## WEST Activity report July 16 through July 22, 2010

WEST - Greg Childs, Chris Tolleson, CJ Scott Date - 22-July-2010

### 16 July

Greg, Chris and CJ – Continued with investigation tickets. Reviewed information for wellbore pressure testing using BP's Anatomize method to determine how it works and if it was approved by MMS. Mapped out the AMF/Deadman function in SEM A and SEM B, and built an excel spreadsheet with all inputs/outputs from A31(AMF SEM A) and A62(AMF SEM B).

### 19 July

Greg and CJ – Continued with investigation tickets. Found and added more information on the digital testing. Sent emails out to attempt to find more information on rigs using the digital testing method. Added data/attachments on the Hydril diverter to the ticket. Went back to the leak investigation ticket and compiled more data. Finished mapping output functions for A31 and drew a simplified schematic showing all inputs/outputs from A31(AMF SEM A).

### 20 July

Chris and CJ - Greg at WEST - First draft of AMF SEM tests and worked on schematic.

### 21 July

Greg, Chris and CJ – Continued review of information concerning the leaks, digital testing, telescopic joint and the diverter investigation tickets. The group met and discussed the leaks. Assisted with rebuttals to a proposed newspaper article. Also continued with the function mapping and discussion of the Mux circuitry. The simplified schematic redrawn in Eaglecad. Finished AMF SEM test document, sent to Nautilus. Finished single line schematic. First review of the Cameron materials provided on laptop.

### 22 July

Greg and Chris – Continued with Sharepoint investigation tickets. The shearing question is 99% complete. The telescoping joint question will require input from the subsea engineers. Continued work on AMF investigation ticket. Continued tracing AMF circuit into hydraulics. Continued review of Cameron materials including SEM source code.



## WEST Activity report July 30 through Aug 5, 2010

WEST - Greg Childs, Chris Tolleson Date - 5-Aug-2010

### 30 July

Greg and Chris – Chris continued at Kongsberg in New Orleans. Greg continued with investigation tickets. The digital testing ticket report was revised after speaking with men on the Enterprise and reviewing report with Ewen. Began to rewrite the known leaks ticket report in the latest format.

### 31 July

Chris - Chris continued at Kongsberg in New Orleans.

Greg on vacation Aug 2-5

### 2 Aug

Chris – Setup Kongsberg fire and gas software from the DW Horizon to run on my Transocean desktop. Worked with Dan Farr to create power point presentation on the DWH Fire and Gas system. Provided screenshots from the Kongsberg Simrad system running on desktop.

### 3 Aug

Chris – Prepared to travel to DW Nautilus. Reviewed testing procedures with Robert Tiano. Provided additional support for the DWH fire and gas presentation.

## 4 Aug

Chris - Traveled from Houston to Austin.

### 5 Aug

Chris –Wrapped up the DWH fire and gas work. Put the Kongsberg system software in simulation mode into a folder on the J drive. Reviewed pressing issues and investigation tickets for BOP controls. Reviewed information regarding the retrieval of the Stack. Answered BOP control questions to group.

# WEST Activity report Oct 15 through Oct 21, 2010

WEST - Greg Childs, Chris Tolleson, Harshal Patil, Mika Reed, Abhijit Mohod Date -21-Oct-2010

### 15 Oct

Greg revised the shear washout and BOP leaks reports for the PC and sent to Steve for review before sending to Bill, met with Chris and Mika to review the SEM testing project, located and provided shear ram and sheared pipe graphics to Buddy and Joseph. WEST has identified another back-up person for Chris – Brian Leach, Mike Van Gemert will still be available for guidance as well. Mika discussed SEM test preparations with Chris and prepared testing template for SEM testing based on DWH FAT's. Abhijit installed 3DS Max, created gumbo-box model for Joseph, created various components for the shear ram assembly for Joseph per Greg's instructions.

### 16 Oct

Chris worked at DEC on the SEM project. Mika met Chris at DEC to conduct pre-testing of SEM, completed SEM Project Plan in MS Project.

### 17 Oct

Chris obtained tools and storage container for the SEM project.

### 18 Oct

Greg researched replacement of SBR packers and testing of the rams between replacement and the incident, met WREDACTED : PRIVILEGED

REDACTED : PRIVILEGED met with group and Stress to discuss well pressure, flows and drill pipe scenarios, reviewed latest revision of BOP leaks report, worked on the shear ram animation. Chris, Harshal and Miki continued work necessary to perform SEM testing, all three left GW5 and went to the WEST DEC, moved all electrical test equipment from the Transocean offices, made cables to provide the SEM with 120 VAC (simulating MUX power), conducted power up tests and operated the SEMs (PLC A & B) locked all equipment in a container for storage. Abhijit solved unexpected and critical problem with running of 3DS Max software, modified dimensions and checked dimensional accuracy of components used in the BOP. Mika obtained DWN schematics from TOI Records, finished testing template for SEM testing, went to the WEST DEC to begin electrical SEM testing, assisted with testing on PLC A & B, recorded results of both tests.

### 19 Oct

Greg completed and submitted the BOP Leaks and Wash out of SBR reports, saved all reference material for the SBR report in the Support material folder, assisted with preventive maintenance on the test gate valves, Greg at WEST in the afternoon teaching a seminar. Chris, Harshal and Mika at WEST DEC to continue SEM testing, created

communications cables for PETU to SEM connections, wired RS-232 to RS-485 communications equipment and attempted to connect to communicate with the SEM, verified RS-232 communications via oscilloscope, installed winTsim PETU software on two laptops - one simulated driller's control panel, the other computer simulated the SEM. These two laptops communicated as a system to show that the RS-232 communications, without the RS-485 controllers work correctly, and that the software is configured to communicate with SEM. Mika found documents to assist with configuring ADAM-RS 232. Abhijit acquired diagrams and pictures of the shear ram assembly, started working on the shear ram model.

#### 20 Oct

Greg at WEST teaching a seminar all day. Chris, Harshal and Mika at WEST DEC for a 1/2 day of testing on DWN SEM, conducted testing and recorded results on PLC A & B, removed AMF cards and prepared for AMF A& B card testing, conducted AMF A&B test and recorded results. Chris, Harshal and Mika at TOI offices second half of day, produced a document with all test results for TOI staff. Chris, Harshal and Mika met with staff regarding testing results. Chris co-authored AMF section of presidential commission report with Ryan McIntosh. Mika revised and updated equipment and project cost spreadsheet, added notes to MS Project SEM project plan to show project delays. Abhijit modified the gumbo-box drawing according to new dimensions and layout, continued working on the shear ram modeling.

### 21 Oct

Group attended the morning meeting. Greg continued work on the PC reports; the 'BOP Leaks' and 'Wash out of BSRs' reports are now in the legal folder, worked with Joseph and Abhijiit on the 3D drawings and animations. Greg and Chris assisted David Baay and Calvin Barnhill in understanding Mux control systems. Mika obtained PETU information on Deepwater Navigator from TOI document records, assisted Chris with expense and accounting with WEST, sent expense cost/total to Ewen and Bob for SEM testing project, prepared for SEM testing at the DEC. Chris and Ryan continued with the AMF report. Abhijit continued working on the shear ram modeling.

#### **DWH Technical Group Summary Report**

#### Current activity and progress:

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We are waiting for a PETU which we have borrowed from the Deepwater Navigator to assist with our testing of the SEM from the Deepwater Nautilus at West Engineering's facility in Brookshire. This is scheduled to arrive Thursday evening. We have proceeded with AMF card testing and some limited testing of the SEM. Currently we have found a hidden fault with the AMF circuits on this DWN SEM that is related to the condition of one nine volt battery and was probably unknown to the DWN personnel. We found that one AMF circuit fired and then disarmed while the other continued to cycle. We switched the batteries and found that the problem moved with the battery that measured lower voltage. This same condition could have contributed to the results that Cameron found when the DWH Blue POD was retrieved. We are continuing to test and will need to develop a test procedure for submission to DNV so that similar testing may be used to verify whether or not this same fault could have occurred on the DWH Blue Pod. – In progress

West Engineering has agreed that primarily Brian Leach and then Mike Van Gemert will be available to back up Chris Tolleson as required.

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Continued assistance with flow line, overboard diverter lines and gumbo box piping and arrangement to assist with support for Stress calculations. A response

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from NOV confirmed that they have never been requested to install a level sensor in the gumbo box to calculate flow.

We received the updated procedure from Stress for removal of the drill pipe from the riser for further analysis. This has been passed on to Dan and is awaiting review or his decision to pass on to DNV and the JIT. No evident progress for this week. - In progress

We are continuing work on the necessary items for Cameron software testing on the Deepwater Nautilus. REDACTED : PRIVILEGED REDACTED : PRIVILEGED

Continued work on our previous interpretation of the API 53 requirements for recertification is still required. In addition to the work being carried out by Greg Childs, Rodney will look into our company policy and requirements that are called out on our PM system to see of we are in compliance with our own requirements. Continuing a review of the Modu Spec report to determine what items were out of certification and whether the items noted in the report were being maintained to meet class and or Transocean requirements. Awaiting input from Rob Turlak and group on Transocean policy. Rob is presently in Singapore. – In progress

#### **People during this period:**

West Engineers: Greg Childs out Tuesday afternoon and Wednesday at West Chris Tolleson and Harshal were at West on Tuesday, Wednesday and part of Thursday to work on AMF testing with the DWN SEM. Transocean: Ewen Florence out on vacation. Bob Walsh was out Tuesday

#### Sharepoint Items Status - Technical Group

Assigned	<u>Open</u>	100% ready for sign off	App - closed
Dan Farr Geoff Boughton Greg Childs Chris Tolleson Ewen Florence James Kent Robert Tiano	4 10 13 26	1 2 1 3	3 1 2 5
Robert Hallo	11	0	

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Bob Walsh	13
Rodney Manning	2
Harshal Patil	1

2

4

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## WEST Activity report Oct 22 through Oct 28, 2010

WEST - Greg Childs. Chris Tolleson, Harshal Patil, Mika Reed, Abhijit Mohod Date -28-Oct-2010

## 22 Oct

Greg worked on president's committee reports, attended Bill's update meeting, worked with Abhijit on the SBR 3D drawing, met with group on AMF.

## 23 Oct

Chris worked at DEC on the SEM project and reproduced the error mode. Video taped error mode.

## 24 Oct

Chris SEM project; worked on the test setup, procured shunt resistors, worked out back up to chart recorder

### 25 Oct

Greg, Chris, Harshal, Abhijit and Miki attended morning meeting. Greg continued with review and editing of BOP Leaks and BSR Washout reports, located better photographs for attachments, assisted Jana with photo format, assisted with SBR 3D drawing. Chris provided a scenario for May 11<sup>th</sup> results from Cameron testing, also provided video.

## 26 Oct

Greg worked at WEST in the morning. Greg, Chris, Harshal and Mika met with Bill Ambrose and the rest of the group to discuss why we think the BOP functioned as designed. Chris prepared for meeting with Bill Ambrose, wrote outline of test procedure for TOI council. Abhijit turned the SBR 3D drawing over to Joseph and went back to the gumbo box.

## 27 Oct

Greg worked at WEST in the morning. Greg continued work on shearing animation, purchased and delivered metal work tables to WEST DEC. Chris, Harshal and Mika joined in a conference call with Presidents Commission lawyers to explain our AMF/SEM testing, went to DEC for further testing. Mika picked up parts for the testing. Abhijit continued on the gumbo box. Chris worked on procuring needed test information and organizing tests, worked at DEC, worked on testing procedures, worked on explanations to TOI.

## 28 Oct

The team attended the morning meeting. Greg began review of his reports after legal made their revisions to check for accuracy and understandability. Chris, Harshal and

Mika spent the morning here and the afternoon at WEST DEC, they performed interactive testing with Ryan and Ewen. Abhijit completed the latest on the gumbo box.

# DEEPWATER HORIZON

DWH Technical Group Summary Report

#### 28 October 2010

**Current activity and progress:** 

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We have received the PETU from the Deepwater Navigator to assist with our testing of the SEM from the Deepwater Nautilus at West Engineering's facility in Brookshire. We have proceeded with AMF card testing and some limited testing of the SEM. Currently we have found a hidden fault with the AMF circuits on this DWN SEM that is related to the condition of one nine volt battery and was probably unknown to the DWN personnel. We found that one AMF circuit fired and then disarmed while the other continued to cycle. We switched the batteries and found that the problem moved with the battery that measured lower voltage. This same condition could have contributed to the results that Cameron found when the DWH Blue POD was retrieved. We are sourcing some pressure transducers, chart recorder and other items to simulate real life conditions as accurately as possible and so that we can clearly document the test results. We are continuing to test and will need to develop a test procedure for submission to DNV so that similar testing may be used to verify whether or not this same fault could have occurred on the DWH Blue Pod. We have sourced additional batteries through the manufacturer but these are long delivery. We are following up to see what dealers may have shelf stock and also have found some battery packs in stock with Cameron which will be ordered through the Deepwater Nautilus. There is one damaged AMF card on the Deepwater Nautilus SEM which will be repaired and tested. We will inform Cameron that a replacement card is needed when the SEM is sent in for shop inspection, prior to return. - In progress

The DNV review of our PM system is continuing. Present status is that they are down to about 30 key items that they are looking into more and will assign risk numbers to, based on their internal rating system. Also they will consider whether any of these could have contributed to the DWH incident. REDACTED

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	There is still some internal

review ongoing at DNV. - In progress

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### **DEEPWATER HORIZON**

**DWH Technical Group Summary Report** 

The updated procedure from Stress for removal of the drill pipe from the riser for further analysis has been passed on to Dan and is awaiting review or his decision to pass on to DNV and the JIT. No evident progress for this week. - In progress

We are continuing work on the necessary items for Cameron software testing on the Deepwater Nautilus. REDACTED : PRIVILEGED REDACTED : PRIVILEGED

Continued work on our previous interpretation of the API 53 requirements for recertification is still required. In addition to the work being carried out by Greg Childs, Rodney will look into our company policy and requirements that are called out on our PM system to see of we are in compliance with our own requirements. Continuing a review of the Modu Spec report to determine what items were out of certification and whether the items noted in the report were being maintained to meet class and or Transocean requirements. Awaiting input from Rob Turlak and group on Transocean policy. Rob is presently in Singapore. – In progress

We contacted Modu Spec to follow up on their report section that indicates that the POD batteries were changed. Peter Sierdsma is out of town but we will follow up with him on Monday morning. – In progress

We verified normal operation of the ST locks and located photos of the BOP control panel while in operation which shows that the ST locks are in "vent" position. – Closed

We spoke with Ron Guidry about tally books or other notes that he or others may have from the last between wells maintenance. Ron is schedule to come into the office on Monday. In progress

#### People during this period:

West Engineers: Greg Childs out Tuesday afternoon and Wednesday at West Chris Tolleson and Harshal were at West on Tuesday, Wednesday and part of Thursday to work on AMF testing with the DWN SEM. Transocean: Ewen Florence out on vacation. Bob Walsh was out Tuesday

#### Sharepoint Items Status – Technical Group

Assigned

Open

100% ready for sign off

App - closed

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# DEEPWATER HORIZON

DWH Technical Group Summary Report

Dan Farr	4			
Geoff Boughton		1		
Greg Childs	10	2		3
Chris Tolleson	13	1		1
Ewen Florence	26	3		2
James Kent				5
Robert Tiano	11	6		
Bob Walsh	13	2		4
Rodney Manning	2			
Harshal Patil	1			

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# WEST Activity report Oct 29 through Nov 4, 2010

WEST - Greg Childs, Chris Tolleson, Harshal Patil, Mika Reed, Abhijit Mohod, Brian Leach Date -4-Nov-2010

### 29 Oct

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assisted Bill with SEM descriptions. Greg, Mika and Abhijit attended the morning meeting. Chris and Harshal worked on the AMF testing set up at WEST DEC. Abhijit made a rough layout for the BOP stack to be modeled, determined key dimensions and worked with Greg about what is needed on the model and what can be excluded.

### 1 Nov

Greg worked on president's committee reports, rewrote BSR Washout report, reviewed latest forensic testing plan and provided corrections/questions to Geoff, assisted Abhijit with mud-gas separator drawing. Abhijit completed the mud-gas separator drawing. Chris, Harshal and Miki continued with the SEM testing and planning/purchase of parts.

## 2 Nov

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Chris, Harshal, Brian and Mika worked at WEST DEC on the SEM testing, Ewen and Ryan from TO were there as well. Abhijit modeled valves and diverter; reviewed drawings and functioning of rig floor equipment.

### 3 Nov

Greg taught at a WEST seminar all day. Chris, Harshal, Brian and Mika worked at WEST DEC on the SEM testing, Ewen and Ryan from TO were there as well. Abhijit drew piping for the rig floor equipment.

### 4 Nov

Greg taught at a WEST seminar in the morning. Greg assisted with API RP requirements, reviewed some of the data supplied by Cameron, discussed filing of the Cameron data for better use later. Chris, Harshal, Brian and Mika worked at WEST DEC on the SEM testing, Ewen and Ryan from TO were there as well. Abhijit continued modeling the rig floor equipment.

# WEST Activity report Nov 5 through Nov 11, 2010

WEST - Greg Childs, Chris Tolleson, Harshal Patil, Mika Reed, Abhijit Mohod, Brian Leach Date -11-Nov-2010

#### 5 Nov

Greg assisted with BOP maintenance document and API RP 53 references, researched the acceptable Cameron ram gap allowable and provided references to Sellers, researched electrical and hydraulic schematics for mud system valves controlled from the Cameron control panels. Chris, Mika and Harshal worked in the TO offices. Abhijit complete work on the PC presentations. Brian not working on this project this week.

### 8 Nov

Greg joined the rest of the group in watching the president's commission presentation on C-Span. Abhijit continued with 3D drawings of the critical components of the stack. Chris, Harshal and Miki continued with the SEM testing at the DEC.

### 9 Nov

Greg at WEST offices and teaching at a WEST seminar. Chris, Harshal and Mika worked at WEST DEC. Abhijit filling in with WEST work but still available for TO work.

### 10 Nov

Greg taught at a WEST seminar all morning. Greg discussed the latest with Ewen, provided latest information on API RP 53, located graphics on Cameron SBRs, discussed Abhijit's workload with Buddy, reviewed some of the president's commission presentation from yesterday. Chris, Harshal and Mika worked at WEST DEC on the SEM testing. Abhijit filling in with WEST work but still available for TO work.

### **11 Nov**

Greg and Abhijit attended group morning meeting. Greg started back on the sharepoint tickets and reports, worked on upper and lower annular questions. Chris, Harshal and Mika worked at WEST DEC on the SEM testing. Abhijit filling in with WEST work but still available for TO work.

## WEST Activity report Nov 12 through Nov 18, 2010

WEST - Greg Childs, Chris Tolleson, Harshal Patil, Mika Reed, Abhijit Mohod, Brian Leach Date -18-Nov-2010

Harshal, Abhijit and Brian in Training at WEST.

### **12 Nov**

SEM testing prep. Chris, Ewen and Mika wired current sensing resistors into the power supply circuit and chart recorder connections.

### **15 Nov**

Mika spent a half day at the DEC going through SEM expenses and team expense reports. Chris T. was out sick. Harshal was in training. Harshal and Abhijit in BOP training at WEST.

### 16 Nov

Chris, Ewen and Mika prepared for final testing at DEC. Final SEM testing conducted. Recorded test results with chart recorder. Assisted Harshal & Chris with outstanding expenses. Harshal and Abhijit in BOP training at WEST.

### 17 Nov

Mika recorded test results from 11/3/10. Chris, Mika and Bob Walsh met regarding Cameron software to find diverter code. Mika and Chris went through Cameron FAT and used it for DNV test of DWH SEM. Mika typed Cameron test from May 11, 2010. Chris and Mika worked with Ewen to develop AMF/SEM battery tests for DNV. Harshal and Abhijit in BOP training at WEST.

### **18 Nov**

Mika and Chris continued with documentation of test for DNV to perform. Harshal and Abhijit in BOP training at WEST. Mika, Ewen and Chris planning battery tests for DEC...

### WEST Activity report Nov 26 through Dec 2, 2010

WEST - Greg Childs, Chris Tolleson, Harshal Patil, Mika Reed Date –2-Dec-2010

### 26 Nov

Thanksgiving Friday

### 29 Nov

Greg continued work on the sharepoint tickets, researched applicable API documents for purged control panels, reviewed Bly report for more details that affect our ticket questions, revised BOP Modifications ticket. Mika met with Ewen, tracking project deliverables, getting plan to put test results on J:/ drive, closing invoices and checking time entry for TOI-WEST people.

### **30 Nov**

Greg worked on sharepoint tickets and continued review of Bly report for more details. Mika formatted checklist for SEM photography and documentation, Harshal and Mika worked exporting and formatting the data from the DAQ/Chart Recorder. Mika worked on converting digital video of SEM tests. Chris worked on writing the video to DVD.

### 1 Dec

Greg late due to Dentist appointment, worked on sharepoint tickets and continued review of Bly report for more details, discussed conduit manifold modification at length, found the BP comment re a possible issue with the new conduit manifold. Harshal formatted results from the DAQ/Chart Recorder from the SEM tests. Mika tracked project issues and deliverable schedule with Ewen and team. REDACTED : PRIVILEGED REDACTED : PRIVILEGED

### 2 Dec

Greg continued review of BOP mods, attended meeting to discuss drill pipe configuration and which annular was likely closed, determined that the BP stated issue with the new conduit manifold actually existed on the original conduit manifold as well, began editing a BOP general description document. Chris and Mika working on AMF SEM testing result summary document. Mika and Harshal worked with Buddy Fojt to photograph and document the SEM testing arrangement.

## WEST Activity report Dec 10 through Dec 16, 2010

WEST - Greg Childs, Chris Tolleson, Harshal Patil, Mika Reed Date -16-Dec-2010

### 10 Dec

Greg worked on report sections, completed latest change to BOP Modifications document. Chris. Mika.

### 13 Dec

Greg worked on report sections, completed latest change to BOP Leaks document. Chris, Harshal and Mika at DEC working on SEM tests.

### 14 Dec

Greg worked at the WEST offices all day. Mika . Chris ...

### **15 Dec**

Greg revised the BOP Leaks report section, started a new sharepoint ticket concerning the Middle VBRs leaking and the cement found in the cavity, starting working on high temperature packer information. Harshal massaged data from the SEM testing to be used in the report. Chris worked on report sections from home. Mika

### 16 Dec

Greg continued working on sharepoint tickets and report sections, reviewed Digital Testing, located more Cameron high temp packer info, discussed manning requirements for the stack at Michoud. Group Christmas party. Chris and Mika Harshal.

## WEST Activity report Dec 31, 2010 through Jan 14, 2011

WEST - Greg Childs, Chris Tolleson, Harshal Patil Date -14-Jan-2011

### 31 Dec

WEST Holiday

#### 3 Jan

TO Holiday, Greg at WEST.

### 4 Jan

Greg continued with Sharepoint tickets, attended long meeting with group (led by Steve) concerning the tickets. Chris

### 5 Jan

Greg continued with Sharepoint tickets, researched solenoid 103 comments/reports, located additional BOP modifications to add to that sharepoint ticket, REDACTED :

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### 6 Jan

Greg continued with Sharepoint tickets, reviewed API for more references, major revision to BOP modifications ticket.

### 7 Jan

Greg updated three sharepoint tickets to 100% status. Harshal prepared the SEM at DEC facility for its delivery on Monday. Chris out moving.

### 10 Jan

Greg worked with Ewen to bring more sharepoint tickets to 100%, large meeting with Dan Farr re the report, another meeting with Dan and lawyers re work at Michoud, etc. Harshal worked on Battery Testing at TOI office. Chris procured a small refrigerator for the Cameron AMF battery testing. Meeting with equipment group to determine direction of investigation tickets and assign priorities, deadlines to outstanding tickets. Conducted readiness check on DWN SEM before the bell housing was re-installed. Gathered all test equipment for the DWN SEM testing and packed it for moving to Transocean. Moved all test equipment to 5 Greenway Plaza, 11<sup>th</sup> floor in preparation for Cameron AMF battery testing.

### 11 Jan

Greg continued work on sharepoint tickets. Harsahl worked on Battery Testing at TOI office and bought equipment required for the Battery Testing. Chris began work on the Cameron AMF battery testing wiring and setup. Began work on software for testing. Requested uninterruptable power supplies for testing equipment, forward the Cameron AMF battery testing procedure to Ewen Florence for feedback and/or approval. Continued work on outstanding investigation tickets. Reviewed diverter software code with EF and added information to ticket #66. Removed ticket #66's reference to 330 and 370.

#### 12 Jan

Greg taught a WEST seminar all day. Harshal started the Battery testing with the Power supply and worked on the software for automation of the Test. Chris began work on the Cameron AMF battery testing wiring and setup. Began work on software for testing. Requested uninterruptable power supplies for testing equipment, forward the Cameron AMF battery testing procedure to Ewen Florence for feedback and/or approval. Continued work on outstanding investigation tickets.

#### 13 Jan

Greg taught a WEST seminar in the morning. Greg worked on sharepoint tickets in the afternoon, revised four and discussed same with Ewen. Harshal worked on the Battery Testing at TOI facility and monitored the test setup. Chris completed work on Cameron AMF battery testing electrical connections and software. Started overnight testing.

### 14 Jan

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REDACTED : PERSONAL Barshal purchased equipment for the battery testing and explained the test setup to the customer. Chris monitored battery testing and worked on sharepoint tickets.

# WEST Activity report Jan 17, 2010 through Jan 20, 2011

WEST - Greg Childs, Chris Tolleson, Harshal Patil Date -20-Jan-2011

### 15 Jan

Harshal at TOI to monitor the progress of battery testing and replaced one part critical to Battery Testing.

### 17 Jan

Greg at WEST all day. Chris out sick. Harshal monitored the Battery testing.

### 18 Jan

Greg at WEST in the morning. Greg worked on sharepoint tickets, revise 66 and 219. Chris out sick. Harshal worked Battery Testing and looked through the software for the analysis of the results.

### 19 Jan

Greg continued with Sharepoint tickets, worked with Welaptega trying to get 3D videos to play on our system, gathering data to perform API 16D accumulator calculations. Chris out sick. Harshal gathered all the data from Chris's laptop and transferred it to my laptop, shutdown the testing and then went to WEST for next half of the day to do the paperwork on visa.

### 20 Jan

Greg continued with Sharepoint tickets and API 16D calculations, reviewed test protocols for work on the equipment at Michoud. Chris out sick. Harshal worked on battery test data.

# WEST Activity report Jan 21, 2010 through Jan 27, 2011

WEST - Greg Childs, Chris Tolleson, Harshal Patil Date –27-Jan-2011

### 21 Jan

Greg discussed test protocol issues with Geoff, continued on sharepoint tickets, the team got the 3D video working (finally), researched ST Lock stroke/timing for Geoff, discussed shearing with Geoff and Dan. Harshal and Chris began review automated battery testing results from last week.

### 24 Jan

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REDACTED: d Harshal and Chris reviewed automated battery testing results from last week. Chris wrote up a list of issues and possible resolutions. Harshal reviewed and contributed materials. Harshal worked on combining the first battery test's data files.

### 25 Jan

Greg at WEST all day. Chris answered testing questions. Harshal submitted a help ticket to the test software OEM. Ewen, Ryan and Chris meet to review results of the battery testing and to determine future actions on issues with possible resolutions.

### 26 Jan

Greg continued with Sharepoint tickets, worked on accumulator calculations, at WEST for an afternoon meeting. Harshal and Chris continued to work on the electrical test setup. Chris and Harshal wired temp sensors and positioned them for overnight test of the cooling arrangement. Harshal purchased antifreeze coolant as a thermal buffer for the testing. Started overnight testing.

### 27 Jan

Greg cancelled trip to Michoud, not enough had been accomplished to make it worth the trip, continued with Sharepoint tickets, got BOP mods to 100%, revised ticket 395 to include all alerts/advisories without a complete answer. Chris and Harshal wired testing setup. Harshal continued to work on test software issues.