW BACK FOR DRILLING COMPANY**



**LEAKING UPPER MASTER VALVES**



**VALVE SEALANT 701 SEALS ALL LEAKING VALVES**



**PREVENTATIVE MAINTENANCE AND REGAINING VALVE INTEGRITY FOR DRILLING COMPANY**

# SOME CASE STUDY

## VALVE SEALANT 701 RESTORES WELL INTEGRITY TO ENABLE VALVE REPLACEMENT FOR XMAS TREE WING VALVE

### The Situation

The operator was experiencing more frequent instances of Non-Production Time (NPT) and unscheduled maintenance, resulting in loss of production due to their incumbent grease washing out of the valve cavity. Inspections from the third-party maintenance provider highlighted remnant grease in the cavity hardening after opening the valve bonnets for inspection, resulting in costly unscheduled maintenance.

Further concerns regarding leakages and staff exposures from an Environmental Health and Safety (EHS) perspective encouraged the IOC's well integrity manager to explore other valve lubricants.

## The Solution

The well integrity team were focused on trialing a highly adhesive, hydrocarbon resistant valve grease that would withstand produced well fluids and remain in the valve cavity to protect its components. A field trial of Valve Lubricant 601™ was initiated to run side-by-side with the operators' incumbent valve lubricant to assess like for like performance and the results were compelling. Following RS Clare's recommended injection and greasing protocols, the field engineers reported a significant improvement in cavity retention and Valve Lubricant 601™ did not harden under the same operating conditions as the competitor lubricant, instead it remained grease like due to its excellent resistance to all chemicals and hydrocarbons encountered in the produced fluids. The field trial successfully proved 601's ability to reduce NPT and maintenance costs where the incumbent valve grease had been unsuccessful. The operator also reported being able to extend their re-greasing intervals from 6 months to 12 months thanks to Valve Lubricant 601's stable and reliable performance, reducing the volume of grease consumed and the amount of downtime needed for grease crews to regrease the valves, in addition to the maintenance cost savings for unscheduled corrective maintenance and replacement valve components. The capability to extend maintenance intervals has proven to be extremely valuable for our customer, particularly during the global pandemic where operators faced significant challenges gaining access to undertake routine maintenance. The less frequent mobilization of staff and equipment along with the reduction in maintenance costs resulted in substantial cost savings, and the extended production intervals are an added benefit.

# MULTIPLE PASSING VALVES SEALED AFTER INJECTION OF VALVE LUBRICANT 601TM FOR ADCO, BAB FIELD – ABU DHABI

## The Situation

ADCO were experiencing issues operating valves and reported passing valves in several wells throughout the Bab field.

Their incumbent valve lubricant was not able to provide an effective preventative maintenance solution to preserve valve functionality and prevent leakage.



## The Solution

ADCO discussed their operational problems with an RS Clare Technical Sales Engineer and Valve Lubricant 601™ was offered as a high performance, capable solution. A field trial of was agreed to inject 601 into Gas Well's Bb-195, 373 and 466. The original results can be seen below:

Date	well number	Type of well	valve size	Actuation Torque	Leakage rate	quantity of grease injected	recorded on Monitor	condition of valve after injection	Name of the Supervisor	Comment
9-10-07	Bb-195	GP	6 3/8			230 LBS		EASY operation	AYIDINE	
10-10-07	Bb-373	GP	6 3/8			180 LBS		"	ROSAID	
11-10-07	Bb-466	GP	6 3/8			220 LBS		"	ROSAID	
15-11-07	Bb-195	GP	1 3/8			CHECKED THE OPN: & LOOK		FOUND	OK	
18-11-07	Bb-373	GP	6 3/8			"		"	"	
19-11-07	Bb-466	GP	6 3/8			"		"	"	
26/12/07	Bb-466	GP	6 3/8			"		"	"	OK
28/12/07	Bb-195	GP	"			"		"	"	OK
29/12/07	Bb-373	GP	"			"		"	"	OK

After injecting Valve Lubricant 601™ into the valves on the 3 wellheads that had all been passing, the passing stopped and operatives found the valves easier to operate. They continued to monitor the valves for 2 months and all results reported from the trial were favourable. The same trials were then conducted for two oil production wells and operatives reported the positive same results, with Valve Lubricant 601™ successfully able to stop the leaks and improve ease of valve operation.

# SPDC - STOG field to Valve Sealant 701 to help establish barriers for intervention work

## The Situation

The SPDC Nigeria Forcados and Escravos asset is a mature oil, gas and condensate producing field. The produced gas and fluids contain small concentrations of H<sub>2</sub>S, CO<sub>2</sub> and chlorides ++. The Xmas trees are a combination of Cameron, FMC & kvaerner 5K and 10K Y-blocks. The SI pressures are less than 20% of the equipment ratings.

Over the years a maintenance program was implemented to ensure the X-mas trees were greased on a regular basis (every 6 months) with, “standard grease” as recommended. Issues arose when trying to establish barriers for intervention work as per SPDC policy on the aging Xmas tree valves.

SPDC CSR found that the only way to achieve the required barriers was to have a Sealant crew work on the Xmas tree valves just prior to performing the intervention (usually the same day) and keep the crew on location in case they were needed.



# The Solution

During the 'grease investigation period' SPDC started a CT STOG (Coil Tubing Intervention) program where barriers were required almost on a daily basis. Once they started using Valve Sealant 701 they found that they no longer needed to grease the Xmas tree valves afterwards, in fact we could grease it two weeks prior and still achieve the required barriers. During CT Well Intervention operations, they also no longer had to keep grease and pumping equipment on location and rarely had to grease the X-mas tree during operations.

Due to the excellent performance of Valve Sealant 701, management decided to switch to Valve Sealant 701 throughout the field. Huge cost savings have been delivered as a result, and SPDC continue to use VL/VS 601/701 in this field and many more regions across the globe.

- “We have found that since the X-mas tree valves do not require as much grease due to the fact that Valve Lubricant 601 does not washout. We were also able to maintain the barriers when needed and failures on leak off tests have diminished immensely”

# Addax Petroleum - Valve Sealant 701 to establish barriers for Slickline operations

## The Situation

During Addax Petroleum Izombe (OML 124) slickline operation for WRSCSSSV change out on Well IZ-1LS of Vetco Gray (11"X 3 1/8X 3 1/8X 5K), the wellhead maintenance team carried out integrity check on Xmas tree valves and noticed the Swab Valve passing @600psi-1200psi in 2mins, Master Valves both passing @600psi-1200psi in 5mins.





## The Solution

Calaya Sealant team were contacted to carry out sealing of the passing valves to create a barrier for slickline operations. After pumping high grade RS Clare 701 valve sealant on Xmas tree valves, they were tested and confirmed ok and holding in 10mins.

Slickline rigged up and carried out the WRSCSSSV change out and the Addax company man confirmed the integrity of the valves were retained till the end of the whole operation on the well.

Addax Petroleum has always been using Calaya wellhead maintenance team for 1st and 2nd line wellhead maintenance on all their wells. The use of RS Clare Valve Lubricant 601 has been used for routine maintenance every 6 months and the deployment of RS Clare Valve Sealant 701 for all the passing valves to keep the valves integrity at all times.

## **OTHER CASE STUDIES IN NIGERIA**

- SPDC Nigeria (Gbaran) - Valve Sealant 701 to establish barriers for BHP Survey
- NAOC (Land and Swamp location) – 601 Valve Lubricant for routine maintenance operations
- NLNG (Bonny Facility) – Greasing and Leak Sealing of GTS-4 Critical Components
- West African Gas Pipeline Company Limited (WAPCo) – 30” Station Manual Gate Valve Leak Sealing
- Mobil Producing Nigeria Unlimited – Field Trial

**PROJECT PICTURE GALLERY AT WAGPCO**



**PROJECT PICTURE GALLERY AT NLNG (Bonny Facility)**





## **COST ANALYSIS FOR WELL INTERVENTION/VALVES MAINTENANCE COMPARED WITH THE USE OF RS CLARE TECHNOLOGY:**



- In well intervention operation the cost of mobilizing lubricator, self-loader, NRV, etc, to establish a barrier before any replacement can be done is very huge. Also looking at the cost of valves and valves components, and sometimes where there's no barrier it involves killing the well and nipping down Xmas tree before any replacement can be achieved. Most times these activities can take weeks or months before completion thereby increasing downtime and non-productive time (NPT).
- Hence with the deployment of RS Clare Technology in well intervention cost of operation/maintenance is reduced as there's no need for establishing barrier or killing of well as RS Clare does not require both. Less downtime and NPT due to maintenance because it does not take up to two hours to seal a valve.



It will reduce cost on replacement of valve component or replacement of valves and also guarantee to reduce the operational cost associated with leaking gate, ball, plug, process and flowline valves.

For instance, if the budget for well intervention operation, process and flowline valve maintenance is to be \$500,000.00 in a year. With the deployment of RS Clare product half of the amount budgeted will be enough to achieve the desired goal with less downtime and NPT. Our RS Clare product has been successfully deployed to several of our client's fields as our contracts with them are still valid (running) ranging from Shell Petroleum Development Company, Nigeria Agip Oil Company, Addax Petroleum and Nigeria LNG Limited. Where it has provided exceptional performance, success thereby eradicate the frequent replacement of valves, saves downtime during their operations and equally promote profit as documented in the field report below.



# BENEFITS USING RS CLARE TECHNOLOGY



- Reduced cost on replacement of valve components or replacement valves
- Less downtime and NPT due to maintenance
- Decreased downtime during well procedures and intervention jobs
- A reduction in expenditure on grease by remaining in the cavity and permitting increased re-lubrication intervals, thereby reducing spend on maintenance activity
- Able to seal gate, ball, plug, process and flowline valves which have moderate to severe damage on the gate and seats.
- guaranteed to reduce the operational costs associated with leaking valves.



# CALAYA ENGINEERING SERVICES LIMITED

## STATION VALVES GREASING & MAINTENANCE REPORT

CLIENT : NIGERIAN AGIP OIL COMPANY (NAOC)

EQUIPMENT: HYPERGUN, CLARE PRESSURE GUN, MECAHANICAL TOOLS BOX

LOCATION: BONNY-LNG

JOB: GREASING/LEAK SEALING OF GTS 4 CRITICAL COMPONENTS

DATE:

S/N	VALVE TYPE	WORK DONE	SIZE	UNIT	QUANTITY	REMARKS
	BALL VALVE	SEALING/GREASING	20" X 18" X 600	GTS 4	1	All valves greased ok. However, in an event of any shut down, we recommend proper servicing of the GTS 4 valves to eliminate stiffness and ensure optimal performance.
	BALL VALVE	GREASING	20" X 18" X 600	GTS 4	1	
	BALL VALVE	GREASING	36" X 600	GTS 4	6	
	BALL VALVE	GREASING	12" X 600	GTS 4	2	
	GLOBE VALVE	GREASING	4" X 600	GTS 4	2	
	BALL VALVE	GREASING	2" X 600	GTS 4	15	
	BALL VALVE	GREASING	4" X 600	GTS 4	2	
	GATE VALVE	GREASING	4" X 600	GTS 4	10	
TOTAL NO. OF VALVES SERVICED		THIRTY NINE VALVES			39	

CALAYA REP

NAME MADISON UZOMAH

DATE 03/02/17

SIGN

NAOC REP

NAME

DATE

SIGN

NAME, U  
7/02/17



CALAYA ENG. SERV. LTD

# DAILY REPORT

REPORT NO.

DATE:

03/02/17

FIELD:

BONNY-LNG

JOB:

GREASING OF GTS 4 VALVES.

WELL NAME:

TREE SIZE/TYPE:

CONTRACT NO.

DATE OF MOBILIZATION:

### ACTUAL WORK DONE/ EXECUTED

### EQUIPMENT/TOOLS

QTY

HYPRESSURE GUN

MANUAL GREASE PUMP

TOOLS BOX

R-S CLARE SEALANT.

### WEATHER CONDITION

HOT

GOOD

RAIN

✓

### INCIDENT/ACCIDENT

NONE

Arrived GTS 4 location and held a brief tools box talk with NAOC and NLNG Reps.  
 Identified Leaking/faulty grease fitting and conducted gas test around.  
 Connected high pressure grease gun to leaking grease fitting and injected high grade R-S CLARE 601 Valve Sealant into valve to stop leakage.  
 Carried out routine greasing on other valves on GTS 4 - successfully.

### REMARK

Leakage stopped and other valves greased ok. Job done successfully.

CALAYA REP.

NAOC REP.

NAME

DATE

SIGN

NAME

DATE

SIGN

MADISON UZOMAH

03/02/17

LANRE, U

7/02/17





# CALAYA ENGINEERING SERVICES LIMITED

1105

e-mail: calayaengineering@yahoo.co.uk/www.calayaengineering.com Tel: 084-301123

DAILY REPORT:

FIELD: ADIBAWA

DATE: 27/09/2019

JOB: LEAK SEALING OF XMAS TREE VALVES

WELL NAME	LONG STRING			SHORT STRING		TANGO	
	PRESS	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TREE TYPE	FTHP/FLP			—	—		
TREE SIZE	CITHP			1000psi	1000psi		
CLIENT CSE/BASE ENGR	CHP/COND						
CONTRACTOR CREW LEADER	X-BUSHING						
FLOWING PLUG	HANGER						
CCA / AVA / BAKER	SSV TEST						
PERSONNEL	SCSSV TEST						
	CSG VALVE IN/OUT						
FUEL ENDURANCE	WATER ENDURANCE			FOOD ENDURANCE			

DESCRIPTION	WORK DONE
Arrived location and met well shut-in. Reviewed HIA and had a brief tool box talk with crew.	Reviewed
Monitored and recorded well parameters as follows: Initial STAG = 1000psi. Final STAG = 1000psi.	Monitored and recorded well parameters as follows: Initial STAG = 1000psi. Final STAG = 1000psi.
Conducted leak test on Xmas tree valves and confirmed w/holding pressure OK. White & M/ passed at the rate of 1000psi in 10mins respectively.	Conducted leak test on Xmas tree valves and confirmed w/holding pressure OK. White & M/ passed at the rate of 1000psi in 10mins respectively.
Closed Huffer and bled pressure above to 0psi. Connected grease pump to 9V grease fitting and injected l/h grade RS grease to valve sealant to Xmas tree valve and observed pressure building on value pump and holding valve several times.	Closed Huffer and bled pressure above to 0psi. Connected grease pump to 9V grease fitting and injected l/h grade RS grease to valve sealant to Xmas tree valve and observed pressure building on value pump and holding valve several times.
Repeated the same procedure on the M/ but valve was not sealed when STAG site rep suspended the work due to heavy rainfall.	Repeated the same procedure on the M/ but valve was not sealed when STAG site rep suspended the work due to heavy rainfall.
Closed all Xmas tree valves, and clear work over and departed location.	Closed all Xmas tree valves, and clear work over and departed location.

DESCRIPTION	SIZE	QTY
CONTRACTOR REP		

DESCRIPTION	SIZE	QTY
RS CLAMP 70I		10 Quant
AIR COMPRESSOR		1
RS CLAMP PUMP		1
TOOL BOX		1
HILUX VAN		1
CONTRACTOR REP		

CONTRACTOR REP. Benson Madugaw  
 SIGNATURE: [Signature]  
 DATE: 27/9/2019

CLIENT REP. JAMES HOLESO  
 SIGNATURE: [Signature]  
 DATE: 27/09/2019

2 Valves/Leats Sealed, 4 1 Valve Greased.



**CALAYA ENGINEERING SERVICES LIMITED**

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DAILY REPORT: **ADDA X** FIELD: **1 ZOMBE** DATE: **17/10/2020** 303

JOB: **1st & 2nd Line Wtt Mtce.**

WELL NAME	LONG STRING			SHORT STRING		TANGO	
	PRESS	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TREE TYPE <b>Vetco-Grow</b>	FTHP/FLP			500/500psi			
TREE SIZE <b>2 1/16 x 2 9/16 x 5/8</b>	CITHP			650psi			
CLIENT CSE/BASE ENGR	CHP/COND			N/A			
CONTRACTOR CREW LEADER	X-BUSHING						
FLOWING PLUG	HANGER						
CCA / AVA / BAKER	SSV TEST						
PERSONNEL <b>Two(2)</b>	SCSSV TEST			N/A			
	CSG VALVE IN/OUT						
FUEL ENDURANCE	WATER ENDURANCE		FOOD ENDURANCE				

DESCRIPTION	WORK DONE
Moved to Well 1Z13SS @ 1600 hours and met well flowing. Monitored and recorded well parameters as seen above. Shut-in well through WV and ELPV. Carried out integrity checks and confirmed LMV passing from 300psi - 400psi in 10mins, UMWV passing from 300psi - 450psi in 10mins and MWV holding OK.	Monitored and recorded well parameters as seen above. Shut-in well through WV and ELPV. Carried out integrity checks and confirmed LMV passing from 300psi - 400psi in 10mins, UMWV passing from 300psi - 450psi in 10mins and MWV holding OK.
Made up pump connection and injected high grade valve sealant 701 into UMWV and LMV cavities, throttled and confirmed holding OK.	Made up pump connection and injected high grade valve sealant 701 into UMWV and LMV cavities, throttled and confirmed holding OK.
Made up pump connection and injected high grade valve lubricant 601 into MWV cavity, throttled and freed OK.	Made up pump connection and injected high grade valve lubricant 601 into MWV cavity, throttled and freed OK.
Opened up well and all Xmas tree valves, observed good house keeping and left well location @ 1700 hours.	Opened up well and all Xmas tree valves, observed good house keeping and left well location @ 1700 hours.
QA/QC	

CLIENT MATS USED		
DESCRIPTION	SIZE	QTY

CONTRACTOR MATS USED		
DESCRIPTION	SIZE	QTY
Arcamprosson		1
Grease pump		1
Sealant pump		1
Tool box		
Sealant		
Grease		
Dilux van		1

CONTRACTOR REP: **Benson Madugumy**  
 SIGNATURE:   
 DATE: **17/10/2020**

CLIENT REP: **Ken Akintola**  
 SIGNATURE:   
 DATE: **17/10/2020**

Total of 9 ~~Valves~~ Greased



## CALAYA ENGINEERING SERVICES LIMITED

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DAILY REPORT:

ADDAX

FIELD: 1ZOMBE

DATE: 18/10/2020 2304

JOB: 1st & 2nd Line Wellhead Maintenance.

WELL NAME	LONG STRING			SHORT STRING		TANGO	
	PRESS	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TREE TYPE	12 5LS/SS	FTHP/FLP	750/120psi	100/100psi			
TREE SIZE	Vetco-Gray 29/16 x 29/16 x 5k	CITHP	750psi	100psi			
CLIENT CSE/BASE ENGR		CHP/COND	0psi	0psi			
CONTRACTOR CREW LEADER		X-BUSHING					
FLOWING PLUG		HANGER					
CCA / AVA / BAKER		SSV TEST					
PERSONNEL	Two (2)	SCSSV TEST	N/A	N/A			
		CSG VALVE IN/OUT					
FUEL ENDURANCE		WATER ENDURANCE			FOOD ENDURANCE		

DESCRIPTION | WORK DONE

The crew arrived Well 12 5LS/SS @ 0800 hours and met the two arms flowing, shut-in wells. Conducted integrity check on the Xmas tree valves after visual inspection and taking parameters. Confirmed UMV, LMV and WV of 12 5LS/SS all holding OK. Made up pump connection and injected high grade RS Clare valve lubricant into valves cavities, throttled and freed OK. Opened all Xmas tree valves, tidy work area and left well location @ 1145 hours.

Total of 9 ~~Valves~~ were greased in Well 1Zombe 5LS/SS and 1Zombe 6W1

QA/QC

CLIENT MATS USED

DESCRIPTION	SIZE	QTY
CONTRACTOR REP		

CONTRACTOR MATS USED

DESCRIPTION	SIZE	QTY
Tool box		1
Air Compressor		1
Grease pump		1
Grease pump		1
Hitachi Van		1

CONTRACTOR REP: Benson Madugany  
SIGNATURE:   
DATE: 18/10/2020

CLIENT REP: KEN AKHIBI  
SIGNATURE:   
DATE: 18/10/2020



JOB: LEAK SEALING OF XMAS TREE VALVE

WELL NAME	LONG STRING			SHORT STRING		TANGO	
	PRESS	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TREE TYPE	FTHP/FLP						
TREE SIZE	CITHP						
CLIENT CSE/BASE ENGR	CHP/COND					300	700
CONTRACTOR CREW LEADER	X-BUSHING						
FLOWING PLUG	HANGER						
CCA / AVA / BAKER	SSV TEST						
PERSONNEL	SCSSV TEST					OK	OK
	CSG VALVE IN/OUT						
FUEL ENDURANCE	WATER ENDURANCE			FOOD ENDURANCE			

ARRIVED LOCATION & met well shift-in. Reviewed 2HP & had a tool box talk with the crew. Monitored and recorded well permeability as reflected above. Pressure from top through the equalizing line from PCB. Recorded CITHP AS 700 PSI. Conducted leak test on Xmas tree valves & confirmed LMY & WV holding pressure OK. While SV pressure at the rate of 300 PSI in 10 minutes and LMY pressure at the rate of 700 PSI in 10 mins. Tested the SCSSV & confirmed flap OK. Connected grease pump to SV grease fittings & injected high grade RS close TOI valve. Sealant to XMAS tree valve not throttled. Valve sealed & holding OK. The same procedure was repeated on LMY - that is backside DPX that (activated) but observed pressure build up when valve is closed on closed position while injecting. RS close, sealant into the valve cavity. Disconnected grease fittings & changed greasing nipple then repeated the process and still observed pressure build up. Pumped valve open & repeated the process. Observed no pressure build up but could not leak seal while on open position. Disconnected grease pump & closed all valves & had our tools to the production & departed.

CLIENT MATS USED		
DESCRIPTION	SIZE	QTY
Redox TOI sealant		17 quart
RS close grease pump		1
100L B.O.		
Hand Tools		1 set
Air Compressor		
CONTRACTOR REP		

CONTRACTOR MATS USED		
DESCRIPTION	SIZE	QTY

CONTRACTOR REP. SIGNATURE: KENNEDY UKOH  
 DATE: 07-09-2019

CLIENT REP. SIGNATURE: Draftin e  
 DATE: 07/9/19



DAILY REPORT

FIELD: OB 10B

DATE: 14/2/2016

JOB: GREASING AND LEAK SEALING OF XMAS TREE VALVES

WELL NAME	LONG STRING			SHORT STRING		TANGO	
	PRESS	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
VALVE / TREE	<u>DBF 15</u>	FTHP/FLP					
TREE SIZE		CITHP					
VALVE / TREE	<u>CAMERON</u>	CITHP	<u>230751</u>				
TREE TYPE		CHP/COND	<u>0P51</u>				
CLIENT CSE/BASE ENGR		X-BUSHING HANGER					
CONTRACTOR CREW LEADER	<u>AUGUSTINE</u>	SSV TEST					
FLOWING PLUG		SCSSV TEST					
CCA/AVA/BAKER		CSG VALVE IN/OUT					
PERSONNEL	<u>4</u>	WATER ENDURANCE			FOOD ENDURANCE		
FUEL ENDURANCE							

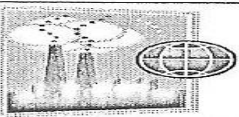
DESCRIPTION	WORK DONE
<p>Arrived @ the location and the well was met. Shut-in recorded well pressure as shown above. Did inspection of the lower master, upper master, swab valve and the two wing valve (left wing &amp; production wing valve) and the connector / annulus valves and observe stiffness, which was hard to turn and also observed that the grease / sealant inside the gate through the greasing nipple was caked and needed high grade R.S. clay valve lubrication grease / sealant. Re-testing of the valves were done and observed / seen turning free and freely. NO of valves greased = seven (7) valves</p>	
QA/QC	

CLIENT MATS USED		
DESCRIPTION	SIZE	QTY

CONTRACTOR MATS USED		
DESCRIPTION	SIZE	QTY
<u>RS CLAYE 701</u>	-	-
<u>VALVE SEALANT</u>	-	-

CONTRACTOR REP. Augustine Edor  
 SIGNATURE [Signature]  
 DATE 14/2/2016

CLIENT REP. MAZI NWAOKORO  
 SIGNATURE [Signature]  
 DATE 15/02/16



CALAYA ENG. SERV. LTD

# DAILY REPORT

REPORT NO.

02

DATE:

26/11/15

CONTRACT NO.

FIELD:

OSHE

JOB:

VALVES LEAK - SEALING.

WELL NAME:

OSHE 12S

TREE SIZE/TYPE:

11" x 2 9/16 x 2 1/16 x 5K - BREDA

DATE OF MOBILIZATION:

### ACTUAL WORK DONE/ EXECUTED

Arrived Oshe 12S and met well shut-in. Monitored and recorded CITHP = 2070 psi.

Connected high pressure grease gun and injected high grade valve sealant while monitoring leak rate.

Master valves (Lower & upper), wing valve and swab valve break sealed successfully.

### REMARK

All xmas tree valves leak-sealed OK.

### EQUIPMENT/TOOLS

QTY

HYPERGUN

1

GREASE GUN

1

TOOLS BOX

1

HAND TOOLS

VALVE SEALANT.

RS CLARE 701

### WEATHER CONDITION

HOT

GOOD

RAIN

✓

### INCIDENT/ACCIDENT

NONE

### CALAYA REP.

### NAOC REP.

NAME

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Madison Uzomah.

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ADIGWE, A1

27/11/15

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**WORKSHOP ILLUSTRATION OF RS CLARE SEALANT/LUBRICANT TECHNOLOGY**  
**ON MANUAL GATE VALVES...**



## PROJECT PICTURE GALLERY AT NLNG FACILITIES

### **CALAYA PERSONNEL GREASING A FLOW STATION BALL VALVES**







## PROJECT PICTURE GALLERY AT SPDC WELLHEAD



**PROJECT PICTURE GALLERY AT ADDAX WELLHEAD**



# OIL & GAS

World leaders in valve integrity

*Innovating for tomorrow*



## TECHNICAL DATA SHEET

Quality Standards:  
ISO 9001:2015  
ISO 14001:2015  
Issue Date—October 2018  
Revision—01

### VALVE LUBRICANT 601

Synthetic valve lubricant and sealant  
NLGI 2

#### Description

Valve Lubricant 601 is a specially formulated valve lubricant based on a fully synthetic oil and incorporating an advanced corrosion inhibition system and an inorganic thickener.

Valve Lubricant 601 contains special extreme pressure and anti-wear additives and combined with a base oil of very high film strength, displays excellent lubricating properties. The special texture provides maximum adhesion to all metal surfaces even when subjected to very high pressures.

#### Applications

Valve Lubricant 601 has been field proven all over the world in gate and plug valves used in crude oil, natural gas production and pipeline equipment. Particularly suitable for use where sour crude and gas, acids, sand slurries and difficult condensates are encountered.

Valve Lubricant 601 is fully compatible with our Valve Lubricant 601 and Valve Sealant 701 range.

#### Features and Benefits

- Currently used to seal McEvoy valves
- Highly adhesive, will remain in the valve cavity under high pressure conditions
- Highly chemically resistant
- Highly resistant to oxidation and will not harden in use
- Multiple OEM approvals - number of lubricants required can be reduced
- Proven to seal plug valves at 15,000 psi
- Wide operational temperature range

#### Typical Characteristics

Appearance	Visual	Smooth, adhesive
Colour	Visual	Black/Grey
Thickener		Inorganic (non-soap)
Temperature Range		-20°F to 450°F
Penetration at 25°C	IP 50	265-295
Drop Point	IP 396	Non-melting
4-Ball Weld Load	IP 239	>620kg
Low Temperature Performance*		Pumpable manually at -13°F

#### Base Oil Characteristics

Base Fluid Type		Synthetic
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#### Resistance

- 20% frac acid (HCl)
- Crude oil, natural gas and condensate
- Diesel fuel
- Drilling muds
- H<sub>2</sub>S and CO<sub>2</sub>
- Produced sand
- Salt water/brines
- Steam

\* Pumpability temperature ranges refer to reasonable flow rates when using the RS Clare 70:1 Pump System (RS Clare configuration).



# OIL & GAS

World leaders in valve integrity

## Innovating for tomorrow VALVE SEALANT 701

Heavy duty valve sealant  
NLGI 2



### TECHNICAL DATA SHEET

Quality Standards:  
ISO 9001:2015  
ISO 14001: 2015  
Issue Date—February 2017  
Revision—00

#### Introduction

API 6A gate valves are designed to achieve a metal to metal seal between the gate and seat. In some cases the seal surfaces can be damaged, either because of insufficient preventative maintenance, poor choice of service lubricant, arduous operating conditions or a combination of all.

In such cases Valve Sealant 701 may be injected into the valve cavity, to assist in achieving a seal across the gate or seat surfaces. The ability of any sealant to provide a seal which will sustain full wellhead pressure, depends upon its performance and the specific condition of the valve components. Valve Sealant 701 is field proven as highly effective.

#### Description

Valve sealant 701 is specially formulated heavy duty valve sealant. In full scale valve testing, it has been proven to seal a severely leaking valve. Valve Sealant 701 is fully resistant to all types of produced hydrocarbons and also to high levels of H<sub>2</sub>S and CO<sub>2</sub>.

Valve Sealant 701's physical texture and high metal adhesion promotes extended cavity retention. Valve Sealant 701 also has enhanced lubricating properties to protect the sealing surfaces during further functioning of the valve under high differential pressures.

Valve Sealant 701 is fully compatible with our Valve Lubricant 601 and Valve Sealant 701 range.

#### Applications

Valve Sealant 701 should be used in gate valves with moderate to severe leaks where the use of Valve Lubricant 601 has not been successful in assisting the valve to hold pressure.

Valve Lubricant 701 may be injected into plug and ball valves in an attempt to assist with emergency sealing and it is also able to be pumped by high pressure pumps.

*It is the sole decision of the operator if a sealant is employed to assist to restore or maintain the integrity of a valve as a well barrier. \*Prior to injecting 701, the operator should identify the exact make, model and pressure rating of the gate valve, and confirm the arrangement of the sealant injection fitting(s) in the valve's bonnet. If a buried check valve is present please utilise 701-L.*

The information contained herein may change. Whilst every care is taken to ensure the accuracy of the material contained in this bulletin, no liability can be assumed for the information given. For specific, current information please contact Clare field sales staff.



#### Testing

Valve Sealant 701 has been tested in an API 6A gate valve with a severely damaged seat component deliberately cut to a depth of 1.5mm. Valve Sealant 701 was able to hold 5,000 psi which is the pressure limit of a valve. Note— A leading valve sealant was tested alongside Valve Sealant 701, in the same test the valve sealant would not even assist the valve to pressure up. A test report is available on request.

#### Typical Characteristics

Appearance	Visual	Adhesive
Colour	Visual	Black/Grey
Thickener		Inorganic (non-soap)
Temperature Range		0°F to 350°F
Drop Point	IP 396	Non-melting
4-Ball Weld Load	IP 239	>620kg

#### Base Oil Characteristics

Type		Synthetic
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#### Important Note

The injection of a sealant is a temporary measure. The valve is leaking due to physical damage to the sealing surfaces, the valve or its components should be changed out at the earliest opportunity. The sealant may be employed to assist in regaining integrity so well intervention operations can be carried out in a cost-effective manner. Valve Sealant 701 can be pumped by high pressure pumps—please contact RS Clare for pump specification advice.



RS Clare & Co Ltd  
Innovation since 1748



## CONCLUSION



- The introduction of **RS Clare Technology (lubricant/Sealant)** to your facility will eradicate the frequent replacement of valves, saves downtime during operation and equally promote profit. Calaya engineering is always ready to offer these unique services anytime we are called upon.



**INSTITUTE OF OIL & GAS RESEARCH  
& HYDROCARBON STUDIES**

(Established under CAM Act 1 LFN 1990)

*Oil & Gas Product Awards*

*This is to certify that*

**VALVE LUBRICANT 601 BRAND**

*wins*

**BEST VALVE LUBRICANT OF THE YEAR 2018**

*Adnan Adnan*

Chairman Technical Committee

*Moses Esdaie*

Director General/CEO

# VIEW OF RS CLARE LUBRICANTS IN CALAYA WAREHOUSE





# OTHER CALAYA SERVICES...



- WELL COMPLETION/WELLHEAD MAINTENANCE
- SURFACE CONTROLLED SUB-SURFACE SAFETY VALVES (SCSSSV) INTEGRITY CHECK
- AUTO CORROSION MAPPING OF VESSELS, PIPES AND TANKS
- ELECTRICAL MAINTENANCE SERVICES
- ONLINE CALIBRATION (TANKS, PRV, PSV, ETC.)
- FACILITY ASSETS INTEGRITY MANAGEMENT SERVICES (NDT)
- INTELLIGENT PIGGING (UT, MTL)
- INTERNAL CORROSION/CATHODIC PROTECTION
- CONSTRUCTION AND FABRICATION
- OIL TOOLS/FISHING RENTALS
- DOWNHOLE SERVICES
- MARINE SERVICES/DAILY SUPPORT SERVICES
- METAL MAGNETIC MEMORY
- DCVG (COATING DEFECT SURVEY AND REPAIR)
- HYDRO JETTING CLEANING OF TANKS, TEST SEPERATOR, PIPES AND PLATFORMS
- PROCUREMENT
- RIG OPERATION (HYDRAULIC PULLING UNIT)
- ETC.....



Thank you!