Surface Data Logging End of Well Report

Posey 6912 OCS-Y-2321 #001

Client: Shell Gulf of Mexico, Inc.

Field: Chukchi Sea Rig: Polar Pioneer

Date: September 29, 2015



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Digital Data to include:

Final Log Files
Final End of Well Report
Final LAS Exports
Halliburton Log Viewer
EMF Log Viewer



GENERAL WELL INFORMATION

Company: Shell Gulf of Mexico Inc.

Rig: Polar Pioneer

Well: OCS-Y-2321 Burger J #001

Field: Posey 6912 Borough: Chukchi Sea

State: Alaska

Country: United States
API Number: 55-352-00004-00

Sperry Job Number: AK-XX-0901604700

Job Start Date: 25 July 2015 Spud Date: 30 July 2015

Total Depth: 6800' MD, 6795' TVD

North Reference: True Declination: 12.39°

Dip Angle: 80.3240°

Total Field Strength: 57374.43359 nT Date Of Magnetic Data: 25 July 2015

Wellhead Coordinates N: North 71° 10' 24.03" Wellhead Coordinates W: West 163° 28' 18.52"

Drill Floor Elevation 76.00' Ground Elevation: 0.00'

Permanent Datum: Mean Sea Level

SDL Data Engineers: Craig Amos, Leigh Ann Rasher, Andrew

Bongard, Justin Carter

SDL Mudloggers: Rebecca Mulkey, Ryan Lenberg, Eli Callan SDL Eagle Technicans: Kyle Millican, Robert Greig, Matt Wavra

Company Geologist: Robert Scheidemann

Company Representatives: Scott Lapine, Matt Casalet, Jason Hartung,

Doug Sloan



DAILY SUMMARY

07/25/2015

Arrive on location and begin deploying anchors.

Data Engineers: Craig Amos

07/26/2015

Continue anchor deployment. Begin to pick up drill pipe and racking back. Begin to pick up BHA #1

Data Engineers: Craig Amos

07/27/2015

Complete picking up BHA # 1. Bring on brine and chemicals to make mud.

Data Engineers: Craig Amos

07/28/2015

Continue rig maintenance and repairing Barite system. Pick up dumb iron BHA to tag bottom and check water depth.

Data Engineers: Craig Amos

07/29/2015

Water depth checked to 146' MD. Complete rig repairs on Barite tanks, build kill mud and sweeps. Begin picking up 8.5" pilot hole BHA.

Data Engineers: Craig Amos

07/30/2015

Troubleshoot MWD tools and complete making up BHA #1. Trip in hole to sea floor, shallow pulse test and begin drilling 8.5" section as of 17:02 hours.

Data Engineers: Craig Amos/Leigh Ann Rasher

Fluids: No sweeps pumped.

Geology: No samples collected for surface section.

07/31/2015

Continue to drill ahead from 438' MD to 1005' MD. Data Engineers: Craig Amos/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water and pumped 20 bbl hi-vis sweeps every stand. **Geology:** Lithology has consisted of mainly siltstone with beds of coal, sandstone, and

claystone based off of MWD data.

08/01/2015

Continue to drill ahead from 1005' MD to pilot hole section TD of 1512' MD. Circulate bottoms up twice and flow check the well. Pull out of the hole, lay down BHA #1 and service the rig. Data Engineers: Craig Amos/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water and pumped 20 bbl hi-vis sweeps every stand. **Geology:** Lithology has consisted of mainly siltstone with beds of coal, sandstone, and claystone based off of MWD data.

08/02/2015

Pick up 36" hole opener BHA. Drill ahead from 222'MD to 384' MD. Circulate bottoms up, pump sweep and circulate bottoms up. Pull out of hole and lay down BHA #2.

Data Engineers: Craig Amos/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water and pumped 20 bbl hi-vis sweeps every stand.

08/03/2015

Pick up mud line cellar and mud line cellar bit. Wait for the weather to stabilize before running in the hole.

Data Engineers: Craig Amos/Leigh Ann Rasher

08/04/2015

Continue to wait on weather. Prepare to run in the hole with mud line cellar. Perform maintenance on the kelly hose.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

08/05/2015

Continue repair the kelly hose. Run in the hole with mud line cellar and drill ahead from 222' MD to 230' MD.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water.

08/06/2015

Drill ahead from 230' MD to 241' MD with mud line cellar. Pull off bottom to inspect mud line cellar bit.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water.

08/07/2015

Pull out of the hole with mud line cellar. Inspect mud line cellar bit and clean off.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

08/08/2015

Continue to clean off mud line cellar bit. Run in with mud line cellar bit and tag bottom of the hole. Rig performed maintenance on pump.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

08/09/2015

Finish rig maintenance on pump. Drill ahead with mud line cellar bit from 241' MD to 257' MD and pull off bottom. Circulate and clean out hole.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water.

08/10/2015

Pull out of hole with mud line cellar bit. Clean off mud line cellar bit, rig down mud line cellar equipment and prepare rig floor for 42" hole opener BHA. Perform rig maintenance on pumps. Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water.

08/11/2015

Continue to rig down mud line cellar equipment. Pick up BHA #3 and run in hole. Drill ahead from 257' MD to 287' MD with 42" hole opener.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water.

08/12/2015

Drill ahead from 287' MD to 393' MD with 42" hole opener. Displace well with well bore stability fluid. Pull out of hole and lay down BHA #3. Begin to rig up 36" conductor casing equipment.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water, and high viscosity sweeps.

08/13/2015

Rig up casing equipment in preparation for running the 36" conductor. Run in hole with 36" conductor.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water.

08/14/2015

Pull out of hole with 36" conductor after failing to get casing to bottom. Pick up 36" x 42" BHA, and run in hole to wash and ream the hole clean.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water.

08/15/2015

Pull out of hole and lay down 36" x 42" BHA. Pick up 36" casing and run in hole. Land 36" casing at 375' MD. Rig up cement equipment and pressure test cement lines.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water, and high viscosity sweeps.

08/16/2015

Pump cement. Wait on cement.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 130 bbls 8.6 ppg seawater followed by 20 bbls of 8.6 seawater with green die, and 240 bbls of permafrost cement. Displace with 44 bbls of 8.6 ppg seawater.

08/17/2015

Continue to wait on cement. Decision made to re-cement 36" casing. Pump cement and wait on cement. Rig down cement equipment and pick up 26" clean out BHA.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

08/18/2015

Run in hole with 26" clean out BHA. Clean out cement and drill new hole to 425' MD. Pull out of hole and lay down 26" clean out BHA. Pick up drilling BHA (with Sperry tools) and run in hole.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water and high viscosity sweeps as needed.

08/19/2015

Drill ahead from 425' MD to 1245' MD with 26" hole opener BHA. Pump sweeps every 45 feet.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water and high viscosity sweeps every 45 feet.

08/20/2015

Drill ahead from 1245' MD to TD of 1512' MD with 26" hole opener BHA. Pump sweeps every 45 feet. Short trip 3 stands and run in hole to 1512' MD. Circulate bottoms up and displace to 10.5 ppg well bore stability fluid. Trip out of hole and lay down 26" BHA. Clean rig floor and rig up 22" casing equipment.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water and high viscosity sweeps every 45 feet.

08/21/2015

Continue to rig up 22" casing equip. Run in hole with 22" casing.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water.

08/22/2015

Continue to run in hole with 22" casing to 1475' MD. Rig up cement equipment and cement 22" casing. Prepare to set BOP.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

Fluids: Pumped 8.55 ppg sea water, 519 bbls of lead cement and 206 bbls of tail cement.

08/23/2015

Pull out of hole with 5" inner string and rig down all temporary piping from cement job. Perform rig maintenance and skid rig 200' off well center for BOP deployment. Assist subsea with changing the choke stab on the KT ring. Rig up marine riser equipment and function test. Pick up and run marine riser to 105' and assist with changing the choke stab on the KT ring. Data Engineers: Andrew Bongard/Leigh Ann Rasher

08/24/2015

Continue to assist subsea with changing choke stab on the KT ring. Remove boost stab and install blank flange. Install chokes and kill drape hoses on the KT ring. Scope out pod line tensioners, tie back the BOP tensioner guideline and transport BOP to well center. Attach the cobra head to rugger and install beacons on BOP stack. Lower riser and land on BOP. Install guide line cables in BOP guide line guides and wait on Nordica to deploy HFL due to weather. Data Engineers: Andrew Bongard/Leigh Ann Rasher

08/25/2015

Continue to wait on weather to deploy HFL. Nordica deploys HFL skid and attempt to install on subsea mud matte with assistance from ROV. Wait on weather to deploy BOP.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

08/26/2015

Continue to wait on weather.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

08/27/2015

Continue to wait on weather.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

08/28/2015

Continue to wait on weather.

Data Engineers: Andrew Bongard/Leigh Ann Rasher

08/29/2015

Waited on weather to deploy BOP. Splash and run BOPs. Test choke and kill lines, good tests. Moved rig to well center. Installed guidelines and applied required tension.

Data Engineers: Andrew Bongard/Justin Carter

Eagle Techs: Kyle Millican

08/30/2015

ROV washed and cleaned wellhead with thrusters. Attempted to pressure test Choke and Kill line with Halliburton cement unit, pressure test good on 250 low and bleeding down at 10k. Bleed down to zero after no success. Troubleshoot and test choke and kill lines separately; good tests. Landed out BOP on well head. Function and latch wellhead connector; good latch and good tests. With Halliburton cement unit conduct pressure tests on BSRs and CSG. Close LBSRs and pressure test to 250 Psi 5 min low while coming up to 1500 psi high. Pressured back up to 1250 psi and started bleeding off, unable to perform test. Begin scoping out slip joint.

Data Engineers: Andrew Bongard/Justin Carter

Eagle Techs: Kyle Millican

08/31/2015

Test BOPs.

Data Engineers: Andrew Bongard/Justin Carter

Eagle Techs: Kyle Millican

09/01/2015

Test BOPs. Test valves, unseat FMC test plug and flow check the well. Pull out of hole with test plug to 250' MD and pull bushing and diverter insert packer. Lay down testing tools and equipment. Function test diverter and fail. Run in hole with FMC shear ram test plug to 624' MD, land and release test plug. Pull out of the hole and function test diverter and fail. Begin to test choke manifold.

Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/ Robert Greig

09/02/2015

Continue to pressure test lines, valves and shear rams with cement unit. Rig down cement hose and begin to pick up BHA with Sperry tools and lay down on deck. Perform rig maintenance and pull out of hole with test plug from 619' MD to 562' MD. Space out and function test middle pipe ram with ROV/SAM.

Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/ Robert Greig

09/03/2015

Pull out of hole with test plug and make up wash assembly and wash wellhead. Make up bore protector assembly from 245' MD to 390' MD and run in hole. Install diverter packer and continue to run in hole with 5" drill pipe to 629' MD. Set bore protector at 250' MD and continue to run in hole to 1207' MD and conduct FOSV and Gray valve test. Pull out of hole while monitoring well on trip tank. Rig up heave indicator and tensioner and continue to make up 17.5" BHA with Sperry tools.

Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/ Robert Greig

09/04/2015

Continue to pick up BHA #5. Run in hole and shallow hole test MWD tools. Begin to wash and ream in hole and tag shoe at 1469' MD. Displace well from seawater to 10.0 ppg water based mud. Drill out 22" shoe and 10' of new formation and circulate two bottoms up. Perform formation integrity test to 12.6 EMW. Trip to bottom of hole and begin to drill 17.5" hole from 1522' MD to 1535' MD as of midnight.

Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/Robert Greig

Gas: Max gas was 15 units at 1535' MD with an average background gas of 12 units.

Fluids: No down hole losses reported.

Geology: Samples consisted of 100% light gray to gray siltstone from 1512' MD to 1530' MD

and 100% gray, soft claystone from 1530' MD to 1535' MD.

09/05/2015

Continue drilling 17.5" section from 1535' MD to 2740' MD. Experienced Insite computer malfunction at 02:20 hours, real-time data was only affected for a short period of time and fluid monitoring was re-established quickly. Depth based gas data was affected by a loss of lag table configuration. This was affected between 1724' MD and 1892' MD, 2 Isotube samples were missed due to the lack of lag (1770' MD and 1860' MD) and 2 cuttings samples were missed. The chromatograph was recalibrated after the event and communication with all systems reestablished.

Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/Robert Greig

Gas: Max gas was 100 units at 1999' MD with an average background gas of 15 units.

Fluids: No down hole losses reported.

Geology: Samples consisted of mostly medium to light gray claystone with interbeds of siltstone. Small amounts of limestone seen in samples from 2010' MD to 2070' MD.

09/06/2015

Continue drilling ahead through 17.5" intermediate section from 2740' MD to TD o 2963' MD at 06:08 hours. Circulate bottoms up and collect samples. Pump 51 bbls hi vis sweep, circulate hole clean. Begin to pull out of hole from 2963' MD to 2473' MD and encounter tight spot at 2923' MD. Spot 15 bbls of 14.5 ppg rat hole mud and continue to pull out of hole to 1461' MD. Run in hole from 1461' MD to 2914' MD and wash down from 2914' MD to 2961' MD. Tagged fill at 2956' MD, circulate bottoms up and flow check well. Spot 8 bbls of 14.5 rat hole mud pill on bottom, circulate above pill while troubleshooting gyro and begin to pull out of hole.

Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/Robert Greig

Gas: Max gas was 57 units at 2940' MD with an average background gas of 11 units. Max trip

gas was 63 units.

Fluids: No down hole losses reported.

Geology: Samples consisted of 80% siltstone and 20% claystone from 2740' MD to 2760'MD and 100% claystone from 2760' MD to section TD of 2963' MD.

09/07/2015

Continue to pull out of hole and lay down BHA and download Sperry tools. Run in hole with bore protector pulling tool and wash BOP and wellhead. Pull out of hole with bore protector and rig up cement head stand. Rig up to run 14" casing and begin to run in hole with 14" casing.

Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/Robert Greig

Gas: No recordable gas.

Fluids: No down hole losses reported.

09/08/2015

SDL recalibrate fast gas system while rig continues running in hole with 14" casing.

Troubleshoot and repair casing handling equipment.

Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/Robert Greig

Gas: No recordable gas.

Fluids: No down hole losses reported.

09/09/2015

Continue running in hole with 14" casing to 2672' MD. Rig down casing running equipment and pick up 14" casing hanger. Run in hole with 5" landing string from 2703' MD to 2933' MD. Make up cement head and circulate bottoms up 1.5 times. Cement casing with 100 bbls of 12.0 ppg spacer, 168 bbls of 13.5 ppg lead, 78 bbls of 15.6 ppg tail, 10 bbls of 12 ppg spacer then displaced cement with 383 bbls of 10.6 ppg mud. Bump plug 1000 psi over, bleed off psi and close IBOP and begin to test BOPs.

Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/Robert Greig

Gas: Max trip gas was 6 units.

Fluids: 47 bbls water based mud gained from down hole on cement job, this was due to

foaming of the cement fluid and was reduced after cement job was complete.

09/10/2015

Test BOPs and begin to pick up BHA. Data Engineer: Craig Amos/Justin Carter Mud loggers; Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/ Robert Greig

Gas: No recordable gas.

Fluids: No down hole losses reported.

09/11/2015

Pick up BHA and shallow hole test tools. Trip in seal assembly, couldn't shear seal assembly, and trip out. Troubleshoot seal assembly, trip back in and set seal assembly. Trip in hole and tag cement at 2846' MD and drill out cement and 11' of new formation to 2963' MD. Perform formation integrity test to 14.0 EMW. Pump hi-vis sweep and circulate and condition mud. Drill ahead from 2963' MD to 2974' MD.

Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/Robert Greig

Gas: Max gas was 21 units at 2964' MD with an average background gas of 8 units. Max trip

gas was 38 units.

Fluids: No down hole losses reported.

Geology: Samples consisted of 100% claystone.

09/12/2015

Drill ahead from 2974' MD to 4320' MD. Pump 50 bbl sweeps as directed.

Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/Robert Greig

Gas: Max gas was 387 units at 3387' MD with an average background gas of 40 units.

Fluids: No down hole losses reported.

Geology: Samples consisted of medium to dark gray, friable to firm claystone with interbeds of

10% to 20% siltstone and sandstone.

09/13/2015

Drill ahead from 4320' MD to TD of 5423' MD at 16:35 hours. Circulate hole clean and begin pull

out of hole. Pump sweeps to clean hole, circulate to monitor ECD's.

Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/Robert Greig

Gas: Max gas was 142 units at 4609' MD with an average background gas of 30 units.

Fluids: No down hole losses reported.

Geology: Samples consisted of mostly 100% medium to dark gray, friable to moderately firm

claystone with interbeds of 10% siltstone or sandstone.

09/14/2015

Continue to pull out of hole while circulating and pumping sweeps to clean and monitor ECD's. Short trip to shoe to circulate and condition mud. Trip in hole to 4969' MD and begin to wash and ream to bottom. Displace open hole drill pipe with new mud.

Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/Robert Greig **Gas:** Max trip gas was 201 units. **Fluids:** No down hole losses reported.

09/15/2015

Continue to circulate and condition mud. Pull out of hole and repair hydraulic hose on elevators.

Continue to pull out of hole and lay down BHA. Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/Matt Warva

Gas: Max trip gas was 68 units.

09/16/2015

Rig up casing equipment and begin running in hole with 9 5/8" liner to 2755' MD. Pick up liner hanger and continue to run in hole to casing shoe at 2933' MD. Circulate 1.5 times bottoms up and continue to run 9 5/8" liner in hole with 5" heavy weight drill pipe.

Data Engineer: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/ Matt Warva

Gas: Max trip gas was 2 units.

Fluids: No down hole losses reported.

09/17/2015

Continue to run in hole with 9 5/8" liner and land liner at 5411' MD. Begin circulating and take losses of 71 bbls while attempting to circulate. Perform slow pump rates and re-establish low levels of circulation. Begin cement job and pump 60 bbls of 13.0 ppg spacer, 50 bbls of lead cement, 148 bbls of tail cement, and 10 bbls of spacer. Set liner hanger and pull up to reverse circulate cement out of the hole. Could not reverse circulate, forward circulate 1.5 times bottoms up and observe no cement or spacer at surface.

Data Engineer: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/ Matt Warva

Gas: Max trip gas was 147 units.

Fluids: Loss of 71 bbls while running liner and 79 bbls while pumping cement.

09/18/2015

Pull out of hole and rack back pipe. Pick up test string and run in to test BOP's. Continue to test BOP's while attempting to read MWD tools from Run 600.SDL recalibrate Sperry fast gas system.

Data Engineer: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Ryan Lenberg Eagle Techs: Kyle Millican/ Matt Warva

Gas: No recordable gas.

Fluids: No down hole losses reported.

09/19/2015

Complete BOP test and pressure test choke manifold and kill. Begin picking up 8.5" BHA and

single in 56 joints of drill pipe.

Data Engineer: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Eli Callan Eagle Techs: Kyle Millican/ Matt Warva

Gas: No recordable gas.

Fluids: No down hole losses reported.

09/20/2015

Continue running in hole with 8.5" BHA. Tag cement and drill out casing shoe and 10' of new formation. Perform formation integrity test to 15.28 EMW. Begin to drill ahead from 5423' MD to 5852' MD while diluting mud system heavily for solids control.

Data Engineer: Craig Amos/Justin Carter Mud loggers; Becky Mulkey/Eli Callan Eagle Techs: Kyle Millican/ Matt Warva

Gas: Max gas was 24 units at 5562' MD with an average background gas of 8 units.

HALLIBURTON

Sperry Drilling

Geology: Samples consisted of medium to dark gray, firm claystone with 10% to 30% shale and 10% siltstone from 5423' MD to 5520' MD. From 5520' MD to 5820' MD samples consisted of light to medium gray, soft to moderately firm claystone with 10% to 40% siltstone and 10% to 30% sandstone. From 5820' MD to 5852' MD samples consisted of 50% light brown to brown, very soft claystone, 40% sandstone and 10% siltstone.

09/21/2015

Continue drilling from 5852' MD to TD of 6800' MD at 22:18. Circulate while reciprocating pipe to clean the hole.

Data Engineers: Craig Amos/Justin Carter Mud loggers: Becky Mulkey/Eli Callan Eagle Techs: Kyle Millican/ Matt Wavra

Gas: Max gas was 47 units at 5924' MD with an average background gas of 5 units.

Fluids: No down hole losses reported.

Geology: Samples consisted of 50% to 90% translucent to transparent, very fine to fine grained, well sorted sandstone with 10% to 50% claystone from 5852' MD to 6080' MD. From 6080' MD to 6480' MD samples consisted of mostly light to medium gray, soft to firm claystone with 10% to 20% siltstone. From 6480' MD to 6800' MD samples consisted of mostly 50 % to 60% claystone and siltstone with interbeds of 10% to 60% light grey to transparent, very fine to fine grained, unconsolidated sandstone.

09/22/2015

Circulate, reciprocate pipe and pull out of hole. Rack back BHA # 7 and begin to rig up wireline.

Data Engineers: Craig Amos/Leigh Ann Rasher

Mud loggers: Becky Mulkey/Eli Callan Eagle Techs: Kyle Millican/ Matt Wavra

Gas: Max trip gas was 19 units.

Fluids: Loss of 47 bbls while tripping out of hole.

09/23/2015

Continue to rig up wireline and run in hole. Perform wireline run #1 with MDT and Gamma Ray tool.

Data Engineers: Craig Amos/Leigh Ann Rasher

Mud loggers: Eli Callan Eagle Techs: Matt Wavra **Gas:** No recordable gas.

Fluids: No down hole losses reported.

09/24/2015

Pull out of hole with first wireline tool and lay down. Rig up second wireline tool, run in hole and perform FMI, SS, GR and HRLA wireline test. Pull out of hole and rig up side core wireline tool.

Run in hole and perform side core wireline.

Data Engineers: Craig Amos/Leigh Ann Rasher

Mud loggers: Eli Callan Eagle Techs: Matt Wavra **Gas:** No recordable gas.

HALLIBURTON | S

Sperry Drilling

09/25/2015

Continue rigging up core tubing wireline run #3. Complete 3rd wireline run and lay down core tubing, remove and package wireline cores. Begin rigging up to run cementing stinger in hole.

Data Engineers: Craig Amos/Leigh Ann Rasher

Mud loggers: Eli Callan Eagle Techs: Matt Wavra **Gas:** No recordable gas.

Fluids: No down hole losses reported.

09/26/2015

Run in hole with 2 7/8" cement stinger and 5" drill pipe. Circulate bottoms up and pick up cement assembly. Pressure test cement lines and line up to pump cement plug. Pump 16 bbls of spacer, 48 bbls of cement and 9 bbls of spacer. Displace with rig pumps 12.0 ppg mud. Rig down cement hose and lay done cement head on skate. Pull out of hole to 6073' MD and circulate bottoms up. Make up cement head for plug 2 and pump 16 bbls of spacer, 51 bbls of cement and 7 bbls of spacer. Displace with rig pumps 12.0 ppg mud. Pull out of hole to 5500' MD and circulate. Make up cement head for plug 3 and pump 14 bbls of spacer, 49 bbls of cement and 7 bbls of spacer. Displace with rig pumps, pull out of the hole to 4867' MD and circulate.

Data Engineers: Craig Amos/Leigh Ann Rasher **Gas:** Max gas was 116 units while circulating.

Fluids: No down hole losses reported.

09/27/2015

Continue to circulate hole clean. Pull out of hole and lay down 2 7/8" tubing. Make up BHA with bit sub and bit, run in hole and tag cement at 4860' MD. Monitor well, static. Pull out of hole and lay down bit and bit sub. Pressure test cement plug to 1600 psi for 15 minutes. Run in hole with 9 5/8" cast iron bridge plug with 5" drill pipe.

Data Engineers: Craig Amos/Leigh Ann Rasher

Gas: No recordable gas.

Fluids: No down hole losses reported.

09/28/2015

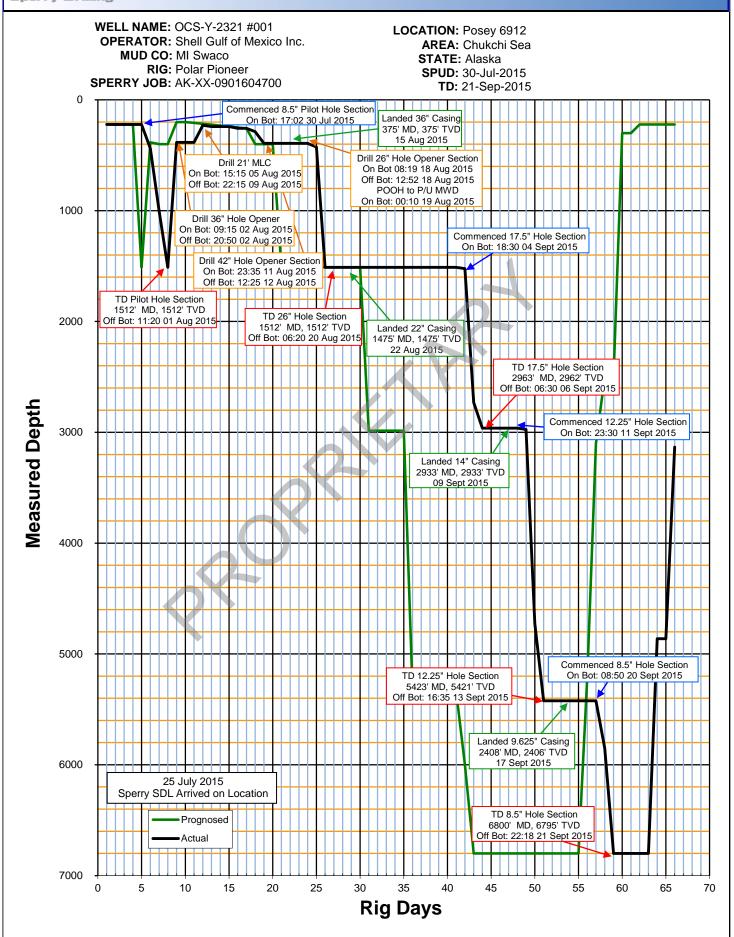
Continue tripping in hole with 2 7/8" tubing. Swtich to 5" DP and trip in to 3133' MD and set 66 bbl cement plug. Rack back 8 stands and wash in hole to top of cement. POOH and lay down 5" and 2 7/8" DP and tubing.

Data Engineers: Craig Amos/Leigh Ann Rasher

Gas: No recordable gas.



Days vs. Depth





Surface Data Logging After Action Review

WELL NAME: OCS-Y-2321 #001 LOCATION: Carlile, Tacoma WA
OPERATOR: Shell Gulf of Mexico Inc. AREA: Port of Seattle

SPERRY JOB: AK-XX-0901604700 STATE: Alaska

RIG: Polar Pioneer HOLE SECTION Mobilization
EMPLOYEE NAME: Beverly Hur DATE: 7-Aug-2015

What went as, or better than, planned:

Many of the necessary supplies were in Tacoma when we arrived. This included the conex, the gas racks and the Eagle system. Access to the Shell mobile unit as a work area helped to facilitate timely and convenient communications with the Anchorage office, Carlile personnel and Shell Logistics. Moving supplies from the lot to the ports was timely, thanks to Carlile and Shell Logistics on the lot.

Difficulties experienced:

Load times at the rig site often took days. This resulted in lost work time as our mudloggers didn't have the needed supplies and equipment to complete the job.

Recommendations:

Having all supplies loaded and ready for lift to the rig at the earliest possible date will eliminate NPT in the future. Because the crane could only make 8-9 lifts a day, having all supplies consolidated and at the port early in the project will allow maximum use of time during rig-up.

Innovations and/or cost savings:

A spreadsheet detailing the vendor, items, order date, tracking information, extensive mailing lists, and expected delivery date will allow anyone to check on a package. This will also eliminate lost packages, prevent double ordering and save money. All supplies and equipment are loaded onto in cargo baskets. Supplies and equipment could be loaded into cargo baskets in Anchorage, shipped to port and loaded directly onto the rig without intermediary steps. A separate cargo basket (AMF's) could also be filled with geo supplies and shipped to each rig as well. These steps would save money by reducing the time it takes to receive supplies on location, lost/missing/double ordered supplies, and make our supplies easy to locate and access on the rig. This would also be attractive to our customer as we would be ready for lift when our baskets arrive on location.

Sperry Drilling Confidential



Surface Data Logging After Action Review

WELL NAME: OCS-Y-2321 #001 LOCATION: Posey 6912

OPERATOR: Shell Gulf of Mexico Inc. AREA: Chukchi Sea

SPERRY JOB: AK-XX-0901604700 STATE: Alaska
RIG: Polar Pioneer HOLE SECTION: 17.50

EMPLOYEE NAME: Craig Amos DATE: 1-Oct-2015

What went as, or better than, planned:

At first the drilling speed was in excess of 100 fph, which made sampling difficult, once speeds had been reduced to below 100 fph sampling was made easier and all samples were collected accurately. The Calcimetry and Steam Still samples were processed after the run and data was collected in a good manner.

Difficulties experienced:

Once drilling commenced the Iris data collection system had corrupted files, this required the system to be rebooted and some calibrations to be reentered. The eagle gas system had a problem with the heater, the mud being used continued polymers that when heated stuck together and caused a blockage. The vacuum for drying samples was also problematic, it didn't have enough air flow and when used for extended periods of time would overheat.

Recommendations:

Installing a drying oven in the unit with the current air extraction would prevent having to use the vacuum drier. Keeping copies of the calibration files on the desk top to easily replace any corrupted files. The mud process or a better process of cleaning out the Eagle system is going to need to be implemented to prevent blockages in the heater.

Innovations and/or cost savings:

Developing new techniques to keep the eagle heater flowing could prevent failures in the future.



Surface Data Logging After Action Review

WELL NAME: OCS-Y-2321 #001 LOCATION: Posey 6912
OPERATOR: Shell Gulf of Mexico Inc. AREA: Chukchi Sea
SPERRY JOB: AK-XX-0901604700 STATE: Alaska

RIG: Polar Pioneer HOLE SECTION: 12.25"

EMPLOYEE NAME: Ryan Lenberg DATE: 7-Sep-2015

What went as, or better than, planned:

A contingency plan was set in place for the Eagle heater to avoid any further blockages. The back up Eagle heater was installed with no issues and worked well throughtout the entire section.

Difficulties experienced:

Vacuum sample dryer box (QWEX 1000) motor failed because it was in an insulated box without an exhaust. Also the seives clog up quickly while trying to dry clay and overworked the vacuum causing further overheating and poor drying performance. Also it limits productivity as we can only dry one sample at a time.

Recommendations:

Develop a different system for air drying fan, possibly using a fan so that more than one sample can be dried at one time.

Innovations and/or cost savings:

N/A



Surface Data Logging After Action Review

WELL NAME: OCS-Y-2321 #001 LOCATION: Posey 6912
OPERATOR: Shell Gulf of Mexico Inc. AREA: Chukchi Sea
SPERRY JOB: AK-XX-0901604700 STATE: Alaska

RIG: Polar Pioneer **HOLE SECTION:** 8.5"

EMPLOYEE NAME: Justin Carter **DATE:** 22-Sep-2015

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No problems with EAGLE or gas data.

Difficulties experienced:

No major problems were experianced during the drilling section.

Recommendations:

Update WITS back up files more frequently or upon mapping changes. Shut down all INSIGHT subprograms before closing down or rebooting MADI computer.

Innovations and/or cost savings:

N/A

Sperry Drilling Confidential



Formation Tops

WELL NAME: OCS-Y-2321 #001
OPERATOR: Shell Gulf of Mexico Inc.
MUD CO: MI Swaco

RIG: Polar Pioneer SPERRY JOB: AK-XX-0901604700 LOCATION: Posey 6912

AREA: Chukchi Sea

STATE: Alaska

SPUD: 30-Jul-2015

TD: 21-Sep-2015

Marker	MD	INC	AZ	TVD	TVDSS
Top Torok	2,760.0	0.70	74.08	2,760.0	-2,684.0
Torok Gas Sand	3,729.0	0.77	27.36	3,279.0	-2,857.0
Top HRZ	5,024.0	3.28	37.85	5,023.0	-3,203.0
Top Pebble Shale	5,539.0	3.73	45.18	5,536.0	-5,460.0
Top Kuparuk C	5,837.0	3.48	42.48	5,871.0	-5,795.0
Top Kuparuk A	5,968.0	3.42	42.67	5,965.0	-5,889.0
Top Kuparuk D	6,451.0	3.99	34.54	6,447.0	-6,371.0



HALLIBURTON	Zone of Intere	st Report	Report # 1
Location: Posey 6912 Operator: Shell Gulf of Report Prepared By:	21 BURGER J #001 Mexico Inc. Jessica Moen Shell Gulf of Mexico Inc.	(TVD) 3300 to	o 3385 ft o 3385 ft rok /2015
The production of this zone is deemed to	contact at approximately NA feet) for	tely 3300 feet, there is a	gas / oil Gas/Oil show (and
1		Hydrocart	oon Ratios
Depth <u>3301</u> ft Gas Units Flowline Background ppm ppm	317 Mud Chlorides (1000's) = 133000 Show ppm		C1 C1 C4 C5
C1 26523 - 868 = 2 C2 734 - 62 = C3 387 - 41 = C4 146 - 14 = C5 49 - 0 = Production Analysis X Gas Oil Wat 2 Depth 3387 ft Gas Units Flowline Background ppm ppm C1 15271 - 9496 = C2 1125 - 333 = C3 1101 - 222 = C4 534 - 106 = C5 338 - 47 = Production	Hydrocarbon Ratios 25655	1000 NPH 100 Gas 10 Oil NPH	
Analysis Gas x Oil Wat			8800088000880088800888
At Max Gas, the visual sample percentag The reservoir rock was a med grey to the grain shape was N/A N/A Grain sorting was was N/A and the The rock hardness was firm	colored claystone Approximate visual porosity was and the rock cement was secondary components in the rock fragments	The grain size was was N/A % and the visual p N/A were: sandstone	N/A and ermeability was The porosity type and siltstone
The oil was N/A in co	Liquid Hydrocarbon Date N/A feet and continued through of N/A and was present in the e studied in the UV box, the liquid hydrocarbor olor, exhibited a N/A and staining was present. The cuttings exhi-	N/A feet. The liquid phase of N/A n covered N/A % of the standard fluorescence and had an approxi	. When the urface of the sample.
######################################	Logger's Oninion of the Show		880000088888888888888888888888888888888

Logger's Opinion of the Show Interval

Total gas climbed to a peak of 317 units at 3301' MD over 26 units of background gas at 3220' - 3250' MD Gas again climbed to a peak of 385 units at 3387' MD over 138 units of background gas at 3365' MD Formational fluid trended from a gas to possible wet gas. Lack of flourensence indicates a lack of liquid hydrocarbon present in the formation.

HALLIBURTON

Zone of Interest Report

Report # 2

Well Name: OCS-Y-2321 BURGER J #001 Depth (MD) 5860 to 6050 ft Location: Posey 6912 5857 to 6047 ft (TVD) Operator: Shell Gulf of Mexico Inc. Formation: Top Kuparuk C Report Prepared By: Jessica Moen **Report Delivered To:** Shell Gulf of Mexico Inc. Date: 9/20/2015 Zone Production Analysis (From Steam-Still PPM Ratios) The production of this zone is deemed to be . At approximately feet, there is a Gas contact (and a NA contact at approximately NA feet) for a total of feet of show (and **Hydrocarbon Ratios** Mud Chlorides (1000's) = C1 C1 C1 C2 C5 **Flowline Background** Show ppm ppm ppm **Hydrocarbon Ratios** 1000 774 40 186 146 19 C3 98 C1/C4 =41 0 41 NPH C1/C5 =0 C5 Production 100 Water Non-Producible Hydrocarbons Analysis Mud Chlorides (1000's) = Depth 6053 Gas Units 12 Gas **Flowline Background** Show ppm ppm ppm **Hydrocarbon Ratios** 10 C1/C2 C1/C3 C3 C1/C4 =Ωi 0 C1/C5 =C4 #DIV/0! 0 NPH Production Water Non-Producible Hydrocarbons Analysis **Formation Data** At Max Gas, the visual sample percentages were: **SST** , **10** % **CLYST** , % The grain size was very fine to fine The reservoir rock was a transl to transp sandstone the grain shape was sub angular to round N/A % and the visual permeability was Approximate visual porosity was Grain sorting was and the rock cement was unconsolidated The porosity type and the secondary components in the rock fragments were: glauc and carb materials and the sample contamination was The rock hardness was Liquid Hydrocarbon Data The liquid hydrocarbon was first detected at N/A feet and continued through feet. The liquid phase of the mud was The liquid hydrocarbon occurred in the form of and was present in the were studied in the UV box, the liquid hydrocarbon covered N/A % of the surface of the sample. The oil was N/A fluorescence and had an approximate in color, exhibited a API gravity of NA and staining was present. The cuttings exhibited a : odor was in color with a fluorescence. **Logger's Opinion of the Show Interval** Gas climbed to a peak of 47 units at 5924' MD over 9 units of background gas at 5860' - 5885' MD Samples changed to sandstone. Lack of heavier hydrocarbons and flourensence indicating dry gas present with no associated liquid hydrocarbons.

HALLIBURTON

Zone of Interest Report

Report #3

Well Name: OCS-Y-2321 BURGER J #001 Depth (MD) 6450 to 6600 ft Location: Posey 6912 6446 to 6595 ft (TVD) Operator: Shell Gulf of Mexico Inc. Report Prepared By: Formation: Top Kuparuk D Jessica Moen **Report Delivered To:** Shell Gulf of Mexico Inc. Date: 9/21/2015 Zone Production Analysis (From Steam-Still PPM Ratios) The production of this zone is deemed to be . At approximately feet, there is a Gas/NPH contact (and a contact at approximately NA feet) for a total of feet of show (and NA show). **Hydrocarbon Ratios** Gas Units Mud Chlorides (1000's) = C1 C1 C1 C2 C5 **Flowline** Background Show ppm ppm ppm **Hydrocarbon Ratios** 1000 680 119 29 17 67 C3 84 C1/C4 =45 0 45 NPH C1/C5 =0 0 0 C5 Production 100 Water Non-Producible Hydrocarbons Analysis 2 Mud Chlorides (1000's) = Depth 6580 Gas Units 19 Gas Show **Flowline Background** ppm ppm ppm **Hydrocarbon Ratios** 10 797 C1/C2 C1/C3 C3 37 C1/C4 =Ωi 16 17 C1/C5 =#DIV/0! C4 0 NPH C5 Production X Non-Producible Hydrocarbons Water Analysis **Formation Data** At Max Gas, the visual sample percentages were: CLYST , 20 % SLTST , It gry to med gry, transl -colored The grain size was v fine to fine The reservoir rock was a sandstone sb angular to round the grain shape was N/A % and the visual permeability was Approximate visual porosity was Grain sorting was poor and the rock cement was The porosity type and the secondary components in the rock fragments were: claystone and siltstone and the sample contamination was The rock hardness was Liquid Hydrocarbon Data The liquid hydrocarbon was first detected at feet and continued through feet. The liquid phase of the mud was The liquid hydrocarbon occurred in the form of and was present in the were studied in the UV box, the liquid hydrocarbon covered N/A % of the surface of the sample. The oil was N/A fluorescence and had an approximate in color, exhibited a API gravity of NA and staining was present. The cuttings exhibited a : odor was in color with a fluorescence.

Logger's Opinion of the Show Interval

Gas climbed to a peak of 36 units at 6495' MD over 11 units of background gas at 6448' MD. Samples changed to partially sandstone with a dull yellow fluorescence, a slow dull yellow crush cut fluorescence, and a dull yellow residual fluorescence. The lack of heavier hydrocarbons with fluorescence indicates a non-productive hydrocarbon or heavy hydrocarbon with no associated gas is present.

WELL NAME: OCS-Y-2321 #001 OPERATOR: Shell Gulf of Mexico Inc.

MUD CO: MI Swaco RIG: Polar Pioneer SPERRY JOB: AK-XX-0901604700 AREA: Chukchi Sea STATE: Alaska SPUD: 30-Jul-2015 TD: 21-Sep-2015

								R600/R300/R200/R100/											
Date	Depth	Wt	Vis	PV	YP	Gels	Filt	R6/R3	Cake	Solids	Oil/Water	Sd	Pm	pН	MBT	Pf/Mf	Chlor	Hard	Remarks
	ft - MD	ppg	sec		lb/100	lb/100ft2	m/30m	Rheometer	32nds	%	%	%			ppb Eqv		mg/l	Ca++	
28-Aug	222	8.55																	Using Sea Water - No Report
29-Aug	222	8.55																	Using Sea Water - No Report
30-Aug	1512	10.2	67	15	16	8/9/10	4.0	46/31/25/18/9/5	1/1	12.0	0/88	0.00	0.80	8.5	5.0	0.1/1.4	145000	800	Building Surface Mud
31-Aug	1512	10.20	65	16	18	9/11/12	4.0	50/34/26/19/12/9	1/0	10	0/90	0.00	1.5	9.2	5	0.4/1.8	123000	600	Test BOPs
1-Sep	1512	10.10	63	17	19	16/31/38	6.0	76/56/47/36/17/15	1/0	9	0/91	0.00	0.4	8.9	15	0.2/0.6	18000	960	Test BOPs
2-Sep	1512	10.10	61	17	19	7/8/8	3.7	57/38/31/22/6/5	1/0	8	0/92	0.00	0.7	8.9	0	0.2/1.3	140000	600	Test BOPs
3-Sep	1512	10.05	60	19	20	7/8/8	3.7	58/39/32/22/7/6	1/0	8	0/92	0.00	8.0	8.9	0	0.2/1.3	140000	600	Pick Up BHA
4-Sep	1523	10.00	56	17	17	6/7/7	3.5	51/34/27/20/6/6	1/0	8	0/92	0.00	1.4	9.5	0	1/1.9	119000	960	Switch to Water Based Mud
5-Sep	2907	10.45	88	18	28	10/11/13	3.2	64/46/38/28/11/9	1/0	13	0/87	2.50	0.8	9.1	5	0.6/1.5	130000	960	Drill 17.5" Section
6-Sep	2963	10.60	56	20	27	10/12/12	3.2	67/47/40/28/12/10	1/0	14.0	0/86	2.50	0.90	9.1	5.0	0.7/1.4	130000	880	TD intermediate 1 section
7-Sep	2963	10.60	58	20	27	10/12/12	3.3	67/47/40/28/12/10	1/0	14.0	0/86	2.50	1.00	9.1	5.0	0.7/1.4	130000	880	Tripping out of hole
8-Sep	2963	10.65	66	15	27	9/9/10	3.4	57/42/35/26/10/9	1/0	13.0	0/87	1.50	0.60	8.8	6.3	0.3/1.2	130000	1120	Casing
9-Sep	2963	10.65	120	16	26	9/9/10	3.3	62/42/36/26/11/9	1/0	13.0	0/87	1.50	0.80	9.0	6.3	0.5/1.3	130000	840	Cement
10-Sep	2963	10.7	120	19	29	9/11/12	2.9	67/48/39/29/9/8	1/0	13	0/87	2	0.8	9	6.25	0.6/1.4	131000	840	TIH with BHA 600
11-Sep	2974	10.75	120	19	30	10/11/12	2.1	68/49/41/30/10/3	1/0	13	0/87	2	0.3	8.2	6.25	0.2/1.5	134000	720	Drilling Intermediate 2
12-Sep	4726	11.00	120	24	38	11/17/18	3.3	89/64/54/40/14/11	1/0	15	0/85	1.5	1.4	8.9	8.75	0.6/1.8	121000	480	Drilling Intermediate 2
13-Sep	5423	11.4	120	32	33	13/15/17	4.7	98/65/55/40/16/13	1/0	18	0/82	1	0.1	8.01	8.75	0.1/1.3	110000	280	TD intermediate 1 section
14-Sep	5423	11.4	120	32	33	13/15/17	4.7	98/65/55/40/16/13	1/0	18	0/82	1	0.1	8.01	8.75	0.1/1.3	110000	280	TD intermediate 1 section
15-Sep	5423	11.40	120	19	29	9/13/14	4.5	67/48/37/26/10/9	1/0	16	0/84	0.5	1.1	9.1	7.5	1.3/3	136000	440	ТООН
16-Sep	5423	11.55	120	24	34	9/13/14	3.9	80/56/47/34/11/9	1/2	16	0/84	0.5	1	9	7.5	0.6/2.3	130000	400	Rig Up Cement
17-Sep	5423	11.5	120	20	31	9/11/14	3.7	71/51/44/32/10/9	1/2	16	0/84	0.5	1	9	7.5	0.7/2	133000	440	TIH With Casing
18-Sep	5423	12.00	120	18	36	8/10/2016	3.5	72/54/44/32/9/8	1/2	18	0/82	0.5	0.9	9	7.5	0.7/2.4	134000	480	Cement Casing
19-Sep	5423	12	120	23	33	9/12/2014	3.8	79/56/46/34/10/9	1/2	18	0/82	0.5	1.4	9.3	7.5	1.2/3	130000	400	Pick Up BHA
20-Sep	5852	12.05	120	23	30	7/16/2022	6.5	76/53/43/31/9/7	1/2	21	0/79	0.5	2.6	9.3	6.5	2.4/4	130000	760	Begin 8.5" Hole Section
21-Sep	6800	12.05	120	22	26	6/9/2010	4.9	70/48/39/28/5/5	1/2	21.5	0/78.5	0.10	1.2	9	8.75	1.1/2.3	145000	480	TD 8.5" Hole Section
22-Sep	6800	12	120	35	32	8/9/10	2.5	102/67/52/33/7/6	1/2	19.5	0/80.5	0.20	1.1	9	5	1.6/3.5	141000	400	Rig UP Wireline
23-Sep	6800	12.00	60	35	34	8/9/10	2.2	104/69/52/34/7/5	1/1	19.3	0/80.8	0.20	1.00	9.0	5.0	1.7/3.4	140000	400	Wireline
24-Sep	6800	12.1	57	30	32	9/10/11	1.8	92/62/47/31/12/7	1/1	19.0	0/81	0.10	0.90	8.8	5.0	1.5/3	143000	440	Wireline
25-Sep	6800	12	79	33	34	6/7/8	2.0	100/67/53/33/8/5	1/1	18.0	0/82	0.20	0.80	8.8	5.0	0.8/1.4	140000	360	RIH w/ Cmt Stinger
26-Sep	6800	12.05	79	35	40	18/20/24	9.0	110/75/61/44/16/12	1/1	19.5	0/80.5	0.20	4.50	9.0	10.0	3/4.3	145000	2400	Circulating
27-Sep	6800	12.05	69	23	29	12/14/30	11.0	75/52/43/33/15/10	2/2	19	0/81	0.20	8.4	10.6	7.5	6.3/7.8	142000	2240	Setting Bridge Plug
28-Sep	6800	12	84	26	27	12/13/14	13.0	79/53/41/29/20/12	1/2	18	0/82	0.20	6	10.6	5	8/9.2	123000	1,600	L/D 2 7/8" tbg

Casing Record

36" Conductor @ 375' MD, 375'TVD 22" Casing @ 1475' MD, 1475'TVD 14" Casing @ 2933' MD, 2933'TVD 9.625" Casing @ 5408' MD, 5406'TVD WELL NAME: OCS-Y-2321 #001
OPERATOR: Shell Gulf of Mexico Inc.

MUD CO: MI Swaco RIG: Polar Pioneer SPERRY JOB: AK-XX-0901604700 AREA: Chukchi Sea
STATE: Alaska
SPUD: 30-Jul-2015
TD: 21-Sep-2015

BHA#	SDL RUN#	Bit #	Bit Type	Bit Size	Depth In	Depth Out	Footage	Bit Hours	TFA	AVG ROP		RPM (max)	SPP (max)	FLOW GPM (max)	Bit Grade	Comments
1	100	1	Mill Tooth	8.50	222	1512	1290	27.89	0.668	46.0	15	106	1263	505	1-1-NO-A-E-IN-NO-TD	8.5" Pilot Hole BHA
2	200	2	Mill Tooth	36.00	222	384	162	9.97	1.117	60.0	2	46	1509	1191	1-1-NO-A-E-IN-NO-BHA	36" Hole Opener
3	300	2rr1	Mill Tooth	36.00	257	372	115	10.67	1.117	28.2	2	86	899	1340	1-1-NO-A-E-IN-NO-TD	42" Hole Opener
4	400a	3	Mill Tooth	26.00	393	425	32	10.84	1.117	60.0	5	60	590	750	0-0-NO-A-E-I-NO-BHA	26" Hole Opener
4	401	3rr1	Mill Tooth	26.00	425	1512	1087	31.16	1.117	60.0	15	120	2850	1200	1-1-WT-A-E-I-NO-TD	26" Section
5	500	4	PDC T6065	17.50	1512	2963	1451	20.58	0.755	71.0	11	100	2710	900	1-2-BT-N-X-I-NO-TD	17.5" Intermediate 1
6	600	5	PDC T6065	12.25	2963	5423	2460	29.05	0.994	84.6	20	100	3500	850	1-1-BT-C-X-I-WT*-TD	12.25" Intermeidate 2
7	700	6	HDBS PDC MM55	8.50	5423	6800	1377	30.37	0.552	45.4	14	100	4020	600	1-1-BT-N-X-I-NO-TD	8.5" Main Object Interval
						X										

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Sperry C	Prilling					wori	ning	KE	•pc	rt				Re	port	# 1	
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ROI	P	Cı	urrent	Avg	24	hr Max	Max @	ft			Curre	ent Pu	mp	& Flo	w Da	ata:	
ROP (ft/hr)									In (gpm) In (spm)				(psi) ns/strok	(0. 4)	23	@ 96%
		_		onth	+		Т.	ools	FIOW	in (spin)				1	_	Min	@ 96% Max
MWD Su	ımmary	<u> </u>		epth to			1,	0015				EC		Avg		VIIII	IVIAX
Mud	Data		Dens	sity (ppg)	Visco	osity	MBT		PV	YF	, T	API FL	T	рН	Chlo	rides	Cor Solids
Depth	Mud T	уре	in	out	(sec	c/qt)	(ppb Ec)	сP	(lb/10	Oft ²)	ml/30mi	n		m	g/l	%
Bit :	#	Б	Pit Turno	Size	TFA	Hours	Depth	in / o		Footogo		WOB		RPM		Cond	dition
Dit :	т		Bit Type	Size	IFA	Tiouis	Бери	11170	ut	Footage		WOB	, 	IXT IVI		Conc	dition
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	,																
Litholo	gy (%)	T	Ss	Cht	Silt	Siltst	Cly	Cly	/st	Sh	Lst	t Co	oal	Gvl	7	Γuff	Cement
(curre	ent)							\leq	4								
Volu	ımes			Capacity obls)		illstring acity (bbls	Annul	ar Vo bbls)		Lag C (b	orrec obls)	tion		ttoms U Strokes	р		toms Up Time
							Gas Sur	nma	rv								
									•	romatog	jraph	(ppm)					
		Jnits	\$ *	Depth	C.	-1	C-2		C-3	3	C-4	i	C-4ı	n	C-5i	(C-5n
Maxir	num _							-									
Minin	num _		_ 4		_			_									
Aver	age			V													
Backgı (curr	round		_	Trip (max)		(Connectio (max)	n _			*	10,000) Un	nits =	100%	Gas	In Air
24 hr R	ocan: Δrri	ive o	n location	and begin	denlovir	a Anchor	•										
24 III N	ecap. Am	ive oi	Tiocation	and begin	deployin	ig Anchors	5.										
Loggin	g Engine	ers:	Craig An	nos		R	eport By:	Craig	Amos	3		_	U	Init Phon	ie: 832	228020	55

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Sperry D	rilling					ivior	ning	κe	;p(ort				Re	port # 2	
Ar Locati	ell:		Bur Chuc Ala	ell Oil ger J ki Sea iska Pioneer		Daily Cl Total Cl Rig A	lob No.: harges: harges: Activity: ort For:	AK-	Pre	901604 Spud Shell	700	(Curre	r's Depti nt Depti Progres Dat Tim	h: s: e: 26	0' 0' 0' -Jul-2015 2:00 AM
ROF	,	Cı	urrent	Avg	2	4 hr Max	Max @) ft			Cur	rent P	ump	& Flo	w Data	
ROP (f	t/hr)									In (gpm	1)		SPP	(psi)		
		_							Flow	In (spm	1)	1 =		ns/strok		@ 96%
MWD Su	mmary	<u> </u>		epth to			ı	ools				_	CD pg)	Avg	Min	Max
Mud	Data		Dens	sity (ppg)	Viso	cosity	MBT		P۱	/ \	/P	API F	L	рН	Chloride	s Cor Solids
Depth	Mud T	уре	in	out	(se	ec/qt)	(ppb Ed	7)	cF	(lb/1	00ft ²)	ml/30r	nin		mg/l	%
	<u> </u>		· -	<u> </u>	 	1	T 5 //	. ,	. T		$\overline{+}$	Wor	+	DD14		
Bit a	7	В	Bit Type	Size	TFA	Hours	Depth	in/o	ut	Footage	9	WOB		RPM	С	ondition
											4		上			
		9,	Size	Set	At		Type			Weight		Grad	е		Comm	ents
Casir Summ	_									\rightarrow						
Sullilli	aı y															
Litholo	qv (%)	T	Ss	Cht	Silt	Siltst	Cly	Cly	st	Sh	Ls	st (Coal	Gvl	Tuff	Cement
(curre								X								
Volu	ımes			Capacity obls)		rillstring acity (bbl		lar Vo (bbls)	lume		Corre (bbls)	ection)		ttoms U Strokes	р Е	ottoms Up Time
						\leftarrow	Gas Su	mma	rv							
									•	romato	grap	h (ppm)			
	ι	Jnits	*	Depth	0)-1	C-2		C-		•	 -4i	C-4	n	C-5i	C-5n
Maxir	num _					_										
Minin Aver			_	\bigcirc	_											
Backgi (curre	ound		_	Trip (max)			Connection (max)	n				* 10,0	00 Ur	nits =	100% G	as In Air
24: -									_				•			
24 hr Re	ecap: Cor	ntinue	e Anchor	deployme	nt, begin	picking u	p pipe and	rackin	g bac	k, begin p	oicking	g up BH.	Α.			
Logging	g Engine	ers:	Craig Ar	nos		F	Report By:	Craig	Amo	s			ι	Jnit Phon	e: 832280	02055

Sperry Drilling		ron		M	orn	ning	Re	por	't			Re	eport	t # 3	
Customer: Well: Area: Location: Rig:		Shel Burg Chuck Alas Polar P	ger J ki Sea	Tota	Job ly Cha al Cha Rig Act Report	arges: ctivity:		AM-090 Pre Sp She			Curr	ay's Dept rent Dept r Progres Dat Tim	th: ss: te:	27-Jı	0' 0' 0' ul-2015 00 AM
ROP ROP (ft/hr)	С	Current	Avg	24 hr N	l ax	Max @	F	Flow In Flow In	(gpm)	urrer	SPI	np & Flo P (psi) Ilons/strok			@ 96%
MWD Summa	ry		epth to			To	ools				ECD (ppg)	Avg	\pm	Min	Max
Mud Data Depth Mud	l I Type		out	Viscosity (sec/qt)		MBT (ppb Eq)		PV cP	YP (lb/100f		API FL nl/30min	pН		lorides mg/l	Cor Solids %
Bit #	T F	Bit Type	Size	TFA Ho	lours	Depth	in / out	i Fo	ootage	W	/OB	RPM		Conc	dition
Casing Summary	E	Size	Set A	\t	<u>=</u>	Type		We	eight		Grade	Ŧ		Commen	ts
Lithology (%	,)	Ss	Cht	Silt Si	Siltst	Cly	Clys	it :	Sh	Lst	Coal	l Gvl	1	Tuff	Cement
Volumes			Capacity obls)	Drillstri Capacity	_		lar Volu (bbls)	ıme	Lag Co (bb	orrectio bls)	on B	Bottoms U Strokes			ttoms Up Time
Maximum _ Minimum _ Average _	Units	s* 	Depth	C-1	 	C-2	nmar	_	omatogr	raph (_I		-4n	C-5i		C-5n
Background (current)			Trip (max)		C	Connection (max)	n _		-	* /	10,000 l	Jnits =	100°	% Gas	In Air
24 hr Recap: C				ring on Brine		eport By:						Unit Phor	ne: 8:	3228020	055

HALL	IBU	RT	CON															
Sperry D	rilling					Mor	ning	Re	;po	rt				Re	port	# 4		
Custome	er:		Shel	ll Oil		J	ob No.:	AK-	-AM-0	9016047	700	Yes	terday	y's Dept	h:		0'	
	ell:		Burg	ger J		Daily Ch	harges:					_	Curre	nt Dept	th:		0'	
	ea:		Chuck	ki Sea		Total Ch	harges:							Progres	s:		0'	'
Locatio			Alas				Activity:			Spud		-		Dat			ul-20	
K	lig:	<u> </u>	Polar P	ioneer		Керс	ort For:			hell	<u> </u>	- 		Tim	ю:	12.	00 AI	<u>/I</u>
ROP		Cı	urrent	Avg	24	4 hr Max	Max @) ft			_	rrent F		& Flo	w D	ata:		
ROP (ft.	/hr)	 	-+		+		+	\dashv		In (gpm In (spm		 	SPP Gallo	(psi) ons/strok	ke 4	4.23	@	96%
MWD Sui	mmar	厂		epth	丁		T	ools				<u></u> ■ E	CD	Avg		Min	_	Max
		<u></u>		to	<u> </u>			_					ppg)		_		드	
	Data			ity (ppg)	-	cosity	MBT	Ī	PV		′P	API F		рН		lorides		Solids
Depth	Mud T	уре	in	out	(sec	ec/qt)	(ppb Eq)	сP	(lb/1	00ft ²)	ml/30i	min		r	mg/l	—	%
Bit #	_		Bit Type	Size	TFA	Hours	Depth	in / c	u ıt	Footage	ᆕ	WOB	一	RPM		Con	dition	
			il i ype	3126	IFA	Hours	Берит	III / U	uι	Fuulaye	+	WOB	+	REIVI	\vdash	COII	dillon	
		_							ユ				丰					
		ξ	Size	Set /	At		Туре		工	Weight	X	Grad	de	工	C	Commen	its	
Casin	_	<u> </u>	\longrightarrow			 								 				
Summa	ary	<u> </u>	\longrightarrow						*	-	+			+				
		느				<u> </u>					_				—		_	
Litholog		\vdash	Ss	Cht	Silt	Siltst	Cly	Cly	/st	Sh	L.	_st	Coal	Gvl	+	Tuff	Се	ement
(currer	nt)	<u></u>				*** * *				T . ,	<u> </u>				_		<u></u>	
Volu	mag	ļ		Capacity obls)		rillstring acity (bbls	Annul	lar Vo (bbls)		_	Corre (bbls)	ection		ottoms U Strokes	p		ttoms Time	•
₩ Oldi	IIICS	ļ	\~	<u>Dioj</u>		long (SS.S		(DD10)		†	,00.0			01101100			111110	
							Gas Sur	 mma	ary								_	
						11	>		_	romato	grap	oh (ppn	n)					
	ι	Jnits	; *	Depth	C	:-1	C-2		C-3			-4i	C-4	n	C-5i	i	C-5n	1
Maxim	ıum _				1	_												_
Minim	ıum																	
			_ •							—								_
Avera	ige		_							—				— –				_ '
Backgro	ound			Trip			Connection	n ຸ				* 10,0	000 Ur	nits =	100	% Gas	In Ai	r
(curre	nt)			(max)			(max)											
24 hr Re	cap: Cor	ntinue	e ria main	tenance a	nd repair	ing Barite	system, pic	k up (dumb ir	ron BHA	to tac	a bottom	n and c	heck wat	er de	oth.	_	
		.,		-	.,		-, ,,		-	-		,	·			F-		
İ																		
Lagging	Facino		Oralia An				Server Dear	Ornic	^ =====					Les Dhar	- : 0′	2220020		_
Logging	Engine	ers:	Craig Am	108		к	Report By:	Craig	Amos	,			ι	Unit Phor	ie: 83	3228020	155	

HALLIB Sperry Drilli		ЗТС			ľ	Mori	ning	Re	po	rt				Re	port :	# 5		
Customer: Well: Area: Location: Rig:			Shell Burge Chucki Alas Polar Pi	jer J ki Sea ska		Daily Cha Total Cha Rig Ad		AK-A	Pre S		00	(Curre	's Dept nt Dept Progres Dat Tim	h: _ s: _ e: _		0' 0' 0' ul-2019	
ROP ROP (ft/hr)		Curre	ent	Avg	24	hr Max	Max @	F		n (gpm) n (spm)		ent P	SPP	& Flo (psi) ns/strok			@	95%
MWD Summ	nary	E		epth to	\pm		To	ools					CD opg)	Avg	N	/lin	Ma	ax
Mud Da Depth M	ata Mud Ty	/ре	Densit in	ty (ppg) out	Visco (sec	,	MBT (ppb Eq	1)	PV cP	(lb/100		API I		рН	Chlor		Cor S	Solids %
Bit #		Bit T	уре	Size	TFA	Hours	Depth	n in / ou	t F	ootage		WOB		RPM		Cond	dition	
Casing Summary	,	Size	9	Set A	vt		Туре		W	/eight		Grad	de		Со	mmen	ts	
Lithology ((%)	S	is	Cht	Silt	Siltst	Cly	Clys	t	Šh	Ls	it	Coal	Gvl	Т	uff	Cem	nent
Volume	es:			Capacity bls)		illstring city (bbls		lar Voli (bbls)	ume	Lag Co (b	orred obls)	ction		ttoms U Strokes	р		toms U Time	Jp
Maximum Minimum	' <u> </u>	Inits*	-	Depth	C-		Gas Sur	nmar	-	omatog	jraph C-₄		n) C-4i	n	C-5i	- <u>-</u>	C-5n	- -
Average Background (current)				Trip (max)		(Connection (max)	n _		 -	k	* 10,0	000 Un	 nits =	100%	Gas	In Air	_
24 hr Recap hole BHA.					MD, con		repairs on			build kill	I mud	and sv		Begin P				_

HALL	IBU	RTO	N													
Sperry D	rilling				Moi	rning	Rep	or	t				Rej	port	# 6	
Custom	ner:	5	Shell Oil			Job No.:	AK-AN	/I-090 ⁻	16047	00	Yest	erdav	y's Deptl	h:	2	222'
	ell:		Burger J			harges:							nt Depti			138'
Ar	ea:		nucki Sea		-	harges:							Progres:	_		216'
Location	on:		Alaska		Rig	Activity:	F	re Sp	ud				Date	e:	30-J	ul-2015
R	Rig:	Pol	ar Pioneeı	,	Rep	ort For:		Shel	I				Time	e: _	12:	00 AM
ROF)	Current	t Av	g	24 hr Max	Max @	2 ft		(Curr	ent P	ump	& Flo	w Da	ata:	
ROP (f	t/hr)	0.0	54.	1	201.7	254		ow In ow In			457 92	SPP Gallo	(psi) ons/strok	e 4	.19	888 @ 95%
MWD C		_	Depth			T	ools				ΙE	CD	Avg	-	Min	Max
MWD Su	mmary	222'		438'	DGR, PV	VD, XBAT,	ADR, C	TN, Al	_D, MF	RIL		pg)	6.80	_	5.78	8.16
Mud	Data	D	ensity (ppg) Vis	scosity	MBT		PV	YF		API F		рН	Chlo	orides	Cor Solids
Depth 438'	Mud T SeaW				sec/qt)	(ppb Ed	7)	cР	(lb/10	Oft ²)	ml/30r	nin		m	ng/l	%
					<u> </u>	1	. , .			\pm		+				
Bit #		Bit Typ Iilltooth	e Siz		A Hours	Depth 222'	n in / out	Fo	otage		WOB		RPM		Con	dition
'	10	iiitootii	0.7			ZZZ				1						
		Size	S	et At		Туре		We	eight	K	Grac	le		C	ommer	its
Casir	ng										·					
Summ	ary								X							
								\rightarrow	_							
Litholo	gy (%)	Ss	Cht	Silt	Siltst	Cly	Clyst	5	Sh	Ls	t (Coal	Gvl		Tuff	Cement
(curre	ent)	<u> </u>						1_								
Volu	ımes	Ho	ole Capaci (bbls)	-	Drillstring pacity (bb		lar Volur (bbls)	ne	Lag C	orrec obls)	ction		ottoms U Strokes	р	Bot	toms Up Time
VOIU	IIII62		5	- Ca	0.78	13)	4.22		(1	0			36			1
					5.76	Gas Su		,					- 00			•
							a. y		matod	ıraph	n (ppm)				
	ι	Jnits*	Depth		C-1	C-2		C-3		C-4		, C-4	n	C-5i		C-5n
Maxin																
Minim	num															
IVIIIIII	<u> </u>						- -									
Avera	age			_												
Backgr	ound		Trip			Connectio	n			*	10,0	00 Ur	nits =	100%	6 Gas	In Air
(curre			(max)			(max)			-		,					
24 by Da	nan. Tro	ublaabaat	MMD toolo	bogin nic	king un DL	HA, complete	DUA nic	م مدر با	nd TILI	to 00	o floor	ahalla	au aulaa t	e o t o r	ad bagi	n
	-					eps pumped	-	кира	iiu iin	10 56	a 11001,	SHall	ow puise i	lest ai	iu begi	11
3 1			•													

Sperry D		RT	ON.			Mor	ning	Re	ро	rt				Re	port	: # 7		
Ar Locati	ell: ea:		Bur Chuc Ala	ell Oil ger J cki Sea aska Pioneer		Daily Ch Total Ch Rig A			ill 8.5	9016047 " Sectionell			Curre	y's Dept ent Dept Progres Dat Tim	h: s: e:	1 , 31-J	438' 005' 567' ul-201! 00 AM	
ROF)	Cı	urrent	Avg	2	4 hr Max	Max @) ft			Curi	rent	Pump	& Flo	w D	ata:		
ROP (f	t/hr)	6	64.6	64.6	_	196.7	450'			In (gpm In (spm)		456 92	SPP	(psi) ons/strol	ce 4	4.19	999 @	95%
MWD C.		T		Depth				ools		(-1-	/		ECD	Avg	=	Min	Ma	
MWD Su			438'	to 100	5' C	GR, PW	D, XBAT,	ADR,	CTN,	ALD, M	IRIL		(ppg)	10.0	_	9.38	11.	.73
	Data			sity (ppg)		cosity	MBT		PV	Y		API		рН		lorides	Cor S	
Depth 1005'	Mud T SeaWa		in 8.55	out	(se	ec/qt)	(ppb Eq	1)	сP	(lb/10	υπ)	ml/30	omin			mg/l	%	o
Bit #	#	В	Bit Type	Size	TFA	Hours	Depth	in/ou	ıt	Footage	, 4	WOB		RPM		Con	dition	
1	M	illtoo	th	8.5	0.668		222'				4	_						
		5	Size	Set	At		Туре		\	Weight	T	Gra	ade		(Commer	nts	
Casir	ng									72								
Summ	ary								K									
Litholo	av (%)	T	Ss	Cht	Silt	Siltst	Cly	Cly	et	Sh	Ls	et	Coal	Gvl	$\overline{}$	Tuff	Com	nent
(curre			03	Ont	Ont	Oiltot	Ciy	Oly	31	OII	L	31	Odai	001		Tun	OCII	ICIT
Volu	ımes			Capacity bbls)		rillstring acity (bbls		lar Vo (bbls)	lume	Lag (Corre (bbls)			ottoms L Strokes	lp	Bot	ttoms U Time	Jp
				39.9	<u> </u>	9.15		30.76			0			275			4 min	
							Gas Sur	mma	ry									
		l.a.:4.a.	.*	Danth			•		Chi C-3	romato	grapl C		•	l so	C E		C E	
Maxir		Jnits	;" 	Depth		;-1	C-2		U-3		<u> </u>	41	C-4	·n 	C-5	 	C-5n	_
Minin	num					y												
			_ (-										_
Aver	age		_					-										-
Backgr (curre			_	Trip (max)			Connectio (max)	n _				* 10,	,000 U	nits =	100	% Gas	In Air	
24 hr Re	ecap: Cor	ntinu	e to drill	from 438'	MD to 1	005' MD. F	Pump 20 bl	bl swe	eps ev	very sta	nd. Li	itholog	gy has	consiste	d of ı	nainly s	ilt w/	
beds of	coal, san	d, ar	nd clay b	pased off N	/IWD data	a.												
																		_
Logging	g Engine	ers:	Craig A	mos/ Leigh	Ann Ras	sher_ R	Report By:	Craig A	Amos/ L	<u>₋eigh</u> Ann	Rashe	er_		Unit Pho	ne: 83	3228020	055	

Sperry C		RT	ON			Mori	ning	Re	ро	rt				Re	port	# 8			
Ar Locati	/ell: rea:		Bur Chuc Ala	ell Oil ger J cki Sea aska Pioneer		Job No.: Daily Charges: Total Charges: Rig Activity: Report For:			AK-AM-0901604700 TD 8.5" Section Shell				Yesterday's Depth: Current Depth: 24 Hour Progress Date Time				: 1512' : 507' : 1-Aug-2015		
ROI	P	Cı	urrent	Avg	24	4 hr Max	Max @	ft			Curr	ent P	ump	& Flo	w D	ata:			
ROP (1	ft/hr)			57.8		244.4 1079'				In (gpm) In (spm)			SPP	(psi) ns/strok	ke 4.19 @ 95%				
MWD C.		Τ		Depth			T	ools		(9,)		I E	CD	Avg	+	Min		lax	
MWD Su	ımmary			to								_	pg)	9.73		9.29	10).69	
	l Data			sity (ppg)	_	osity	MBT				P	API F ml/30r		рН		orides		Solids	
Depth 1005'	Mud T		in 8.55	out	(se	c/qt)	(ppb Eq)	сP	(lb/10	(lb/100ft ²)		nın		r	ng/l		%	
Bit :	#	В	it Type	Size	TFA	Hours	ours Depth		in / out		ootage		WOB			Condition			
1	М	illtoo	th	8.5	0.668	27.93	222'	1512	2'	1290'	4	15.0		100.0					
		(Size	Set	At		Туре		T	Weight	T	Grac	de		С	ommer	ıts		
Casir	_										1717		,						
Summ	ary					 			K										
Litholo	av (%)	T	Ss	Cht	Silt	Siltst	Cly	Clys	et	Sh	Ls	t I	t Coal		T	Tuff	Cer	ment	
(curre			00	Ont	Ont	Oiltot	Oly	Oly.		On			Ooui	Gvl		Tan	001	ПОП	
Volu	ımes		(Capacity bbls)	Capacity				ume	_	Lag Correc (bbls)		ction Bo		р		toms Time	Up	
			1	06.11		\leftarrow													
							Gas Sur	nma	-	romato	arank	h (nnm							
Maxir		Inits* Depth			C	5-1	C-2				Chromatograph C-3 C-4						C-5n		
Minin	num		_	A				. <u> </u>		<u> </u>								_	
Aver	age							_										_	
Backgi (curr				Trip (max)			Connectio (max)	n _			,	* 10,0	00 Ur	nits =	100	% Gas	In Air		
24 hr Ro & L/D B	-	ntinu	e to drill	from 1005	i' MD to	I512' MD,	TD Pilot H	ole se	ction	at 1512'	MD, p	oump 2	0 bbl s	sweeps	every	stand.	POOH		
Loggin	g Engine	ers:	Craig A	mos/ Leigh	Ann Ras	sher R	eport By:	Craig A	.mos/ L	eigh Ann	Rashe	er_	ι	Jnit Phor	ne: 83	3228020)55	_	

ROP Current Avg 24 hr Max Max @ ft Current Pump & Flow Data: ROP (ft/hr) 64.1 215.4 274' Flow In (gpm) SPP (psi) Flow In (spm) Gallons/stroke 4.19 @	Customer: Shell Oil Daily Charges: Current Depth: 384 Area: Chukchi Sea Total Charges: Current Depth: 384 Current Depth: 24 Hour Progress: 162 Date: 2-Aug-2 Date: Date: 2-Aug-2 Date:	HA	LLI	BU	RT	ON.			N/I		D		4									
Well:	Well:	Sperr	ry Or	illing					Wor	ning	Kep	or	τ				Re	por	t # 9			
Area: Chukchi Sea Total Charges: Rig Activity: POOH w/ 36" Bit Date: 2-Aug-200 AM	Area: Chukchi Sea Total Charges: 162 Location: Alaska Rig Activity: POOH w/ 36" Bit Date: 2-Aug-2 Time: 12:00 /	Customer:				Shell	l Oil		Job No. : AK-AM-0901604700							Yesterday's Depth: 222'						
Coation: Rig: Polar Ploneer Report For: Pool w/ 36" Bit Date: 2-Aug-201	Right		We	II: —		Burg	er J		Daily Ch	harges:												
Rop	Rightarrow Polar Pioneer Report For: Shell Time: 12:00 / Pioneer RoP (f/hr) 64.1 215.4 274' Flow in (gpm) SPP (psi) Gallons/stroke 4.19 ©		Area	a:		Chukch	ni Sea		Total Ch	harges:					24 H	our F	Progres	s:				
ROP Current Avg 24 hr Max Max @ ft Current Pump & Flow Data:	ROP Current Avg 24 hr Max Max @ ft Current Pump & Flow Data:	Lo							_	POC	POOH w/ 36" Bit											
ROP (ft/hr)	ROP (ft/hr)		Ri	g:		Polar P	ioneer		Report For:			Shell					Tim	e:	12:00 AM			
MWD Summary	MWD Summary									_				Curr				ow Data:				
Mud Data	Mud Data	RO	OP (ft/l	hr)			64.1		215.4	274'								e	4.19 @ 95%			
Mud Data Density (ppg) Viscosity MBT PV YP APIEL pH Chlorides Cor S MBIT PV (ppb Eq) cP (lb/100ft ²) ml/30min mg/l c9 1005' SeaWater 8.55 seaWater	Mud Data Density (ppg) Viscosity MBT PV YP API FL pH Chlorides Comments	MWE) Sun	nmarv	,					To	ools					Avg	Avg Min		M	ах		
Depth Mud Type in out (sec/qt) (ppb Eq) cP (lb/100f²) ml/30min mg/l 9 1005′ SeaWater 8.55	Depth Mud Type in								ocity	MDT	1	DV VD				_	<u>Б</u> Ц	Chloridos	Cor	Solido		
Bit # Bit Type Size TFA Hours Depth in / out Footage WOB RPM Condition	Bit # Bit Type Size TFA Hours Depth in / out Footage WOB RPM Condition		-				I	-	- 1		`						рп	Ci				
Bit # Bit Type Size TFA Hours Depth in / out Footage WOB RPM Condition	Bit # Bit Type Size TFA Hours Depth in / out Footage WOB RPM Condition						out	(sec	3/qt)	(bbp Ed)	CP	(10/10011)		mi/30m	iin	\longrightarrow	mg/l		9	<u>′o</u>	
1	1	100	,5	Seave	alei	0.00				_		<u> </u>										
Size Set At Type Weight Grade Comments	Casing Summary Lithology (%) Ss Cht Silt Siltst Cly Clyst Sh Lst Coal Gvl Tuff Coal Comments Coal Comments Coal	ŀ	Bit#		В	it Type	Size	TFA	Hours	Depth	in / out	out Foo		otage			RPM		Condition			
Casing Summary Lithology (%) Ss Cht Silt Siltst Cly Clyst Sh Lst Coal Gvl Tuff Cen (current) Polumes Hole Capacity (bbls) Ca	Casing Summary Lithology (%) Ss Cht Silt Siltst Cly Clyst Sh Lst Coal Gvl Tuff Concern (current) Hole Capacity (bbls) Capacity (bbls) (bbls) (bbls) (bbls) Strokes Time Cas Summary Chromatograph (ppm) Minimum Average Background Trip (max) Connection Sottoms Up Bottoms Up (bbls) (bbls) (bbls) (capacity (capacity (bbls) (capacity (bbls) (capacity (bbls) (capacity (bbls) (capacity (bbls) (capacity (bbls) (capacity (capacity (bbls) (capacity (bbls) (capacity (bbls) (capacity (bbls) (capacity (bbls) (capacity (1		M	lilltoot	th	8.5	0.668	27.93	222'	1512'				15.0		100.0					
Casing Summary Lithology (%) Ss Cht Silt Siltst Cly Clyst Sh Lst Coal Gvl Tuff Cen (current) Polumes Hole Capacity (bbls) Ca	Casing Summary Lithology (%) Ss Cht Silt Siltst Cly Clyst Sh Lst Coal Gvl Tuff Concern (current) Hole Capacity (bbls) Capacity (bbls) (bbls) (bbls) (bbls) Strokes Time Cas Summary Chromatograph (ppm) Minimum Average Background Trip (max) Connection Sottoms Up Bottoms Up (bbls) (bbls) (bbls) (capacity (capacity (bbls) (capacity (bbls) (capacity (bbls) (capacity (bbls) (capacity (bbls) (capacity (bbls) (capacity (capacity (bbls) (capacity (bbls) (capacity (bbls) (capacity (bbls) (capacity (bbls) (capacity (
Lithology (%) Ss Cht Silt Siltst Cly Clyst Sh Lst Coal Gv Tuff Cen	Lithology (%) Ss Cht Silt Siltst Cly Clyst Sh Lst Coal Gv Tuff Coapacity (bbls) Capacity (b				S	Size	Set A	\t		Type		We	eight		Grade	Э			Commen	ts		
Lithology (%) Ss Cht Silt Siltst Cly Clyst Sh Lst Coal Gv Tuff Cen	Lithology (%) Ss Cht Silt Siltst Cly Clyst Sh Lst Coal Gv Tuff Coapacity (bbls) Capacity (b	С	asino	ı l											·							
Lithology (%) Ss Cht Silt Siltst Cly Clyst Sh Lst Coal GvI Tuff Centrol (current) Volumes Hole Capacity (bbls) Capacity (bbls	Lithology (%) Ss Cht Silt Siltst Cly Clyst Sh Lst Coal Gvl Tuff Coal Coa		_																			
Volumes Hole Capacity (bbls) Drillstring Capacity (bbls) Annular Volume Lag Correction (bbls) Strokes Time Capacity (bbls) Capacity (Volumes Hole Capacity (bbls) C		ШПа	ı y																		
Volumes Hole Capacity (bbls) Drillstring Capacity (bbls) Annular Volume Lag Correction (bbls) Strokes Time Capacity (bbls) Capacity (Volumes Hole Capacity (bbls) C		nolog	v (%)	v (%)		Cht		Siltst	Clv	Clyst		Sh	Ls	Coal		Gyl	Tuff		Cen	nent	
Volumes Hole Capacity (bbls) C	Volumes Hole Capacity (bbls) Drillstring Capacity (bbls) Annular Volume (bbls) Lag Correction (bbls) Bottoms Up Strokes Bottom Time Volumes Gas Summary Maximum Units* Depth C-1 C-2 C-3 C-4i C-4n C-5i C-5 Maximum Average Background (current) Trip (max) Connection (max) * 10,000 Units = 100% Gas In Annular Volume (bbls)						5 0		- Cintot	0.9	S.yo.		-				+			00.	10110	
Chromatograph (ppm) Chromatograph (ppm) Chromatograph (ppm) C-5n Maximum Minimum Average Background (current) Trip (max) Connection (max) * 10,000 Units = 100% Gas In Air C-5n C-5	Chromatograph (ppm) Chromatograph (ppm) Chromatograph (ppm) C-5			·/	(bbls)		apacity			Annul	ar Volu	me	Lag C	orrec			ttoms U	p	Bot	toms l	Jp	
Chromatograph (ppm) C-5	Chromatograph (ppm) C-1			nes			Сара	city (bbls	s)	bbls)) (bbls)				(Strokes			Time			
Maximum	Chromatograph (ppm) C-5					20.	3.93			Gas Sur	nmary	<u> </u>										
Maximum Minimum Average Background (current) Trip (max) Connection (max) * 10,000 Units = 100% Gas In Air	Maximum Minimum Average Background (current) Trip (max) Connection (max) * 10,000 Units = 100% Gas In A									>	,		matog	raph	n (ppm))						
Minimum Average Background (current) Trip (max) Connection * 10,000 Units = 100% Gas In Air (max)	Minimum Average Background (current) Trip (max) Connection * 10,000 Units = 100% Gas In A				Jnits	*	Depth		-1	C-2		C-3 C-			∙4i C-4r		n C-5		5i C-5 i			
Average Background Trip Connection * 10,000 Units = 100% Gas In Air (max)	Average Background Trip Connection * 10,000 Units = 100% Gas In A (max)	IV	<i>l</i> laxımı	um			-														_	
Background Courrent * 10,000 Units = 100% Gas In Air (max)	Background Courrent * 10,000 Units = 100% Gas In A	Minimum _		ım _		_															_	
(current) (max) (max)	(current) (max) (max)	Average _		ge		_							- <u>-</u>								_	
											n		_	*	10,00)0 Ur	nits =	100	0% Gas	In Air		
24 hr Recap: P/U BHA #2 & drill ahead f/ 222' MD to 384' MD w/ 36" hole opener. POOH & begin to L/D BHA #2.	24 hr Recap: P/U BHA #2 & drill ahead f/ 222' MD to 384' MD w/ 36" hole opener. POOH & begin to L/D BHA #2.		(Curren	ι)			(IIIax)			(********)												
24 nr Recap: P/U BHA #2 & drill anead t/ 222' MD to 384' MD W/ 36" noie opener. POOH & begin to L/D BHA #2.	24 nr Recap: P/U BHA #2 & drill anead f/ 222' MD to 384' MD W/ 36" hole opener. POOH & begin to L/D BHA #2.			D/11	DILLA	"0 0 1 !!		0001 140	4. 00411	4D /00" I	_	- D	2011.0		1.1/5	DIII	"0					
		24	nr Rec	ap: P/U	BHA	#2 & arii	ı anead t/	222. MD	to 384° N	VID W/ 36" N	oie ope	ner. Po	JUH &	begi	n to L/D	BHA	#2.					
		_																			-	

Unit Phone: 8322802055

Logging Engineers: Craig Amos/ Leigh Ann Rasher Report By: Craig Amos/ Leigh Ann Rasher

Sperry C		RT	-ON			Mori	ning	Re	poı	rt				Rep	ort	# 10		
Aı Locati	/ell: rea:	Shell Oil Burger J Chukchi Sea Alaska Polar Pioneer				Job No.: Daily Charges: Total Charges: Rig Activity: Report For:			Wait on weather Shell				Yesterday's Depth: 38 Current Depth: 38 24 Hour Progress: 0 Date: 3-Aug- Time: 12:00					-
ROI		Cı	urrent	Avg	24	hr Max	Max @							& Flo	w D	ata:		
ROP (ft/hr)									n (gpm) n (spm)			SPP Gallo	(psi) ons/strok	ke 4	4.19	@ 95	%
MWD St	ımmary	,	D	epth to			T	ools				_	CD	Avg	Ţ	Min	Max	_
Muc	l Data		Dens	sity (ppg)	Visc	osity	MBT		PV	YI	P	API F	pg)	рH	Chl	lorides	Cor Soli	ds
Depth	Mud T		in	out	-	c/qt)	(ppb Eq)			_		ml/30min		ph Chior mg		%	
1005'	SeaWa		8.55 sit Type	Size	TFA	Hours	Donth	in / ou		Footage		WOB	 _	RPM		Con	dition	
1	Mi	II Toc	oth	8.5	0.668	27.93	222'	151	2'	1290'		15.0	_	100.0		-NO-A-I	E-IN-NO-T	
2	IVII	II Too	Size	36 Set /	1.117	9.97	222' Type	384		162' Veight	+-	2 Grad	e	46 T		Ommer	-IN-NO-BI	ΗA
Casii	ng			001711			. , , , ,											
Summ	ary										+							
Lithology (%)		T	Ss	Cht	Silt	Siltst	Cly	Cly	st	Sh	Lst	t (Coal	Gvl	T	Tuff	Cemer	nt
(curr		上						X										_
Volu	umes	(t		Capacity bbls) Ca		rillstring acity (bbls		Annular Volu (bbls)		lume Lag Correc (bbls)		ction		ottoms U Strokes	р	Bot	toms Up Time	
			2(33.93			Gas Sur	nma	ry									
Maxii		Jnits	,* 	Depth	c	-1	C-2			omato	graph C-4) C-4	n	C-5i	i	C-5n	
Minir Aver	_		-	6,				· _		<u> </u>								
Backg (curr			_	Trip (max)			Connectio (max)	n _		_	*	10,0	00 Ur	nits =	100	% Gas	In Air	
				n weather.		hor B	Report By:	Craig	Amas/1	oigh App	Packa			Jnit Phor	no: 83	2228020		

Sperry C		R1	ron			Моі	nir	ıg	Rej	001	rt				Re	epor	t # 11		
Aı Locati	/ell: rea:		Bur Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Job No.: Daily Charges: Total Charges: Rig Activity: Report For:				AK-AM-0901604700 Rig Maintenance Shell				Curr	y's Dep ent Dep Progre Da Tir	th: ss: ite:	384' 0' 4-Aug-2015		
RO		С	urrent	Avg	- 1	24 hr Ma	x N	/lax @					rent		p & Fl o	ow	Data:		
ROP (ft/hr)						+				n (gpm) n (spm)			4.19 @ 95%					
MWD St	ımmary	<i>,</i>	D	Depth to				T	ools				T	ECD			Min	Max	
Muc Depth 1005'	Mud T		Dens in 8.55	out	_	Viscosity (sec/qt)		MBT (ppb Eq)		PV YP cP (lb/100ft				I FL Omin	FL pH		hlorides mg/l	Cor Solids %	
Bit			Bit Type	Size	TFA	Hou	rs	Depth	in / out		ootage	T	WOE		RPM	T	Con	dition	
1 2		II To		8.5 36	0.66			22' 22'	1512 384'	'	1290' 162'		15.0		100.0 ²		1-1-NO-A-E-IN-NO- -1-NO-A-E-IN-NO-E		
Casii Summ	_	Size		Set At		Туре		ре		V	Veight		Grade				Comments		
Litholo (curr		F	Ss	Cht	Silt	lt Siltst		Cly		t	Sh Ls		st Coal		l Gvl		Tuff	Cement	
	umes	Hole Capacity (bbls) 203.95				9			lar Volu (bbls)	r Volume Lag Corre				ottoms Strokes	•	Во	ttoms Up Time		
							Gas	Sur	mmar	•	omatog	grap	h (pp	m)					
Maxii Minir	Maximum			Units* Depth			C-1 C-2			C-3			-4i	•	4n 	C-5	5i C-5n		
Aver				V	_				· –										
Backg (curr	round		_	Trip (max)				Connection (max)					* 10,000 Units = 100% Gas In Air						
	g Engine								erm mai			stan	ndpipe		Unit Pho				

Sperry D		21	ON			Mor	ning	Rep	or	t				Re	port	t # 12	
Custome We Are Locatio Ri	ell:		Burg Chukc Ala	II Oil ger J chi Sea ska Pioneer		Daily Cl Total Cl Rig A	_		M-090 RIH w/		<u>) </u>	Cu	ırrer	's Depti nt Depti Progress Date Time	h: s: e:	5-Au	222' 230' 8' ug-2015 00 AM
ROP			urrent 0.0	Avg 0.6	24	4 hr Max 2.1	Max @		low In					& Flo (psi)	w C		2750
MWD Sui	mmarv	T		epth			<u> </u>	ools	low In	(spm)	2	ECI	D	ns/strok Avg	_	4.19 Min	@ 95% Max
Mud Depth 1005'		ype		sity (ppg)		c/qt)	MBT (ppb Ec	3)	PV cP	YP (lb/100ff		API FL ml/30min	T	рН	_	llorides mg/l	Cor Solids
Bit #	Mill	B I Too		Size 8.5 36	TFA 0.668 1.117	Hours 27.93 9.97	Depth 222' 222'	n in / out 1512' 384'	' 1	ootage 1290' 162'	1	VOB 15.0 2		RPM 100.0 46		I-NO-A-I	dition E-IN-NO-TD -IN-NO-BHA
Casin Summa	_		Size	Set	At		Туре		We	eight		Grade				Commer	its
Litholog (currer		Ŧ	Ss	Cht	Silt	Siltst	Cly	Clys	t s	Sh	Lst	Со	al	Gvl	Ŧ	Tuff	Cement
Volu	mes		(b	Capacity obls) 39.73		rillstring acity (bbl		lar Volu (bbls)	ıme	Lag Coı (bb		ion		ttoms U Strokes	р		ttoms Up Time
Maxim Minim	num	nits		Depth	C	3-1	C-2	mmar	•	omatogra	aph C-4i		C-4r	ı — –	C-5i	i — –	C-5n
Avera Backgro	ound		_ _	Trip (max)		<u> </u>	Connectio (max)	n		- — -	*	10,000	Un	<u> </u>	100	— — I% Gas	In Air
24 hr Re	cap: Con	t rep	pair kelly	hose. Rli	I w/ MLC	& drill a	ahead f/ 222	2' MD to	230' N	ID.							

HALL	IBU	-				N /	. =			.4								
Sperry D	Prilling					viorn	ning	Ke	por	τ				Re	port	t # 13		
Ar Locati	ell:		Bur Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Daily Char Total Char Rig Ad			AM-090 pecting	g MLC			Curr	y's Dept ent Dept Progres Dat Tim	th: ss: te:	6-Au	230' 241' 11' ig-2015 00 AM	
ROF)	Cı	urrent	Avg	24	hr Max	Max @	ft		(Curi	rent	Pum	p & Flo	w [Data:		_
ROP (f	ft/hr)			0.7		1.1	236'		Flow Ir	ı (gpm)		SPF	p (psi)				_
							<u> </u>		Flow Ir	n (spm)		Gall	ons/stro	ke	4.19	@ 95%	,
MWD Su	ımmary	<i>,</i> -	D	Depth to			To	ools					ECD (ppg)	Avg	\mp	Min	Max	_
Mud	Data		Dens	sity (ppg)	Visc	osity	MBT	T	PV	Υ	Р	API	FI	рН	Ch	nlorides	Cor Solids	■
Depth	Mud T	уре	in	out	-	c/qt)	(ppb Eq)	сP	(lb/10		ml/30		ρ		mg/l	%	•
241'	SeaW		8.55							Ì	,							
Bit :	#	В	Bit Type	Size	TFA	Hours	Depth	in / ou	ıt F	ootage		WOB	Т	RPM	П	Con	dition	-
1 2	Mi	II Too	oth	8.5 36	0.668 1.117	27.93 9.97	222' 222'	1512 384	2'	1290' 162'		15.0		100.0 46		1-NO-A-E	E-IN-NO-TD -IN-NO-BH/	
		,	Size	Set /	Αt		Туре		W	eight	T	Gra	de		(Commen	nts	
Casir	ng																	
Summ	_																	
	J																	
Litholo	gy (%)	T	Ss	Cht	Silt	Siltst	Cly	Cly	st	Sh	Ls	st	Coal	Gvl	Ī	Tuff	Cement	
(curre	ent)				_			\rightarrow	4				_		_			_
Volu	ımes			Capacity bbls)		rillstring acity (bbls	Annul	ar Vol bbls)	ume	Lag C	Corre bbls)		В	ottoms L Strokes	•		ttoms Up Time	
			11	07.89												1		_
							Gas Sur	nma	ry									
						7			Chro	omato	grap	h (ppi	m)					
		Jnits	; *	Depth	C	-1	C-2		C-3		C-	4i	C-	4n	C-5	i	C-5n	
Maxir	num							_										
Minin	num		_ 4		_			_										
Aver	age		_ `	X				_										
Backgi (curre	round		_	Trip (max)		(Connection (max)	n _		_		* 10,	000 L	Inits =	100)% Gas	In Air	
24 br D	ocan: Dril	Labo	and f/ 23	0' MD to 24	11' MD w	/MICR E	Pull off bot	tom to	ineno	ot MLC	·P							=
24 Nr R	ecap: Drii	ıı ane	3au 1/ 23	U IVID TO 22	N MID W	7 IVILUB. F	ruii oii bot	tom to	ınspe	Ct WILC	ъ.							
Loggin	a Engine	oro:	ا	Denge = 1/1 - 1	Av D	ahar D	oport D:	ا منحد	Ann D-					Linit Dh	20: 0	222000		
∟ogging	y ⊏nyine	CIS.	Anarew E	Bongard/Leig	<u>jii Ann</u> Ka	sner K	eport By:	∟eign	AIIII K	19116t				Unit Pho	ı⊎. 8	JZZ0UZ(วงง	

HALL	IBU	RI				N/I	. =	n		.4								
Sperry D	Prilling					worr	ning	Ke	por	Έ				Re	por	t # 14		
Ar Locati	ell:		Bur Chuki Ala	ell Oil rger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A				016047 g MLCE			Curr	ny's Deprent Deprent Progres Da Tim	th: ss: te:	7-Au	241' 241' 0' ug-2015 00 AM	
ROF	-	C	urrent	Avg	24	4 hr Max	Max @	ft			Cur	rent	Pum	p & Flo	w [Data:		_
ROP (f	ft/hr)									າ (gpm)		SPF	P (psi)				
					<u></u>				Flow Ir	n (spm)		Gal	lons/stro	ke	4.19	@ 95%)
MWD Su	ımmary	<i>,</i> –		Depth to			To	ools					ECD (ppg)	Avg	\pm	Min	Max	_
Mud	Data		Den	sity (ppg)	Visc	osity	MBT	Т	PV	Y	Р	API	FL	рН	Cr	nlorides	Cor Solids	s
Depth	Mud T		in	out	(se	c/qt)	(ppb Eq)	сP	(lb/10	00ft ²)	ml/30	Qmin			mg/l	%	
241'	SeaW	ater	8.55	<u> </u>											<u> </u>			_
Bit a	#	Е	Bit Type	Size	TFA	Hours	Depth	in / ou	t F	ootage	,	WOB		RPM		Con	dition	
1 2		II Too		8.5 36	0.668 1.117	27.93 9.97	222' 222'	1512 384		1290' 162'		15.0 2	1	100.0 46			E-IN-NO-TD -IN-NO-BH/	
		Ç	Size	Set .	At		Type		V	/eight	X	Gra	ade		(Commen	its	
Casir	ng																	
Summ	ary										_							
										_					_			_
Litholo	gy (%)		Ss	Cht	Silt	Siltst	Cly	Clys	st	Šh	Ŀ	st	Coal	Gv		Tuff	Cement	
(curre	ent)	\perp						\leq	4						<u> </u>			_
Volu	ımes			Capacity bbls)		rillstring acity (bbls	Annul	ar Vol (bbls)	ume	Lag (Corre (bbls)		В	ottoms l Strokes			ttoms Up Time	
			11	107.89														
							Gas Sur	nma	у									
							·		Chr	omato	grap	h (pp	m)					
		Jnits	; *	Depth	C	-1	C-2		C-3		C-	4i	C-	4n	C-5	i	C-5n	
Maxir	num			-				_										
Minin	num																	
Aver	age			V														
Backgı (curre	round			Trip (max)			Connectio	n _		_		* 10,	000 L	Jnits =	100)% Gas	In Air	
(ouri	onty			(шах)														
24 hr R	ecap: PO	он v	v/ MLCB	3. Inspect N	ILCB & c	clean off.												٦
_																		
Logging	g Engine	ers:	Andrew !	Bongard/Leig	gh Ann Ra	sher R	eport By:	Leigh	Ann Ra	asher				Unit Pho	ne: 8	3228020)55	

HALL		RT	.ON		ı	Morr	ning	Re	po	rt				Re	nori	# 15		
Sperry D	Irilling													No	рол	" 10		
Ar Locatio	ell: ea:		Bur Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A			Repai	9016047 r Pump nell	700	C	urre	's Dept nt Dept Progres Dat Tim	h: s: e:	8-Au	241' 241' 0' g-2015	_ _ _ _ _
ROF		Cı	urrent	Avg	24	4 hr Max	Max @							& Flo	w E	ata:		
ROP (f	t/hr)									In (gpm) In (spm)			SPP Gallo	(psi) ns/strol	ke -	4.19	@ 9	5%
MWD Su	mmary	<u>, </u>	D	Depth to	\blacksquare		Т	ools					CD	Avg	Ŧ	Min	Max	
Mud	Data		Dens	sity (ppg)	Visc	osity	MBT		PV	YI	Р	API F		рН	Ch	lorides	Cor So	lids
Depth 241'	Mud T SeaWa		in 8.55	out	(se	c/qt)	(ppb Ec	7)	cР	(lb/10	Oft ²)	ml/30n	nin			mg/l	%	
Bit #			Bit Type	Size	TFA	Hours	Depth	in / o	ut	Footage	. 4	WOB		RPM		Con	dition	
1 2		II Too	oth	8.5 36	0.668 1.117	27.93 9.97	222' 222'	151 384	2'	1290' 162'		15.0	_	100.0 46			E-IN-NO- -IN-NO-E	
<u>'</u>			Size	Set			Туре			Weight		Grad	е			Commer		
Casir	_									₩								
Summ	ai y																	
Litholo	gy (%)	T	Ss	Cht	Silt	Siltst	Cly	Cly	st	Sh	Ls	t (Coal	Gvl	Ţ	Tuff	Ceme	nt
(curre	ent)		Holo	Capacity	TD	rillstring	Annu	lar Vo	lumo	Lag C	`orro	etion	Bo	ttoms U	ln.	Rot	toms Up	
Volu	ımes		(l	bbls)		acity (bbls		(bbls)	idille	_	bbls)	MOIT		Strokes	ν Ρ		Time	
			11	07.89			Gas Sui		M1.7									
							Jas Sui	Шпа	•	romato	grapł	n (ppm)					
		Jnits	; *	Depth	c	:-1	C-2		C-3		C-4	4i	C-4	n	C-5	i	C-5n	
Maxin					/-			-										
Minim	num		- 4	Θ	\ <u> </u>			-										
Avera	age		_					-										
Backgr (curre			_	Trip (max)			Connectio (max)	n _			ł	10,00	00 Un	nits =	100	% Gas	In Air	
24 hr Re	ecap: Cor	nt to	clean of	ff MLCB. R	IH w/ MI	C & tag b	oottom, Ri	g mair	tenan	ce on pi	ump.							
							,	9										
Logaina	g Engine	ers:	Andrew [Bongard/Lei	gh Ann Ra	asher R	eport Bv:	Leiah	Ann F	Rasher			U	Jnit Phor	ne: 8	3228020)55	

HALL	.IBUI	RI	ON			N/I		D _		.4							
Sperry C	Orilling					worn	ning	Ke	por	τ				Re	por	t # 16	
Ar Locati	ell:		Bur Chuko Ala	ell Oil rger J chi Sea aska Pioneer		Daily Cha Total Cha Rig Ad				016047 ut Hole		<u>.</u> !	Curr	ny's Dep ent Dep Progres Da Tin	th: ss: te:	9-Au	241' 257' 16' 1g-2015 00 AM
ROI	P	Cı	urrent	Avg	24	4 hr Max	Max @	ft			Cur	rent	Pum	p & Flo		Data:	
ROP (1			0.0	1.1	- 	1.9	257'		Flow Ir	n (gpm		1428		P (psi)			2971
,	,									n (spm		303	Gal	lons/stro	ke	4.19	@ 95%
MWD Su	ımmary	<u>-</u>		Depth to	\mp		Т	ools				-	ECD	Avç	<u> </u>	Min	Max
Mud	Data		Den	sity (ppg)	Visc	osity	MBT		PV	Ιγ	P	AP	l FL	рН	Cł	nlorides	Cor Solids
Depth	Mud T	уре	in	out	_	c/qt)	(ppb Eq	1)	сP	(lb/10			0min	μ		mg/l	%
257'	SeaW		8.55								,						
Bit :	#	В	Bit Type	Size	TFA	Hours	Depth	in / ou	ıt F	ootage	: T	WOE	3	RPM	匸	Con	dition
1 2	Mi	II Too	oth	8.5 36	0.668 1.117	27.93 9.97	222' 222'	1512 384	2'	1290' 162'		15.0 2		100.0 46		1-NO-A-I	E-IN-NO-TD -IN-NO-BH/
		Ş	Size	Set .	At		Туре		W	/eight	T	Gra	ade	П	(Commen	its
Casir	ng																
Summ	_																
Litholo		T	Ss	Cht	Silt	Siltst	Cly	Clys	st	Sh	L	st	Coal	Gv		Tuff	Cement
(curre	ent)		=		_			\rightarrow	4				_			1	
Volu	ımes		(1	Capacity bbls)		rillstring acity (bbls	Annul	ar Vol (bbls)	ume	Lag (orre bbls		В	Sottoms l Strokes	•		toms Up Time
			20	040.84	<u></u>	-											
							Gas Sur	nma	ry								
									Chro	omato	grap	h (pp	m)				
		Jnits	*	Depth	C	-1	C-2		C-3		C-	-4i	C-	4n	C-5	5i	C-5n
Maxir	num					_		_									
Minin	num																
			_ (_		_							
Aver	age		_					_									
Backgi (curre	round		_	Trip (max)		(Connectio	n _		_		* 10	,000 L	Jnits =	100	0% Gas	In Air
		_															
24 hr R	ecap: Fin	ish r	ig maint	tenance on	pump. [Orill ahead	l w/ MLCB	f/ 241	' MD to	257' N	ID. C	circ &	clean	out hole.			
Logging	g Engine	ers:	Andrew I	Bongard/Lei	gh Ann Ra	sher R	eport By:	Leigh	Ann Ra	asher				Unit Pho	ne: 8	3228020)55

Sperry D		R 1			ı	Morr	ning	Re	ро	rt				Rej	oort	# 17		
орен у о	9																	
Custom				ell Oil			ob No.:	AK-	AM-09	9016047	700			y's Dept			257'	_
	ell: ea:			ger J chi Sea		Daily Ch Total Ch								ent Dept Progres			257' 0'	_
Location			Ala	aska		Rig A	ctivity:	R		C Equip	o			Dat	te:		ug-2015	_
R	ig:		Polar	Pioneer		Repo	ort For:		SI	nell				Tim	e:	12:0	00 AM	-
ROF		Cı	urrent	Avg	24	4 hr Max	Max @					ent F		& Flo	w C	Data:		
ROP (f	t/hr)				_		<u> </u>			In (gpm In (spm				(psi) ons/stro	ке	4.19	@ 95	5%
MWD Su	mmarv	, _	С	Depth			T	ools		` .	, ,	E	CD	Avg	Ī	Min	Max	
				to	 								ppg)		4	-		
Depth	Data Mud T			sity (ppg)	_	osity	MBT	٠,	PV cP	(lb/10	_	API ml/30		pН		lorides	Cor Soli %	ids
257'	SeaWa	-	in 8.55	out	(Se	c/qt)	(ppb Ec	1)	CP	(10/10	JUIT)	111/30	min			mg/l	%	
Bit #	<i>‡</i>	В	Bit Type	Size	TFA	Hours	Depth	in / ou	ut	Footage	. 4	WOB	₹	RPM		Con	dition	
1 2		II Too	oth	8.5 36	0.668 1.117	27.93 9.97	222' 222'	151 384		1290' 162'	40	15.0		100.0 46			-IN-NO-T	
			Size	Set			Туре			Weight	T	Gra	de			Commen		=
Casin	ng																	
Summa	ary								K									
		_									_	_			—			
Litholog (curre		-	Ss	Cht	Silt	Siltst	Cly	Cly	st	Sh	Ls	st	Coal	Gvl	+	Tuff	Cemei	nt
(ourro			Hole	Capacity	Di	rillstring	Annul	lar Vo	lume	Lag C	Correc	ction	Во	ottoms L	Jp	Bot	toms Up	
Volu	mes		(I	bbls)		acity (bbls		(bbls)		_	bbls)			Strokes			Time	
			20)40.84			Coo Cui		-43									_
							Gas Sur	nma	•	romato	aranl	h (nnn	n)					
	ι	Jnits	s*	Depth	C	3-1	C-2		C-3		grapi C-4		··, C-4	ln .	C-5	i	C-5n	
Maxim																		
Minim	num																	
Avera			_				<u> </u>											
			_		-	—									400			
Backgr (curre			_	Trip (max)		— '	Connectio (max)	n _				" 10,0	J00 U	nits =	100	% Gas	in Air	
24 br Po	can: TO	оц _и	// MLCB	. Clean off	MICRS	proparo	ria floor fe	or 42"	holo c	nonor I	Porfor	m ria	maint	nanco o	n n	ımne		_
24 III Re	сар. 100	OH W	V/ IVILUE	. Clean on	WILCD 6	i prepare	rig floor ic)I 42	noie c	pener. r	renoi	ili rig	mamu	enance c	nı pu	iiips.		
_																		
Logging	Engine	ers:	Andrew I	Bongard/Leid	gh Ann Ra	asher R	eport Bv:	Leiah	Ann F	Rasher				Jnit Phor	ne: 8	3228020)55	

Sperry D		RT	ON.		ľ	Morr	ning	Re	po	rt				Re	port	# 18		
Are Locatio	ell:		Burç Chukc Ala	ell Oil ger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A				Hole Openell			Curre	r's Depti ent Depti Progres Date Time	h: s: e:	11-Au	257' 287' 30' ug-20 00 AM	
ROP (ft		_	urrent 31.4	Avg 75.6		4 hr Max 149.2	Max @ 267'	"		In (gpm) In (spm)	1)	rent l 1062 255	SPP	psi) (psi) ons/strok			608 @	95%
MWD Su	mmary	王		Depth to	\pm		Т	ools					ECD (ppg)	Avg	I	Min	IV	/lax
Depth 287'	Data Mud T		Dens in 8.55	out	_	cosity c/qt)	MBT (ppb Ed	g)	PV cP	(lb/10		API ml/30	FL	рН		lorides mg/l		Solids %
Bit #	Mi	ill Toc	oth	Size 36 36	1.117 1.117		222' 257'	h in / ou 384		Footage 162'		WOB 2		RPM 46		NO-A-E		O-BHA
Casin Summa	_		Size	Set	At		Туре		V	Veight		Gra	de			Commen	ts	
Litholog (curre		F	Ss	Cht	Silt	Siltst	Cly	Clys	st	Sh	Ls	st	Coal	Gvl	$rac{1}{2}$	Tuff	Сеі	ment
Volu	mes		(b	Capacity obls) 078.61	Сара	rillstring acity (bbls 0.51	s)	ılar Vol (bbls) 2065.34		Lag C	Correct (bbls)			ottoms U Strokes 20736	р		ttoms Time 82	-
Maxim Minim	num	Jnits	;* 	Depth	C	2-1	C-2	mmai	-	omatog	grapl C-4		m) C-4	n — –	C-5i		C-5n	_
Avera Backgro	ound		_ _	Trip (max)	_		Connectio	- – >n –		 _	,	* 10,	000 Ur	 nits =	100	— % Gas	In Air	<u> —</u>
				P/U BHA #			8 & drill ah				r' MD	w/ 42'		Jnit Phon	ne: 8°	3228020	055	

Sperry D		21	ON		ı	Mori	ning	Re	po	rt				Re	port :	# 19	
Ar Locati	ell:		Bur Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A				016047 Csg Equ			Curre	r's Dept nt Dept Progres Dat Tim	h: s: e:	3 1 12-Au	287' 893' 06' ug-2015 00 AM
ROF)	Cı	urrent	Avg	24	4 hr Max	Max @	ft			Curr	rent F	umr	& Flo	w Da	ata:	
ROP (f				17.5		53.7	317'			n (gpm))		SPP	(psi)			
					ightarrow		<u></u>		Flow I	n (spm)		_		ons/strol	+	.19	@ 95%
MWD Su	ımmary	<i>,</i> -	<u>C</u>	to	_		T	ools				_	CD opg)	Avg		Min	Max
Mud	Data		Dens	sity (ppg)	Visc	osity	MBT		PV	YI)	API		рН	Chlo	orides	Cor Solids
Depth	Mud T		in	out	-1	c/qt)	(ppb Ec)	сР	(lb/10	Oft ²)	ml/30	min	•	m	ng/l	%
287'	SeaW		8.55								\perp	_					
2 Bit #		II Too	Bit Type	Size 36	TFA 1.117	Hours 9.97	Depth 222'	in / ou 384	_	Footage 162'		WOB 2		RPM 46	111	Cond	dition -IN-NO-BHA
3		II Too		36	1.117		257'	302	•	102		2		40	1-1-1	NO-A-L	-IIV-IVO-BITA
			Size	Set A	۸t		Type		V	Veight	K	Grad	de		Co	ommen	ts
Casir	_									72		•					
Summ	ary										+						
Litholo	av (%)	T	Ss	Cht	Silt	Siltst	Cly	Cly	et .	Sh	Ls	et .	Coal	Gvl	Τ.	Tuff	Cement
(curre			- 03	Ont	Oiit	Ontot	Ciy	Ciy	31	OII	Lo	,	Coai	OVI		Tun	Cement
Volu	ımes			Capacity bbls)		rillstring acity (bbls	Annul	ar Vo bbls)	lume	Lag C	orre			ottoms U Strokes	þ		toms Up Time
VOIC	111103		,	78.61	Сарс	zoity (BBIC		00.07			0010)			<u> </u>			10
							Gas Sur	nma	ry								
							>		Chr	omato	grapl	h (ppn	n)				
		Jnits	\$ *	Depth	C	:-1	C-2		C-3		C-	4i	C-4	n	C-5i		C-5n
Maxin	num					_	-	_									
Minin	num _		_ 4		_			_									
Avera	age		_	X				_									
Backgr (curre	round			Trip (max)			Connectio (max)	n _		_		* 10,0	000 Ur	nits =	100%	6 Gas	In Air
	ecap: Dril			7' MD to 39	3' MD w	// 42" hole	e opener. [Displa	ce well	l with W	BSF.	РООН	& L/D	BHA #3	. Begi	n to R/	U 36"
00			•														
Logging	g Engine	ers:	Andrew f	Bongard/Leig	h Ann Ra	asher R	Report By:	Leigh	Ann R	asher			ι	Jnit Phor	ne: 832	228020	155

Sperry D		RI	ron			Mor	ning	Re	e po	rt				Re	port #	ŧ 20	
Ar Location	ell: ea:		Bur Chuk Ala	ell Oil rger J chi Sea aska Pioneer		Daily C Total C Rig	Job No.: Charges: Charges: Activity: port For:		I w/ 36	9016047 " Condu		С	urre	's Dept nt Dept Progres Dat Tim	h: _ s: _ e: _	13-A	393' 393' 0' ug-2015
ROF	•	С	urrent	Avg	2	4 hr Max	Max	@ ft	П	(Curr	ent Pu	ımp	& Flo	w Da	ta:	
ROP (f	t/hr)									In (gpm) In (spm))		SPP	(psi) ns/strok	(e 4.	10	@ 95%
		_		S 41	+			Taala		iii (Spiii)		_		_	_	•	1
MWD Su	mmary	/ ├		to l				Tools				EC		Avg	- "	/lin	Max
Mud	Data		Den	sity (ppg)	Viso	cosity	MB	Т	PV	' YI	>	API FI	- T	рН	Chlo	rides	Cor Solids
Depth	Mud T		in	out	_	ec/qt)	(ppb	Eq)	сP	(lb/10	Oft ²)	ml/30m	in		m	g/l	%
393'	SeaW		8.55		TFA				<u> </u>		ᆛ	\rightarrow	ᆜ				
	Bit # Bit Type Size 2 Mill Tooth 36 3 Mill Tooth 36						s Dep	oth in /	out 34'	Footage 162'		WOB 2	\vdash	RPM 46	1_1_N		dition -IN-NO-BHA
3				36	1.117 1.117		257'	36)- 1	102				40	1-1-14	O-A-L	-111-110-0117
			Size	Set	At		Туре		工	Weight	K	Grade)		Со	mmer	its
Casir	_									\rightarrow							
Summ	ary								*								
1 :41- 01-0	en (0/)	÷	0	01.1	0.14	0:14	I ou	10		oi I	+				Τ.	- "	
Litholo (curre		-	Ss	Cht	Silt	Siltst	t Cly	C	yst	Sh	Ls	st C	oal	Gvl	+-'	uff	Cement
	ımes		(Capacity bbls)		rillstring acity (bb		nular V (bbls		_	orred obls)			ttoms U Strokes	р	Bo	toms Up Time
			20	95.01				209						21020			
Maxin		Jnits	S*	Depth		2-1	Gas S C-2	umm	-	iromatog	grapl C-	,	C-4	n	C-5i		C-5n
Minin	num		_ (\lambda				<u> </u>		 						 	
Avera Backgr (curre	ound		_	Trip (max)			Connect (max)			<u> </u>	,	* 10,00	00 Ur	 nits =	100%	Gas	In Air
				H w/ 36" c			Report By		h Ann	Rasher				Jnit Phor	e: 832	28020	

Sperry C		RT	ron			Mor	ning	Rep	or	t				Re	port #	21	
Custon	ner:			ell Oil ger J		_	Job No.:	AK-AI	M-090)16047(00_			's Dept nt Dept			393' 393'
Locati	rea: on: Rig:		Ala	chi Sea aska Pioneer		Rig A	harges: Activity: oort For:	Cle	an ou She	ut Hole ell	<u> </u>	24 Ho	our P	Progres Dat Tim	e:		0' ug-2015 00 AM
ROI	P	Cı	urrent	Avg	24	4 hr Max	Max @				urre	ent Pu	ımp	& Flo	w Da	ta:	
ROP (ft/hr)									(gpm) (spm)			SPP	(psi) ns/strok	ce 4.1		891 @ 95%
MWD Su	ımmary	<u></u>	D	Depth to			T	ools		. (ор)		EC (pp	D	Avg		in	Max
Mud	l Data		Dens	sity (ppg)	Visc	osity	MBT		PV	ΥP	T	API FL	. T	рН	Chlori	des	Cor Solids
Depth 393'	Mud T SeaW		in	out	-	c/qt)	(ppb Ed	a)	сР	(lb/100	ft ²) ı	ml/30mi	in		mg	/I	%
393 Bit :			8.55	0:	I TEA	<u> </u>	- D		T		1 47	VOD		DDM		0	.ee.
2		II Too	Bit Type oth	Size 36	1.117	Hours 9.97	222'	in / out 384'	+	ootage 162'	7	VOB 2		RPM 46	1-1-NC		dition -IN-NO-BHA
3	Mi	II Too		36	1.117	10.67	257'	393'	_	136'	7	2		86			E-IN-NO-TD
Casi		,	Size	Set	At		Type		W	eight		Grade)		Cor	nmer	its
Casii Summ	_								-	X							
Litholo (curre		F	Ss	Cht	Silt	Siltst	Cly	Clyst		Sh	Lst	C	oal	Gvl	Т	uff	Cement
Volu	ımes		(l	Capacity obls)		rillstring acity (bb	ls)	lar Volu (bbls)	me	Lag Co	orrect bls)	tion	5	ttoms U Strokes	р	Bot	toms Up Time
			22	254.6		\leftarrow		2253.2						22621			
		Jnits	*	Depth		3-1	Gas Sui C-2	mmary	•	omatog	raph C-4i		C-4ı	n	C-5i		C-5n
Maxir		, into	, 	Берин				. <u> </u>			U 41		U 41	 	0-31	_	
Minin Aver			_	Θ_{λ}	_			<u> </u>								. <u>-</u>	
Backg ı (curr	round		<u> </u>	Trip (max)			Connectio (max)	n			*	10,00	0 Un	nits =	100%	Gas	In Air
24 hr R	ecap: PO	OH w	w/ condu	ctor & P/U	BHA. R	IH w/ BH	IA & wash h	nole clea	an.								

HALL	IBU	RT				More	ning	Pa	n 01	~ 4						# 00	
Sperry D	rilling					VIOII	iiiig	NE	poi					Re	port	# 22	
Ar Locati	ell: ea:		Bur Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A				016047 st Cmt L ell			Curre	y's Dept ent Dept Progres Dat Tim	h: s: e:	15-Aı	393' 393' 0' ug-2015 00 AM
ROF)	Cı	urrent	Avg	24	hr Max	Max @	e ft			Curr	ent F	Pum	p & Flo	w D	ata:	
ROP (f	t/hr)									n (gpm)		SPF	(psi)			
									Flow I	n (spm)	_	_	ons/strol	_	4.19	@ 95%
MWD Su	mmary	<u>/</u>		to			Т	ools					CD	Avg		Min	Max
Mud	Data		Dens	sity (ppg)	Visc	osity	MBT	T	PV	Y	Р	API	FL	рН	Chl	lorides	Cor Solids
Depth	Mud T		in	out	-	c/qt)	(ppb Ec	1)	сP	(lb/10)Oft ²)	ml/30	min	•	r	mg/l	%
393'	SeaW		8.55						_		<u> </u>	_	\dashv				
2 Bit #		II Too	Bit Type	Size 36	1.117	Hours 9.97	Depth 222'	in / οι 384		Footage 162'		WOB	Ų.	RPM	1.1		dition -IN-NO-BHA
3		II Too		36	1.117	10.67	257'	393		136'	4	2		46 86			E-IN-NO-BHA
		Ş	Size	Set /	\t		Туре		V	Veight	T	Gra	de	I	С	Commen	nts
Casir	_		36"							7					C	Conduct	or
Summ	ary																
	(0.1)	_												<u> </u>	_		Ι .
Litholo		\vdash	Ss	Cht	Silt	Siltst	Cly	Clys	st	Sh	Ls	it	Coal	Gvl		Tuff	Cement
(curre	ent)		Llolo	Canacity		illotring	Annu	los Va		1000	`~ ~ ~ ~ ~	ation.	D	ottomol	ln.	Dot	Hama IIn
Volu	ımes			Capacity obls)		rillstring acity (bbls		lar Vol (bbls)	ume	Lag (bbls)	ction		ottoms L Strokes	р		ttoms Up Time
			23	33.17	1	23.73	2	209.4	1					22168			
							Gas Sui	mma	ry								
							>		Chr	omato	grapl	h (ppr	n)				
		Jnits	s *	Depth	С	-1	C-2		C-3		C-4	4i	C-4	4n	C-5i	i	C-5n
Maxin	num _			_	/-	—		-									
Minin	num																
Avera	age			V													
Daalaaa				Trip			Connectio	_			,	* 10 (200 11	nito	100		In Air
Backgr (curre	ent)			Trip (max)		— '	(max)	'' –		_		10,0	J00 U	nits =	100	% Gas	III AII
			/=														
24 hr Re	ecap: PO	OH w	v/ BHA &	L/D. P/U 3	6" csg 8	& RIH. R/U	J to cmt cs	sg. Pre	ssure	test cm	it line	s.					
Logging	r Engine	ers.	Andrew F	Bongard/Leig	ıh Ann Ra	ısher R	Report By:	Leiah	Ann R	asher				Unit Phor	ne: 83	322802(055

Sperry D		RI	ron			Mor	ning	Re	po	rt				Re	port	# 23	
Customo We Are Locatio R	ell:		Bur Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Daily C Total C Rig	Job No.: harges: harges: Activity: oort For:	AK	Wait	on Cmt	00	(Curre	r's Dept nt Dept Progres Dat Tim	h: s: e:	16-A	393' 393' 0' ug-2015 00 AM
ROP (ft		Cı	urrent	Avg	2	4 hr Max	Max	@ ft		In (gpm)		rent P	SPP	& Flo (psi)		Pata:	@ 95%
MWD Sui	mmary	,		Depth to			7	Tools		(Эр)			CD	Avg		Min	Max
Mud Depth 393'	Data Mud T SeaW		Dens in 8.55	sity (ppg) out	_	cosity ec/qt)	MBT (ppb E		PV cP	YF (lb/10		API I		рН	_	lorides mg/l	Cor Solids %
Bit #	Mi	II Too	oth	Size 36 36	1.117 1.117		222' 257'	h in / o 38 39	4' 3'	Footage 162' 136'		WOB 2 2		RPM 46 86	1-1	NO-A-E -NO-A-	dition -IN-NO-BHA E-IN-NO-TD
Casin Summa	_		Size 36"	Set			Туре			Weight		Grad	ie			Commer	
Litholog (curre			Ss	Cht	Silt	Siltst	Cly	Cly	/st	Sh	Ls	st	Coal	Gvl		Tuff	Cement
Volu	mes		(1	Capacity bbls) 333.17	Сар	orillstring acity (bb 123.73	ls)	ular Vo (bbls) 2209.4)	Lag C	orreobls)		(ttoms U Strokes 22168	р	Bot	toms Up Time
Maxim Minim Avera Backgro (curre	num num nge ound	Jnits	s* 	Depth Trip (max)	2=	G-1	C-2 Connection (max)	 	-	romatog	C	4i	C-4	n	C-5i	 	C-5n
24 hr Re				on cmt.	igh Ann R	asher	Report By:	Leigh	n Ann R	asher			L	Jnit Phor	e: 83	3228020	D55

Sperry D		RT	ON		I	Mori	ning	Re	ро	rt				Re	port	t # 24	
Ar Locati	Vell:		Shel Burg Chukch Alas Polar P	ger J chi Sea		Daily Ch Total Ch Rig A			J clear	9016047 in out BH		(Curren	's Dept nt Dept Progres Dat Tim	th: ss: te:	17-Au	375' 375' 0' ug-2015 00 AM
ROP (f		Cı	urrent	Avg	24	4 hr Max	Max @			In (gpm) In (spm)	1)	ent P	SPP (& Flo (psi) ons/strok		Data: 4.19	@ 95%
MWD Su	ummary	上		epth to	\pm		T	ools					CD	Avg	\equiv	Min	Max
Mud Depth 375'	Mud T		Densi in 8.55	out	Visco (sec	c/qt)	MBT (ppb Eq	3)	PV cP			API F ml/30r		рН		nlorides mg/l	Cor Solids %
3 4	Mi	ill Too	oth	Size 36 26	TFA 1.117 1.117	Hours 10.67 10.67	Depth 257' 375'	h in / ou		Footage 136'		WOB 2		RPM 86	1-1		dition E-IN-NO-TD
	_		Size 36"	Set <i>A</i> 375			Туре			Weight		Grad	le			Commen	
		I	Ss	Cht	Silt	Siltst	Cly	Cly	st	Sh	Lst	t	Coal	Gvl		Tuff	Cement
Volu	Mud Data Density (ppg) Depth Mud Type in out 375' SeaWater 8.55 seawater Bit # Bit Type Size 3 Mill Tooth 36 4 Mill Tooth 26 Size Set Casing 36" 37 Summary Summary Summary					rillstring acity (bbls		ılar Vo (bbls)		Lag C	Correc (bbls)			ttoms U Strokes			ttoms Up Time
Minin	Volumes Hole Capacity (bbls) 132.67 Units* Depth Maximum Minimum Average					3-1	Gas Sur	mma	-	aromatoç	graph C-4		n) C-4n	n — –	C-5i	i -	C-5n
Backgı	Average Trip					— — 	Connectio (max)	 n -		 	*	<u> </u>)00 Un		100)% Gas	In Air
вна.				cmt. Decis			mt 36" csg				n cmt	i. R/D o				clean ou	

Sperry D		RI	ron	-		N	/lori	ning	Re	ро	rt				Re	port	t # 25	
Custom			She	ell Oil			Je	ob No.:	AK-	AM-09	9016047	00	Yes	sterda	y's Dept	h:	3	375'
						_ c	_	narges:	7	00	70.00	-			ent Dept			125'
Ar	ea:						otal Ch	narges:					24	Hour	Progres	s:		50'
								ctivity:	<u>D</u>		Section	1			Dat			ug-2015
F	Shell Oil					_	керс	ort For:		Sr	nell				Tim	e:	12:0	00 AM
	Shell Oil Burger J					24	hr Max	Max @					rent		p & Flo	w E		
ROP (f	Burger J Chukchi Sea Chukchi Size Chukchi Sea Chuk					2	58.8	390'			In (gpm))	800		(psi)			073
	Alaska									FIOW	In (spm)		190		ons/strol	ке	4.19	@ 95%
MWD Su	Burger J Chukchi Sea								ools , PWI)				ECD (ppg)	Avg		Min	Max
Mud	Chukchi Sea					Viscos	sity	MBT	П	PV	YI	-	AP	l FL	рН	Ch	lorides	Cor Solids
Depth	Mud T	a: Chukchi Sea n: Alaska g: Polar Pioneer Current					qt)	(ppb Ed	7)	сР	(lb/10	Oft ²)	ml/3	0min	·		mg/l	%
425'	SeaW	Burger J Chukchi Sea Alaska Polar Pioneer																
		Burger J Chukchi Sea					Hours		in / o	ut	Footage	- 4	WOE	3	RPM			dition
		Shell Oil Burger J Chukchi Sea Alaska Polar Pioneer					10.67	257' 375'	393	3'	136'	4	2		86	1-1	1-NO-A-E	E-IN-NO-TD
								Туре	1	Ι \	Weight	T	Gra	ade			Commen	ıts
Casir	ROP							1,700			- Tolgin		<u> </u>	440			Conduct	
	ND Summary										V						00114401	<u>. </u>
Gammi	Mud Data																	
Litholo	ROP Current Avg ROP (ft/hr) 62.1 Depth 425' to 425' Mud Data Density (ppg) epth Mud Type in out 25' SeaWater 8.55 Bit # Bit Type Size Size Set A 36" 375' Casing ummary Size Set A 36" 375' Units* Hole Capacity (bbls) 157.23						Siltst	Cly	Cly	st	Sh	Ls	st	Coal	Gvl	T	Tuff	Cement
(curre	ROP (ft/hr) 62.1 /D Summary Depth 425' to 425' Mud Data Density (ppg) epth Mud Type in out 25' SeaWater 8.55 Bit # Bit Type Size B Mill Tooth 36 I Mill Tooth 26 Casing 36" 375' thology (%) Ss Cht (current) Ss Cht Wolumes Hole Capacity (bbls) 157.23 Units* Depth Maximum Minimum Average Background (current) Trip (max)								X									
Volu	Depth						Istring city (bbl	Annu	lar Vo (bbls)	lume	Lag C	orre			ottoms L Strokes	Jр		toms Up Time
VOIC	Size Set At					Сарас	(55)		55.39)	,	N/A			1578			8 min
			1					Gas Su										
								>		Chi	romatog	grap	h (pp	m)				
	ι	Jnits	S*	Depth		C-	1	C-2		C-3		C-	4i	C-4	4n	C-5	i	C-5n
Maxin	num				9		_		-									
Minin	num				K													
Δver			_	∇					_									
Aven			_						-									
Backgr (curre	round ent)							Connectio (max)	n _		_		* 10	,000 U	nits =	100)% Gas	In Air
24 hr Re	ecap: RIH	l w/ 2	26" clea	n out BH	IA. CI	ean ou	t hole a	nd drill ne	w hole	to 42	5' MD. P	ООН	& L/D	BHA.	Pick up o	drillir	ng BHA	& RIH.
Logging	g Engine	ers:	Andrew	Bongard/I	_eigh /	Ann Ras	her R	Report By:	Leigh	Ann R	Rasher				Unit Phor	ne: 8	3228020)55

Sperry D		RT	ON			Morr	ning	Re	ро	rt				Re	por	t # 26	
We Are Locatio	ell: ea: on:		Burg Chuko Ala	ger J chi Sea aska		Daily Ch Total Ch Rig A			ill 26'	9016047 ' Sectional Sectional Sectional Section Sectio			Curre	r's Dept ent Dept Progres Da Tim	th: ss: te:	1: 8 19-Au	425' 245' 320' ug-2015 00 AM
ROP	•	Cı	urrent	Avg	24	hr Max	Max @					rent	Pump	& Flo	w l	Data:	
ROP (ft	/hr)	8	36.5	60.8		405.7	1093			In (gpm In (spm		1192 284		(psi) ons/stro	ke	4.19	2751 @ 95%
MWD C		T	D	epth			T	ools		(-	,		ECD	Avg		Min	Max
MWD Sui	mmary	<u></u>	425'	to 12	15'			, PWI)			1	(ppg)	8.75		8.09	9.15
	_					osity	MBT		PV		Ρ		I FL	рН		nlorides	Cor Solids
Depth 425'				out	(se	c/qt)	(ppb Ed	1)	сP	(lb/10	00ft ²)	ml/3	0min			mg/l	%
				Size	TFA	Hours	Depth	in / ou	t	Footage	,	WOE	T	RPM	Ħ	Cond	dition
3	ROP (ft/hr) 86.5 60.6					10.67	257'	393		136'		2		86	1-		E-IN-NO-TD
4	Mi				1.117		375'				Ţ			_			
Casin	_			Set			Туре		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Weight		Gra	ade			Commen Conducto	
	_		30	31	ວ					$\overline{}$						Conducti	UI .
Gaining	y																
Litholog	gy (%)	T	Ss	Cht	Silt	Siltst	Cly	Clys	st	Sh	L	st	Coal	Gvl		Tuff	Cement
								X									
Volu	mes					rillstring acity (bbls		lar Vol (bbls)	ume	Lag (Corre (bbls)			ottoms U Strokes	•		toms Up Time
			67	72.54		12.13		660.4			N/A			6626			8 min
	U	Inits	*	Depth	C	3-1	Gas Sui C-2	nma	-	romato		h (pp ·4i	om) C-4	ln	C-5	5i	C-5n
Maxim	num																
			_ <	()				. <u>-</u>									
Backgro (curre	ound						Connectio (max)	n _				* 10	,000 U	nits =	100	0% Gas	In Air
					245' MD		le opener.				y 45'.			lait Dho		33228020	

Sperry C		R1	ON	-		Мо	rni	ng	Re	ро	rt				Re	por	t # 27		
Aı Locati	/ell: rea: ion:		Bur Chuki Ala	ger J chi Sea aska				ges: ges: vity:		J 22" (9016047 Csg Equ			Curre	y's Dept ent Dept Progres Dat Tim	h: s: e:	20-A	245' 512' 267' ug-2015 00 AM	- - -
ROI	P	C	urrent	Avg		24 hr Ma	х	Max @) ft			Cur	rent	Pum	p & Flo	w [Data:		
ROP (ft/hr)			57.1		137.1		1380			In (gpm In (spm				P (psi) ons/stro	(0	4.19	@ 95	0/
		T)onth					ools	1 IOW	ш (эрш)	<u> </u>			=	Min	Max	/0
MWD St	ummary	/			12'				, PWI)				ECD (ppg)	8.82	_	8.56	10.05	
Muc	Data		Dens	sity (ppg)	V	iscosity	П	MBT		PV	Y	Έ	AP	l FL	рН	Ch	nlorides	Cor Soli	ds
Depth 4540		Shell Oil Burger J Chukchi Sea Alaska Polar Pioneer				(sec/qt)	(ppb Ed	7)	сP	(lb/10	00ft ²)	ml/3	0min			mg/l	%	
1512'				0:	+		 		. ,	.		$\overline{\mathbf{H}}$	Attron	\vdash	5511				
3					1.1			Depth 257'	in / o		Footage 136'	9	WOE 2		RPM 86	1-1		dition E-IN-NO-1	ΓD
4					1.1			375'	151			1		土		Ė			
							Ţ	уре		١	Weight		Gra	ade			Commer		
	Well: Area: Chukchi Sea Chukchi Sea Chukchi Sea Alaska Rig: Polar Pioneer ROP Current Avg P (ft/hr) Summary Depth 1245' to 1512 Rud Data Density (ppg) D										\rightarrow					- 1	Conduct	or	
Summ	iary																		
Litholo	nav (%)	T	Ss	Cht	Silt	Silts	t I	Cly	Cly	'st	Sh	1	st	Coal	Gvl	$\overline{}$	Tuff	Cemei	nt.
		F	00	Ont	Oile	Onto		Oly	Oi,	O.	OII			Ooui			Tun	Como	
Volu	ımas	Chukchi Sea				Drillstring			lar Vo (bbls)	lume	Lag (Corre		В	ottoms L Strokes	Jp		toms Up Time	
VOIC	Depth 1245' to 1512'				1	.p a.o.i.) (o	5.0)		(50.0)		`	N/A	<i>,</i>	1	<u> </u>				
							Ga	ıs Su	mma	ry	•								
										Chi	romato	grap	h (pp	m)					
	_	Jnits	*	Depth		C-1		C-2		C-3		C-	-4i	C-4	4n	C-5	i	C-5n	
Maxii	mum			_	/-		_		-										
Minir	num				\ _		_												
Aver	age		_	X	_														
Backg (curr	round		_		_			nnectio	n _				* 10	,000 U	nits =	100	0% Gas	In Air	
(====	,			(*****)				, ,											
														5'. Shoı	rt trip 3 s	tnds	& RIH t	o 1512'	
MD. CB	su & dispi	ace	to 10.5 p	opg WBSI	100	H & L/D B	HA. C	lean ri	g floor	& R/U	J 22" CS	g equ	ııp.						
Lambe	a Ena!	ora:	A 1:	D	:	Devis	D	out D.	1 -1-7	A ==	000				Linit Di	^	222222)EE	
∟oggin	g Engine	ers:	Anarew I	Bongard/Le	ign Ann	ĸasner	кер	ort By:	∟eigh	Ann R	kasner				Unit Phor	ie: 8	5228020	JOO	

Sperry C		RI	ron			Mor	ning	Rep	or	t			Re	port	# 28	
Ar Locati	ell: ea: on:		Bur Chuk Ala	ger J chi Sea aska		Daily Control	Job No.: Charges: Charges: Activity: port For:			0160470 " Csg	00	Cur	ay's Dep rent Dep r Progres Da Tin	th: ss: te:	21-A	512' 512' 0' ug-2015 00 AM
ROI	•	Cı	urrent	Avg	2	4 hr Max	Max @	② ft		C	urre	ent Pun	np & Flo	ow D	ata:	
ROP (1	Depth Seawater 8.55 Mill Tooth 36									gpm) (spm)			PP (psi) allons/stro	ko .	4.19	@ 95%
	Well: Area: Chukchi Sea Alaska Rig: Polar Pioneer Current Avg P(ft/hr) Avg P(ft/hr) Avg P(ft/hr) Avg Polar Pioneer Depth To							ools	IOW II	i (Spiii)	_			\Rightarrow	•	
MWD Su	Well: Area: Chukchi Sea Alaska Rig: Polar Pioneer OP Current Avg Offt/hr) Summary Depth to Units* Bit Type Size Size Set A 36" Size Set A						!	0015				ECC (ppg)	Avç	3	Min	Max
Mud	Well: Area: Chukchi Sea Alaska Rig: Polar Pioneer Current Avg (ft/hr) Depth to Mud Type in out SeaWater 8.55 The Bit Type Size Mill Tooth 36 Mill Tooth 26 Sing 36" 374' Marrent) Mogy (%) Ss Cht Interest Hole Capacity (bbls) 2668.19 Units* Depth Tourier Depth					cosity	MBT	$\overline{}$	PV	YP	· T	API FL	рН	Ch	lorides	Cor Solids
Depth				out	(se	ec/qt)	(ppb Ed	q)	сР	(lb/100	Oft ²)	ml/30min		ı	mg/l	%
									_		+	_				
3 Bit i				1.117	Hours 10.67		n in / out 393'	F	ootage 136'	1	WOB 2	RPM 86	1-1		dition E-IN-NO-TD	
4					1.117		375'	1512	土		±					
							Type		W	eight		Grade			Commer	
	Chukchi Sea									12				(Conduct	or
Summ	ary															
Litholo	av (%)	T	Ss	Cht	Silt	Siltst	Cly	Clys	T	Sh	Lst	Coa	al Gv	īT	Tuff	Cement
				Ont	Oiit	Onto	. Oly	Ciyo		011			21 01		Tan	Comont
Volu	Rig: Polar Pioneer OP Current Avg P (ft/hr) Summary Depth to Units* Depth Size Set A Size Set A Size Set A Summary Set A Size Set					rillstring acity (bb		lar Volu (bbls)	ime	Lag Co	orrect	tion	Bottoms l Strokes	•	Bo	toms Up Time
			26	68.19							N/A					
	ι	Jnits	S*	Depth		2-1	Gas Su C-2	mmar		omatog	raph C-4		-4n	C-5i	İ	C-5n
Maxir	num					_										
	-		_	Θ	_			<u> </u>								
Aver	age															
Backgi (curre	round		_				Connection (max)	on		_	*	10,000	Units =	100	% Gas	In Air
24 hr R	ecap: Coi	nt to	R/U 22"	csg equip	o. RIH w/	22" csg	•									

Sperry D		RI	ron			Mo	rni	ing	Re	po	rt				Re	por	t # 29	
Ar Locati	ell: ea: on:		Bui Chuk Ala	rger J chi Sea aska			Chai Chai Act			ep to	016047 set BOF			Curre	y's Dept ent Dept Progres Dat Tim	h: s: e:	22-Aı	512' 512' 0' ug-2015 00 AM
ROF)	urrent	Avg	1 2	24 hr Ma	х	Max @	e ft			Curr	ent	Pumi	o & Flo	w [Data:		
ROP (f	t/hr)									n (gpm)			SPP	(psi)				
	Mud Data Density (ppg)						_			-low I	n (spm)		_		ons/strol	ке	4.19	@ 95%
MWD Su	D Summary							<u>T</u>	ools					ECD (ppg)	Avg		Min	Max
Mud	ROP Current Avg					cosity	П	MBT	T	PV	Y	>	API	FL	рН	Ch	nlorides	Cor Solids
Depth	Alaska Polar Pioneer					ec/qt)		(ppb Ec	1)	сР	(lb/10	Oft ²)	ml/30	min			mg/l	%
1512'	Area: Chukchi Sea ation: Alaska Rig: Polar Pioneer OP Current Avg O(ft/hr) Summary Depth to Ud Data Density (ppg) Mud Type in out SeaWater 8.55 It # Bit Type Size Mill Tooth 36 Mill Tooth 36 Mill Tooth 26 Size Set A 36" 374 22" 1475 Ilogy (%) Ss Cht Units* Depth ximum Units* Depth ximum Depth Tool Units* Depth Depth Depth												_	\blacksquare				
				1.117	Hou			in / ou	_	Footage	4	WOB	V.	RPM			dition	
4	Well: Area: Chukchi Sea Chukch					7 10.6 7 31.1		257' 375'	393 1512		136' 1119'	10	2 15		86 120			E-IN-NO-TD
		Size	Se	t At	T		Туре		V	Veight	T	Gra	ide	T		Commen	ts	
Casir	Mud Data																Conduct	or
Summ	Depth Mud Type in out										X	Ĩ				Pilo	t Hole C	asing
	Depth Mud Type in out											┸						
Litholo	Mud Data						t	Cly	Cly	st	Šh	Ls	st	Coal	Gvl		Tuff	Cement
(curre	Depth Mud Type in out									4			\perp					
Volu	Mud Data Density (ppg)					orillstring acity (b	_	Annu	lar Vol (bbls)	ume	Lag C	orre	ction		ottoms L Strokes	Jp		toms Up Time
	Casing 36" 374"						2					N/A						
							G	as Sui	nma	ry								
										Chr	omato	grapl	h (pp	m)				
Massin		Jnits	s*	Depth		C-1		C-2		C-3		C-	4i	C-4	ln	C-5	ii	C-5n
Iviaxin	num _				/-	_	_		. –									
Minin	num _		_	Δ	_													
Avera	age			X			_											
Backgr	ound						Co	onnectio	n _				* 10,	000 U	nits =	100)% Gas	In Air
(curre	ent)			(max)				(max)										
24 hr Re	ecap: Co	nt to	RIH w/	22" csg &	set at 1	475' MD.	R/U	cmt equ	ıip & c	mt 22'	" csg. Pı	repar	e to s	et BOF	·.			
Logging	g Engine	ers:	Andrew	Bongard/Le	eigh Ann R	tasher	Rep	oort By:	Leigh	Ann R	asher		_		Unit Phor	ne: 8	3228020)55

Sperry D		RT	ON		ľ	Morr	ning	Re	po	rt				Re	port	# 30	
Are Location	/ell: rea:		Burg Chuko Ala:	ell Oil ger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A			ge seal	9016047 als on KT		(Curre	r's Dept nt Dept Progres Dat Tim	:h: :s: te:	23-Au	512' 512' 0' ug-2015 00 AM
ROF (f		Cı	urrent	Avg	24	l hr Max	Max @			In (gpm) In (spm))	ent F	SPP	(psi) ons/strok)ata:	@ 95%
MWD Su	ımmary	上		epth to			To	ools					CD ppg)	Avg		Min	Max
Mud Depth 1512'	Mud T		Dens in 8.55	sity (ppg) out	Visco (sec	osity c/qt)	MBT (ppb Eq	1)	PV cP	YF (lb/100		API I		рН		lorides mg/l	Cor Solids %
Bit #	Mi	B ill Too ill Too		Size 36 26	TFA 1.117 1.117	Hours 10.67 31.16	Depth 257' 375'	393 1512	i'	Footage 136' 1119'		WOB 2 15		RPM 86 120		-NO-A-E	dition E-IN-NO-TD -E-I-NO-TD
Casin Summ	_	;	Size 36" 22"	Set <i>A</i> 374 1475	1'		Туре		V	Weight		Grad	e et		C	Commen Conducte t Hole Ca	or
Litholo (curre		I	Ss	Cht	Silt	Siltst	Cly	Clys	st	Sh	Ls	t	Coal	Gvl		Tuff	Cement
Volu	ımes		(b	obls)		rillstring acity (bbls		lar Vol (bbls)	ume	`	orrec bbls) N/A	tion		ottoms U Strokes			toms Up Time
Minim	Volumes Hole Capacit (bbls) 2494.3 Units* Depth Maximum Minimum Average				C-		Gas Sur	nmai	•	romatog			n) C-4ı	n — –	C-5i	i — –	C-5n
Backgr (curre	round	_	_ _	Trip (max)			Connection (max)	n		 _	*	<u> </u>)00 Ur	 nits =	1009	— — % Gas	In Air
skid rig equipme	200' off v	well o	center foi	r BOP dep	oloyment nd run ma	t. Assist s	down all te subsea with er to 105' a	th chan	nging t	the chok ith chang	ce sta	b on th	he KT ı	ring. Rig	g up n e KT ı	marine r ring.	riser

Sperry D		2 T	ON			Mor	ning	Re	por	t				Rej	port	t # 31	
Arc Locatio	ea:		Bur Chuko Ala	ell Oil rger J cchi Sea aska Pioneer		Daily Cl Total Cl Rig A	Job No.: harges: harges: Activity: oort For:		AM-090 /ait on w She			C	urren	's Depth nt Depth Progress Date Time	h: s: e:	15 24-Au	512' 512' 0' ug-2015 00 AM
ROP (fr		Cı	urrent	Avg	2	24 hr Max	Max @		Flow In Flow In	n (gpm)	urre	3	SPP (& Floo (psi) ns/strok		Data: 4.19	@ 95%
MWD Su	mmary	上		Depth to			Т	ools				EC (pp		Avg	I	Min	Max
Mud Depth 1512'	Mud T		Dens in 8.55	out		ec/qt)	MBT (ppb Ed	3)	PV cP	YP (lb/100f		API FL		рН		nlorides mg/l	Cor Solids %
3 4	Mi	B ill Toc		Size 36 26	TFA 1.117 1.117	7 10.67	257'	1512 393	3'	ootage 136' 1119'	v O	WOB 2 15		RPM 86 120		1-NO-A-E	dition E-IN-NO-TD -E-I-NO-TD
Casin Summa	_	;	Size 36" 22"	Set 374 147	4'		Туре		W	/eight		Grade	•		(Commen Conducto ot Hole Ca	or
		I	Ss	Cht	Silt	Siltst	Cly	Clys	st !	Sh	Lst	С	Coal	Gvl	\pm	Tuff	Cement
Volu	ımes		(I	(bbls)		Orillstring pacity (bbl		ılar Vol (bbls)	ume	,	orrect bls) N/A	tion		ttoms U _l Strokes	ρ		ttoms Up Time
Minim Avera Backgr						C-1	C-2 Connection	 	•	omatogr	raph C-4i	i — — — — — — — — — — — — — — — — — — —	C-4n	 	C-5i	9% Gas	C-5n
and kill center.	drape ho Attache t	oses o	on KT ri obra hea	ing. Scope ad to tugge	out poder and in	d line tens nstall bea	sioners, tie acons on B0	back t OP stac	the COP	e tension	ner gı	uideline	e and	transpo	ort B	OP to w	rell

Logging Engineers: Andrew Bongard/Leigh Ann Rasher Report By: Leigh Ann Rasher

Unit Phone: 8322802055

	ner: Shell Oil /ell: Burger J					Моі	min	g R	ер	or	t				Rep	ort	# 32		
W Ar Locati	/ell: rea: on:		Bur Chuko Ala	ger J chi Sea aska		Daily (Total (Rig	Job No Charges Charges Activity port Fo	5: 5: /:	Wait		160470 reather		Yesterd Cur 24 Hou	rent	Depth	n: 8: 9:	1 25-A	512' 512' 0' ug-20	
		urrent	Avg	- 2	24 hr Ma	x Ma	ax @ ft				urre	ent Pun			w D	ata:			
ROP (1	Depth to										(gpm) (spm)			PP (ps allons	si) /strok	e 4	.19	@	95%
MWD Su	ımmary	<u>, </u>	D					Тоо	ls				ECD (ppg)	·	Avg	Ŧ	Min	N	lax
Mud	l Data	Dens	sity (ppg)	Vis	cosity	N	IBT	F	Pγ	ΥP	Т	API FL	r	ЭΗ	Chl	orides	Cor	Solids	
Depth			out	(s	ec/qt)	(pp	b Eq)	C	P	(lb/100	oft ²)	ml/30min			n	ng/l		%	
				Sizo	TFA	Hou	re D	epth in	/ out	E/	ootage	- A	WOB	RP	0.04		Con	dition	
3	Well: Area: Ocation: Rig: Polar Pioneer ROP					7 10.6	7 25	7'	393'		136'		2	86			NO-A-	E-IN-N	
4	tomer: Shell Oil Well: Burger J Area: Chukchi Sea Rig: Polar Pioneer COP Current Avg P (ft/hr) Summary Depth to Ud Data Density (ppg) Mud Type in out SeaWater 8.55 Sit # Bit Type Size Mill Tooth 36 Mill Tooth 26 Size Set Sing 36" 37 Mill Tooth 26 Units* Depth Current) Hole Capacity (bbls) 2494.3 Units* Depth Current Units* Depth Current Cology (%) Ss Cht Current Cology (%) Ss Cht Current) Cology (%) Ss Cht Current Cology (%) Ss Cht Current Cology (%) Ss Cht Current Cology (%) Ss Cht Current Cology (%) Ss Cht Current Cology (%) Chromatic Color (bbls) Current Cology (%) Chromatic Color (bbls) Current Cology (%) Chromatic Chromatic Color (bbls) Current Cology (%) Chromatic Chromat					31.10			1512'		1119'	7	15	12	:0		-WT-A		O-TD
Casin	Well: Burger J Area: Chukchi Sea Cation: Alaska Rig: Polar Pioneer ROP Current Avg DP (ft/hr) Depth to Mud Data Density (ppg) th Mud Type in out 2' SeaWater 8.55 Bit # Bit Type Size Mill Tooth 36 Mill Tooth 36 Mill Tooth 26 asing 36" 374 pology (%) Ss Cht (current) Hole Capacity (bbls) 2494.3 Units* Depth laximum Units* Depth laximum Average ackground (current) Trip (max)						Тур	9		We	eight		Grade	+			ommer		
	_										Y						Hole C		
•	· · · · · ·										-							<u> </u>	
Litholo	Well: Area: Chukchi Sea Alaska Rig: Polar Pioneer ROP Current Avg ROP (ft/hr) Depth to Mud Data Density (ppg) Popth Mud Type in out Edit SeaWater 8.55 Bit Bit Type Size Edit Size Seawater Edit Size Se					Silts	t Cl	у	Clyst	- 5	Sh	Lst	Coa	al	Gvl	I	Tuff	Се	ment
(curre	Area:								\checkmark	<u></u>			<u> </u>			<u>_</u>			
Volu	umes	Burger J Chukchi Sea Alaska Polar Pioneer Current Avg Current to Depth to ata Density (ppg) Mud Type in out SeaWater 8.55 Bit Type Size Mill Tooth 36 Mill Tooth 26 Size Set A 36" 374' 22" 1475 (%) Ss Cht Hole Capacity (bbls) 2494.3 Current Avg Depth Trip (max) Proceeding to the control of the c				Orillstring pacity (bl		nnular (bb		ie		orrect bls) I/A	tion		ms Up okes)	Bot	toms Time	
				+34.3		_	Gas	Sumr	narv		1	N/ A							
Maxir	_	Jnits	<u>*</u> _	Depth	2	C-1	C-		Ċ	Chro G-3	matog	raph C-4	(ppm) i C	:-4n		C-5i		C-5n	
Minin	num			Θ	_														_
Aver	age		_																_
Backgi (curr	round	ound Trip					Conne (ma				-	*	10,000	Units	=	1009	% Gas	In Air	-
assista	nce from	ROV	/. Wait o	n weathe	r to depl	oy BOP.	EL. Nordi					ttem	pt to insta				228020		n

Sperry D		RT	ON			Morr	ning	Re	ро	rt				Re	port	t # 33	
Are Locatio	ell:		Burg Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A			ait or	901604 n weathe			Curre	r's Dept ent Dept Progres Dat Tim	h: s: e:	26-Aı	512' 512' 0' ug-2015 00 AM
ROP		Cı	urrent	Avg	24	4 hr Max	Max @		Florin			rent		& Flo	w E	Data:	
ROP (ft	/nr)									In (gpm In (spm				(psi) ons/stro	ке	4.19	@ 95%
MWD Su	mmary	<u>, </u>		epth to	\blacksquare		Т	ools					ECD	Avg	Ŧ	Min	Max
Mud Depth 1512'	Data Mud T SeaW			sity (ppg)	_	osity c/qt)	MBT (ppb Ed	3)	PV cP		'P 00ft ²)	API ml/30	FL	рН		nlorides mg/l	Cor Solids %
Bit #			Bit Type	Size	TFA	Hours	Depth	n in / oı	ut	Footage	9	WOB	\forall	RPM		Con	dition
3 4	Mi	II Too	oth	36	1.117	10.67 31.16	257' 375'	393 151	3'	136' 1119'		2		86 120		1-NO-A-E	E-IN-NO-TD
Casin Summa	g	Ç	Size 36" 22"	Set 374	At 4'		Туре			Weight		Gra	ade		(Commen Conducto t Hole C	ts or
Litholog		T	Ss	Cht	Silt	Siltst	Cly	Cly	st	Sh	L	st	Coal	Gvl	Ŧ	Tuff	Cement
Volu	•		(b	Capacity obls) 494.3		rillstring acity (bbls	Annu s)	lar Vo (bbls)	lume	_	Corre (bbls) N/A			ottoms U Strokes	lp		toms Up Time
Maxim Minim Avera Backgro	num num nge ound	Jnits	;* 	Depth Trip		S-1	C-2	 	•	romato		-4i	C-4	n — —	C-5	 	C-5n
(curre	nt)	ntinu	e to wait	(max)	ner.		(max)										
Logging	l Engine	ers:	Andrew E	3ongard/Lei	igh Ann Ra	asher_ R	Report By:	Leigh	Ann F	Rasher			· · · · · · · · · · · · · · · · · · ·	Jnit Phor	ne: 8	3228020	

Sperry D		RT	ON		ı	Morr	ning	Re	po	rt				Re	port	# 34	
Custome We Are Locatio R	ell: ea:		Burç Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Daily Ch Total Ch Rig Ad			ait on	9016047 weathe			Curre	r's Depti nt Depti Progres Dat Tim	h: s: e:	27-Au	512' 512' 0' ug-2015 00 AM
		Cı	urrent	Avg	24	4 hr Max	Max @			In (gpm In (spm	1)	rent F	SPP	& Flo (psi) ons/strok			@ 95%
MWD Sur	mmary	<u>,</u>		Depth to			To	ools					ECD (ppg)	Avg	\pm	Min	Max
Mud Depth 1512'	Mud T		Dens in 8.55	sity (ppg)	Visco (sec	cosity c/qt)	MBT (ppb Eq	1)	PV cP		'P 00ft ²)	API ml/30	FL	рН		lorides mg/l	Cor Solids %
	f Mi	B ill Toc	Bit Type oth	Size 36 26	TFA 1.117 1.117	Hours 10.67 31.16	Depth 257' 375'	393 1512	3'	Footage 136' 1119'	; ;	WOB 2 15		RPM 86 120		-NO-A-E	dition E-IN-NO-TD -E-I-NO-TD
	_	;	36"	Set <i>3</i>	1'		Туре			Weight		Gra	de		C	Commen Conducto Hole Ca	or
		E	Ss	Cht	Silt	Siltst	Cly	Clys	st	Sh	Ls	st	Coal	Gvl	\pm	Tuff	Cement
Volu	ROP (ft/hr) Mud Data Density (ppg Depth Mud Type in Ou Density Densit					rillstring acity (bbls		lar Vol (bbls)	ume	_	Corre (bbls) N/A			ttoms U Strokes	р		toms Up Time
Minim Avera Backgro	Mill Tooth 36					S-1	C-2 Connection (max)	 	-	romato	grapi C-	4i	C-4	n	C-5i	 	C-5n In Air
				i t on weath		asher R	eport By:	Leigh	Ann F	Rasher				Jnit Phon	ne: 8;	3228020	055

HALL		RT				Morr	ning	Rer	or	t				Re	nort	# 35	
Sperry D	rilling						9							- NO	port	# 00	
Ar Locatio	ell: ea:		Bur Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A		AK-A	M-090 Skid She		00	(Curre	r's Dept nt Dept Progres Dat Tim	h: s: e:	28-A	512' 512' 0' ug-2015 00 AM
ROF	•	Cı	urrent	Avg	24	hr Max	Max @					ent P		& Flo	w D	ata:	
ROP (f	t/hr)									n (gpm) n (spm)			SPP	(psi) ons/strol	(P /	1.19	@ 95%
MWD SII	mmarı	, [<u>_</u>	epth			T	ools	1011 11	г (ортп)		E	CD	Avg	-	Min	Max
		<u></u>		to								(p	pg)				
						osity	MBT		PV	YF	_	API F		рН		orides	Cor Solids
Depth 1512'			8.55	out	(se	c/qt)	(ppb Ed	1)	сP	(lb/10	Oft-)	ml/30r	min		r	ng/l	%
Bit #	<i>‡</i>	В	it Type	Size	TFA	Hours	Depth	in / out	F	ootage	4	WOB	T	RPM		Con	dition
3				36 26	1.117 1.117	10.67 31.16	257' 375'	393' 1512'		136' 1119'	4	2 15		86 120			E-IN-NO-TD -E-I-NO-TD
7	IVII			Set .		31.10	Туре	1312		eight	+	Grad	de	T T		commer	
Casir	Depth Ito Depth Ito Depth Ito Density (ppg) Density (p						.) 0			No.						Conduct	
	_		22"	147	5'										Pilot	Hole C	asing
Litholo	gy (%)		Ss	Cht	Silt	Siltst	Cly	Clyst		Šh	Lst	t (Coal	Gvl		Tuff	Cement
(curre	ent)	<u> </u>	<u> </u>		T -				4			.	_			_	
Volu	mes					rillstring acity (bbls		lar Volu (bbls)	ime	Lag C	orrec obls)	tion		ottoms U Strokes	р		ttoms Up Time
			24	494.3							N/A						
							Gas Sui	nmar	Chro	omatog			-				
Maxin		Jnits	5*	Depth		-1	C-2		C-3		C-4	H	C-4	·n	C-5i		C-5n
Minim	num		_					_		 							
Avera	age		_	X				. <u>-</u>									
Backgr (curre	ound		_	Trip (max)			Connectio (max)	n _		_	*	10,0	00 Ur	nits =	100	% Gas	In Air
24 hr Re	есар: Соі	ntinu	e to wai	t on weath	er. Begi	n to skid	rig.										

Sperry D		RI	TON		ľ	Morr	ning	Re	poi	rt				Re	por	t # 36	
Ar Locatio	/ell: rea:		Burç Chuko Ala	ell Oil rger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A	_			well hea			Curre	y's Dept ent Dept Progres Dat Tim	h: s: e:	15 29-Au	512' 512' 0' ug-2015 00 AM
ROF		Cı	urrent	Avg	24	4 hr Max	Max @					ent F		o & Flo	w [Data:	
ROP (f	t/nr)									ln (gpm) In (spm)				(psi) ons/strok	ке	4.19	@ 95%
MWD Su	ımmary	上		Depth to			T	ools					CD	Avg	$oxed{T}$	Min	Max
Mud	Data		Dens	sity (ppg)	Visco	osity	MBT		PV	YF		API	FL	рН	Ch	nlorides	Cor Solids
Depth 1512'	Mud T	-	in 8.55	out	(sec	c/qt)	(ppb Eq	1)	сP	(lb/10)Oft ²)	ml/30	min		\vdash	mg/l	%
Bit #			Bit Type	Size	TFA	Hours	Depth	n in / ou	ut I	Footage	4	WOB	一	RPM		Cond	dition
3 4	Mi	ill Too ill Too	oth	36 26	1.117	10.67 31.16	257' 375'	393 1512	3'	136' 1119'		2 15		86 120		1-NO-A-E	E-IN-NO-TD -E-I-NO-TD
		Ţ,	Size	Set A	λt		Туре		V	Veight	T	Grad	de		(Commen	ts
Casir	_		36"	374		 				7				+-		Conducto	
Summ	ary		22"	1475)'						土			<u> </u>	Plio	t Hole Ca	asing
Litholo		T	Ss	Cht	Silt	Siltst	Cly	Clys	st	Sh	Ls	st	Coal	Gvl	\blacksquare	Tuff	Cement
(curre	ent)	<u></u>	Hole	Capacity	T Dr	rillstring	Annu	lar Vol	lume	Lag C	`orre	ction	Bo	ottoms U		l _{Bot}	toms Up
Volu	umes		(k	bbls) 494.3		acity (bbls		(bbls)		(I	bbls) N/A			Strokes	·Ρ		Time
		_		194.5			Gas Sur	 mma	ry		I W/F x						
		Jnits	s*	Depth	C	3-1	C-2		Chro	omatoç	grapl C-		n) C-4	₽n	C-5	ii '	C-5n
Maxin	num				1												
Minim			- 4	0)	—												
Avera Backgr	round		_	Trip			Connectio	 n _			:	* 10,0	 000 U	 nits =	100	— —)% Gas	In Air
(curre	ent)			(max)			(max)	-									
	-			her to deplo d required to	-	Splash an	d run BOP	s. Test	chok a	and kill li	ines,	good te	ests. M	loved rig	to we	ell center	
Loggine	g Engine	ers:	Andrew	Bongard/Ju	ustin Car	rter R	Report By:	Justin	Carter	ſ			ı	Unit Phor	ne: 8	3228020)55

Г

Sperry D		RT	ron.		ı	Morr	ning	Re	ро	rt				Re	port	: # 37	
Ar Locatio	ell:		Burç Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A			ping o	9016047 ut slip jo	<u> </u>	Cu	ırren	's Depti nt Depti Progress Date Time	h: s: e:	30-Au	512' 512' 0' ug-2015 00 AM
ROF ROP (f		Cı	urrent	Avg	24	4 hr Max	Max @			In (gpm))		SPP (@ 95%
MWD Su	ımmary	<u>, </u>	D	Depth to			T	ools				EC (ppg		Avg		Min	Max
Mud Depth 1512'	Mud T		Dens in 8.55	out	-	cosity c/qt)	MBT (ppb Eq	3)	PV cP	(lb/10		API FL ml/30mii		рН		lorides mg/l	Cor Solids %
Bit #	#		Bit Type oth	Size 36 26	TFA 1.117 1.117	Hours 10.67 31.16	Depth 257' 375'	n in / oi 393	3'	Footage 136' 1119'		WOB 2 15		RPM 86 120		-NO-A-E	dition E-IN-NO-TD E-I-NO-TD
Casir Summ	ng	3	Size 36" 22"	Set <i>F</i> 374 1475	At '		Туре			Weight		Grade			C	Commen Conducto Hole Ca	ts or
Litholo (curre		$oldsymbol{\mathbb{F}}$	Ss	Cht	Silt	Siltst	Cly	Cly	st	Sh	Lst	: Co	oal	Gvl	\pm	Tuff	Cement
Volu	ımes		(b	Capacity bbls) 494.3		rillstring acity (bbls		ılar Vo (bbls)	lume	(I	Correct bbls) N/A	tion		ttoms U Strokes	р		toms Up Time
Maxin Minin Avera Baçkgr	num num age round	Jnits	;* — -	Depth Trip	C	S-1	C-2 Connectio	 	•	romatoç	graph C-4	ii — — — — — — — — — — — — — — — — — —	C-4 n	n	C-5i	 	C-5n In Air
unit, pre lines sep Halliburt high @ ^	ecap: RO essure tes parately; of ton cemer 1600 psi p	t goo good nt uni press	od on 250 I tests. La iit conduct	(max) d cleaned w) low and blanded out B tt pressure to the pred 134 ps ant.	leeding d SOP on w tests on	down at 10 vell head. BSRs and	sters. Attem 0k. Bleed do Function and CSG. Close	lown to and late ose LBS	zero a ch wellh SRs an	after no s nead con nd test T/	succes nector 250 Ps	s. Troubl r; good la si 5 min l	lesho atch a low w	oot and to and good while con	test cl d test ming (hoke an ts. With up to 15	d kill 00 psi
Logging	g Engine	ers:	Andrew	Bongard/Ju	ustin Car	rter F	Report By:	Justir	ո Carte	r			U	nit Phon	ne: 83	3228020)55

Sperry C		RI	TON			Mor	ning	Re	por	t			Re	port # 3	8
A Locat	/ell: rea:		Burç Chuko Ala	II Oil ger J chi Sea ska Pioneer		Daily Cl Total Cl Rig A			M-090 BOP T She			Curre	y's Dept ent Dept Progres Dat Tim	h: s: e:31	1512' 1512' 0' -Aug-2015 12:00 AM
ROP (С	urrent	Avg	24	4 hr Max	Max @	ı	low In	(gpm)	urrent	SPF	p & Flo P (psi) lons/strok		@ 95%
MWD St	ummar	y		epth to			Т	ools				ECD (ppg)	Avg	Mir	Max
Mud Depth 1512'	Mud 7		Dens in 8.55	out	_	c/qt)	MBT (ppb Ed	d)	PV cP	YP (lb/100		PI FL 30min	рН	Chlorid mg/l	es Cor Solids %
3 4	М	ill To		Size 36 26	TFA 1.117 1.117	Hours 10.67 31.16	Depth 257' 375'	393 1512		ootage 136' 1119'	WO 2 15		RPM 86 120	1-1-NO	Condition -A-E-IN-NO-TD -A-E-I-NO-TD
Casi Sumn	_		36" 22"	Set 37- 147	1'		Туре		W	eight	G	rade		Comr Cond Pilot Hole	uctor
Litholo (curi	ogy (%) ent)	Ŧ	Ss	Cht	Silt	Siltst	Cly	Clys	st :	Sh	Lst	Coal	Gvl	Tuf	f Cement
Vol	umes		(b	Capacity obls)		rillstring acity (bbl		lar Vol (bbls)	ume	(b	orrectior bls) I/A	п В	ottoms U Strokes	lp	Bottoms Up Time
Maxi Minii Avei	mum _ mum _	Jnits	s* 	Depth		G-1	C-2	mmai	-	matog	raph (p C-4i	pm) C-	4n	C-5i	C-5n
Backg (curi	round		_	Trip (max)			Connectio (max)	n _			* 10	0,000 L	Jnits =	100% G	as In Air
	ecap: Co		<u> </u>	Tests.	ustin Ca	rter F	Report By:	Justin	Carter				Unit Phor	ne: 83228	02055

Sperry C		21	TON		ľ	Mor	ning	Rej	oor	t				Re	por	t # 39	
Ar Locati	Vell:		Shell Burg Chukch Alas Polar P	ger J chi Sea ska		Daily Ch Total Ch Rig A			M-090 BOP T		00		Curre	y's Dept ent Dept Progres Dat Tim	th: ss: te:	1: 1-Se	512' 512' 0' ep-2015
ROP (С	Current	Avg	24	4 hr Max	Max @		Elova, Ir	(gpm)		ent I		9 & Flo (psi)	J wc	Data:	
NOF (10111)		二		土		<u> </u>			n (spm)		<u> </u>		ons/strol	ke	4.19	@ 95%
MWD Su	ımmary	正		epth to	\pm		Tr	ools			_		ECD (ppg)	Avg	\mp	Min	Max
Muc Depth	d Data Mud T			ity (ppg)	Visco	osity c/qt)	MBT (ppb Eq	-1	PV cP	YF (lb/100		API ml/30	FL	рН		nlorides mg/l	Cor Solids
1512'	SeaWa			Out	(000	;/qt)	(bbo = 2		- Ci	(10/10	Uit j	Hinoc	IIIII			my/i	/0
Bit :		ill Too	Bit Type	Size 36	TFA 1.117	Hours 10.67		n in / out	_	ootage	1	WOB 2	4	RPM 86	1		dition E-IN-NO-TD
4		ill Too		36 26	1.117	10.67 31.16		393' 1512'		136' 1119'		15	1	86 120			E-IN-NO-TD -E-I-NO-TD
Coci			Size 36"	Set <i>A</i> 374			Type	_	W	/eight	1	Gra	de	$\overline{}$		Commen Conducto	
Casii Summ	_		22"	374 1475		<u> </u>			_	Y				<u>+_</u>		t Hole Ca	
											Į				_		
	ogy (%)	Ŧ	Ss	Cht	Silt	Siltst	Cly	Clys	t	Sh	Ls	şt	Coal	Gvl	丁	Tuff	Cement
(curre	ent)	—	Hole (Capacity	T Dr	rillstring	Annu	lar Volu	ime	Lag C	`orre	ction	T Br	ottoms U	In	Bot	ttoms Up
Volu	umes		(bl	bls) 194.3		acity (bbl		(bbls)	Inic	(b	bbls) N/A			Strokes			Time
		_		54.0			Gas Sur	mmar			W/				_		
Maxir	_	Units	s* _	Depth	C-	-1	C-2	_	Chro	omatog	graph C-4		m) C-4	.n 	C-5 i	i	C-5n
Minin Aver			_ {	O X		<u>-</u> -		. <u> </u>	<u>-</u> -	<u>-</u> 					<u>-</u> 	<u>-</u> _	
Backg ı (curr	round	_	_ 	Trip (max)			Connection (max)	n _	_	- -	,	* 10,0	000 Ur	nits =	100)% Gas	In Air
24 hr R	e cap: Cor	iduct	ting pressu	ure tests of	n BOPs a	and Chok	ke/Kill manif	old.									

Sperry Drill		RT	ON			Morr	ning	Re	por	t				Re	port	# 40	
Customer: Well: Area: Location: Rig:	_		Shel Burg Chukc Ala: Polar F	jer J hi Sea ska		Daily Ch Total Ch Rig A				016047 Vash S		С	urrer	's Dept nt Dept Progres Dat Tim	h: s: e:	2-Se	512' 512' 0' -p-2015 00 AM
ROP ROP (ft/hr	·)	Cu	rrent	Avg	24	hr Max	Max @	F		ı (gpm)			SPP	(psi)			
MWD Sumr	mary	<u>, </u>		epth to	\pm		To	ools	low Ir	(spm)		EC	D	ns/strok Avg	_	1.19 Min	@ 95% Max
	ata Mud Ty SeaWa		_	ty (ppg) out	Visco (sec	osity c/qt)	MBT (ppb Eq)	PV cP	YF (lb/10		API FL	-	рН		orides mg/l	Cor Solids %
Bit #	Mil	_	t Type th	Size 36 26	TFA 1.117 1.117	Hours 10.67 31.16	Depth 257' 375'	in / ou 393'		ootage 136' 1119'		WOB 2 15		RPM 86 120		-NO-A-E	dition E-IN-NO-TD E-I-NO-TD
Casing Summary		S 3	ize 86" 22"	Set 2 374 147	At '	01.10	Туре	1012		eight		Grade	_		C	Commen Conductor Hole Ca	its or
Lithology (current)	(%)	E	Ss	Cht	Silt	Siltst	Cly	Clys	t	Sh	Ls	t C	oal	Gvl	Ŧ	Tuff	Cement
Volume	es		(b	Capacity bls) 94.3		rillstring acity (bbls	Annul	ar Voli (bbls)	ume	,	orrec obls) N/A	ction		ttoms U Strokes	þ		toms Up Time
Maximun Minimum Average	m n	Inits*	, 	Depth		-1	C-2	nmar -	•	omatog	jrapł C-₄	n (ppm) 4i 	C-41	n	C-5i		C-5n
Backgrour (current)	nd		_	Trip (max)			Connection (max)	n _		_	*	* 10,00	0 Un	its =	1009	% Gas	In Air
24 hr Recap					∢up MW		d download			vash su	b.		U	Init Phon	ne: 83	3228020	055

Sperry C		RI	TON			Mor	ning	Re	роі	rt				Re	port	# 41	
Ar Locati	ell:		Shel Burg Chukcl Alas Polar P	jer J hi Sea ska		Daily C Total C Rig	Job No.: harges: harges: Activity: oort For:			016047 p BHA iell	700	C	urre	's Dept nt Dept Progres Dat Tim	h: s: e:	3-Se	512' 512' 0' ep-2015
ROI		С	urrent	Avg	24	hr Max	Max @							& Flo	w D	ata:	
ROP (ft/hr)									n (gpm) n (spm)			SPP Gallo	(psi) ns/strol	ke 4	.19	@ 95%
MWD Su	ımmary	<u></u>		epth to			T	ools				7	CD	Avg		Min	Max
Mud	Data			ty (ppg)	Visc	osity	MBT	T	PV	YI	>	API F		рН	Chlo	orides	Cor Solids
Depth 1512'	Mud T		in 8.55	out	-	c/qt)	(ppb Ed	a)	сР	(lb/10		ml/30m		·		ng/l	%
1512' Bit :	SeaW		Bit Type	Size	TFA	Hours	S Denth	n in / ou		Footage	4	WOB	\top	RPM		Con	dition
3	Mi	ill To	oth	36	1.117	10.67	257'	393		136'		2		86	1-1-	NO-A-I	E-IN-NO-TD
4	Mi	ill To	oth Size	26 Set	1.117 At	31.16	375' Type	1512		1119' Veight	+	15 Grad	e	120 I		-WT-A- ommen	·E-I-NO-TD
Casir	ng		36"	374			ı ype		V	veignt		Jiau				onduct	
Summ	_		22"	147	5'					Y					Pilot	Hole C	asing
		Ļ								, ,				<u> </u>			
Litholo (curre		F	Ss	Cht	Silt	Siltst	Cly	Clys	t	Šh	Lst	t C	Coal	Gvl		Tuff	Cement
	ımes		(b	Capacity bls)		illstring acity (bb		lar Vol (bbls)	ume		bbls)	tion		ttoms U Strokes	Jp		toms Up Time
			24	94.3		-					N/A						
		les ! !	_+	David.		Y	Gas Su	mmaı	Chr	omatoç			-	_	0.5:		0.50
Maxir		Jnits	5°	Depth	C	-1	C-2	_ =	C-3	_	C-4	H 	C-4	n 	C-5i	=	C-5n
Minin Aver			_ <	2				- <u>-</u>									
Backgi (curr	round		_	Trip (max)	_		Connection (max)	on _		_	*	10,00	00 Ur	nits =	100%	% Gas	In Air
24 hr Re	ecap: Wa	ish tr	hu BOPs a	and wellhe	ead. POC	OH with w	vas sub. Pic	k up an	d rack	back dr	ill pipe	e. Begin	n pickin	ng up BH	HA.		

Sperry D		R1	ron	-		Mor	ning	Re	por	t				Rep	oort	t # 42	
Ar Locati	ell:		Bui Chuk Al	ell Oil rger J chi Sea aska Pioneer		Daily Cl Total Cl Rig A			nM-090 rilling A	head	0	(Currer	's Depti nt Depti Progress Date Time	h: s: e:	1 2 4-Se	512' 716' 204' ep-2015
ROF			urrent	Avg	2	4 hr Max	Max @				urr			& Flo	w C		
ROP (f	nt/nr)	1	43.0	105.0		256.0	1694		Flow In			832 199	SPP Gallo	(psi) ns/strok	ie 4	4.19	95% @
MWD Su	ımmary	/	1 1512'	Depth to 171	16'		T Directio	ools onal / P	WD				CD	Avg 10.49	\pm	Min 10.33	Max 10.80
Mud Depth	Data Mud T	vne	Den in	sity (ppg)	_	cosity ec/qt)	MBT (ppb Ec	7)	PV cP	YP (lb/100	ft ²)	API F		рН		lorides mg/l	Cor Solids
1512'	SeaW		10.00			62	N/A	1/	22	24	,	3.7		9.20		0000.00	8.0
Bit 3		ill Too		Size 26 17.5	TFA 1.117 0.755		Depth 375' 1512'	1512	2' 1	ootage 119' 204'		WOB 15 4		RPM 120 100	1-		dition -E-I-NO-TD
		Ç	Size	Set	At		Туре		We	eight		Grac	le		(Commen	ıts
Casir	_		36"	37												Conduct	
Summ	ary		22"	147	75'					1					Pilot	t Hole C	asing
Litholo (curre			Ss	Cht	Silt	Siltst	Cly	Clys	_	Sh	Ls	st (Coal	Gvl	\blacksquare	Tuff	Cement
Volu	ımes		(Capacity bbls) 494.3		rillstring acity (bbl		lar Vol (bbls)	ume	,	rrecols) /A	ction		ttoms U Strokes	p —		ttoms Up Time
						-1	Gas Sui	mmaı	-	matogr	apl	h (ppm	1)				
Maxir		Jnits 79	S*	Depth 1635'		C-1 749	C-2	_	C-3	_	C -4		C-4 r	n 	C-5 i	i 	C-5n
Minin	num _	4	_	1512'		49	0	_	0	_	0		0		0		0
Aver	age	28	`	X	2	006_	0		0	_	0		0		0		0
Backgı (curre	round	23	_	Trip (max)			Connectio (max)	on _		-	,	* 10,0	00 Un	its =	100	% Gas	In Air
							and ream; I volumes. F										

Report By: Justin Carter

Unit Phone: 8322802055

Logging Engineers: <u>Justin Carter / Craig Amos</u>

HALLIBURTON **Morning Report** Report #43 Sperry Drilling **Customer:** Shell Oil Job No.: AK-AM-0901604700 Yesterday's Depth: 1716' 2740' Well: Burger J Daily Charges: **Current Depth:** 1024' Area: Chukchi Sea **Total Charges:** 24 Hour Progress: Rig Activity: **Drilling Ahead** Date: Location: Alaska 5-Sep-2015 Rig: Polar Pioneer Report For: Shell Time: 12:00 AM **Current Pump & Flow Data: ROP** Current 24 hr Max Max @ ft Avg ROP (ft/hr) 276.0 1817 SPP (psi) 40.6 102.0 Flow In (gpm) 896 2567 Gallons/stroke Flow In (spm) 4.19 95% 214 Depth **Tools** <u>Avg</u> **ECD** Min Max MWD Summary 2740' Directional / PWD 1716' to 10.82 10.55 11.07 (ppg) Mud Data API FL Density (ppg) MBT YP Chlorides Cor Solids Viscosity pН Depth Mud Type (sec/qt) (ppb Eq) сΡ (lb/100ft²) ml/30min % out mg/l 1512' WBM 139000.00 10.00 10.00 66 N/A 17 17 3.5 9.50 8.0 Bit # WOB Bit Type Size **TFA** Hours Depth in / out Footage **RPM** Condition Mill Tooth 26 1.117 31.16 375' 1512 15 1-1-WT-A-E-I-NO-TD 1119 120 17.5 0.755 Weight Grade Size Set At Type Comments Casing 36" 374' Conductor **Summary** 1475' Pilot Hole Casing Lithology (%) Clyst Ss Cht Silt Siltst Cly Sh Lst Coal GvI Tuff Cement 100 (current) Lag Correction Hole Capacity Drillstring Annular Volume Bottoms Up Bottoms Up Capacity (bbls) (bbls) (bbls) (bbls) Strokes Time Volumes 45 2494.3 54 954 N/A 9574 **Gas Summary** Chromatograph (ppm) C-3 C-4i Units* **Depth** C-1 C-2 C-4n C-5i C-5n Maximum 100 1999 6787 0 0 0 Minimum 2430' 49 0 0 0 0 0 0 26 1565 0 0 0 0 0 0 **Average** * 10,000 Units = 100% Gas In Air **Background** 15 Trip Connection (max) (max) 24 hr Recap: Drilling 17.5 hole section. Circulate and condition mud while MWD calibrated depth tracking. Drilling/sliding as per Directional Driller. Weight up to 10.3 ppg at 2360'. Continue drilling ahead.

Report By: Justin Carter

Unit Phone: 8322802055

Logging Engineers: Justin Carter / Craig Amos

HALLIBURTON **Morning Report** Report # 44 Sperry Drilling **Customer:** Shell Oil Job No.: AK-AM-0901604700 Yesterday's Depth: 2740' Well: Burger J **Daily Charges: Current Depth:** 2963' 223' Area: Chukchi Sea **Total Charges:** 24 Hour Progress: POOH Location: Alaska Rig Activity: Date: 6-Sep-2015 Polar Pioneer Report For: Shell Time: 12:00 AM Rig: **Current Pump & Flow Data: ROP** Current 24 hr Max Max @ ft Avg ROP (ft/hr) SPP (psi) 52.4 111.0 2833' Flow In (gpm) 0 Flow In (spm) Gallons/stroke 95% 4.19 Depth **Tools** <u>Avg</u> **ECD** Min Max MWD Summary Directional / PWD 2740' to 2963 11.02 10.80 11.25 (ppg) Mud Data API FL Density (ppg) MBT YP Chlorides Cor Solids Viscosity pН Depth Mud Type (sec/qt) (ppb Eq) сΡ (lb/100ft² ml/30min % mg/l 2963' WBM 140000.00 10.30 10.40 88 5.0 15 28 3.4 9.00 14.0 Bit # WOB Bit Type Size **TFA** Hours Depth in / out Footage **RPM** Condition 26 1.117 375' 1512 15 1-1-WT-A-E-I-NO-TD Mill Tooth 31.16 1119 120 17.5 0.755 Weight Grade Size Set At Type Comments Casing 36" 374' Conductor **Summary** 22" 1475' Pilot Hole Casing Lithology (%) Ss Cht Silt Siltst Cly Clyst Sh Lst Coal GvI Tuff Cement 100 (current) Lag Correction Hole Capacity Drillstring Annular Volume Bottoms Up Bottoms Up Capacity (bbls) (bbls) (bbls) (bbls) Strokes Time Volumes 45 2494.3 54 954 N/A 9574 **Gas Summary** Chromatograph (ppm) C-3 Units* Depth C-1 C-2 C-4i C-4n C-5i C-5n Maximum 57 2954 3518 130 83 17 25 10 7 Minimum 2869' 16 0 0 0 0 0 0 33 1864 79 44 11 12 5 2 **Average** Connection * 10,000 Units = 100% Gas In Air **Background** 11 Trip 63 (max) (max) 24 hr Recap: Drilling 17.5 hole section to 2963' with 10.5ppg WBM. Pump 51 bbls hi vis sweep, circulate hole clean and weight up to 10.6 ppg. Short trip to shoe. Function rams. Trip back to bottom. Circulate two bottoms ups. Pump pill. Circulate above pill while trouble shooting Gyro. POOH.

Logging Engineers: Justin Carter / Craig Amos Report By: Justin Carter Unit Phone: 8322802055

Sperry C		RT				Mor	ning	Re	por	t				Re	port	# 45	
Ar Locati	/ell: rea:		Burg Chuko Ala	ll Oil ger J chi Sea ska Pioneer		Daily C Total C Rig /	lob No.: harges: harges: Activity: ort For:	AK-A	POO Sho		00		Curre	r's Dept ent Dept Progres Dat Tim	:h: :s: te:	7-Se	963' 963' 0' ep-2015 00 AM
ROI		Cı	urrent	Avg	24	hr Max	Max @				Curr	ent		& Flo	w D	ata:	
ROP (ft/hr)									n (gpm) n (spm)		0	SPP	(psi) ons/stro	ko /	4.19	0 @ 95%
MWD St	ımmary	,	D	epth to			T Direction	ools		Т(ОРПП)		Ī	ECD	Avg	÷	Min	Max
Mud	l Data		Dens	ity (ppg)	Visc	osity	MBT	Т	PV	YF)	API		pН	Ch	lorides	Cor Solids
Depth	Mud T		in	out	(se	c/qt)	(ppb Ed	q)	сP	(lb/10		ml/30		•	_	mg/l	%
2963'	WBI	M	10.60	10.60	8	8	5.0		18	28	3	3.	.2	9.10	130	00.000	13.0
Bit :		B II Too	Bit Type	Size 26	TFA 1.117	Hours 31.16		1512		ootage 1119'		WOB 15		120	1 -		dition -E-I-NO-TD
5		PDC		17.5	0.755	2.62	1512'	2963		1451'	₽	7		98	-	1-VV 1-A-	-E-I-INO-1D
		5	Size	Set A	\t		Туре		V	/eight	K	Gra	ade		C	Commen	its
Casii	_		36"	374	'					72		>			(Conduct	or
Summ	ary	:	22"	1475	5'										Pilot	Hole C	asing
	(2.1)		_						\vdash					+	_		
Litholo		H	Ss	Cht	Silt	Siltst	Cly	Clys	_	Sh	Ls	st	Coal	Gvl		Tuff	Cement
(curr	ent)		ا مامالا	Consoitu		illotring	Appu	=	-	1000	0 440	otion	I D	ttomal	ln.	Dot	tomo I In
Volu	ımes			Capacity obls)		illstring icity (bb		lar Vol (bbls)	ume	Lag C	orrec obls)			ottoms L Strokes	γþ		toms Up Time
											N/A						
Maxir Minir Aver	mum mum	Jnits	s* — –	Depth		-1	C-2	mma - –	•	omato	grapl C-4		m) C-4	n	C-5i	i — –	C-5n
Backg ı (curr	round		_	Trip (max)			Connection (max)	on _		_	1	* 10,	U 000,	nits =	100	% Gas	In Air
				BHA. Pluç			D tools. Ref				Rig up	o to ru		g. Begin			055

Sperry C		RI	ron			Mor	ning	Re	poi	rt				Re	port	# 46	
operry E	J. IIII.19																
Aı Locati	/ell: rea:		Bur Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Daily C Total C Rig /	Job No.: harges: harges: Activity: oort For:			016047 Casing			Curre	y's Dept ent Dept Progres Dat Tim	:h: :s: te:	8-Se	963' 963' 0' ep-2015 00 AM
ROI	Р	С	urrent	Avg	24	hr Max	Max @					rent		& Flo	w D	Data:	
ROP (ft/hr)									n (gpm) n (spm)		0		(psi) ons/stro	10	4.19	0 @ 95%
					+				riow ii	n (spin)	'	÷			÷	·	1
MWD St	ımmary	<u> </u>		to			Directio	ools nal / F	DWD				ECD (ppg)	Avg		Min	Max
Muc	l Data		Dens	sity (ppg)	Visc	osity	MBT	\neg	PV	YI)	AP	l FL	рН	Ch	lorides	Cor Solids
Depth	Mud T		in	out		c/qt)	(ppb Ed	a)	сP	(lb/10			0min			mg/l	%
2963'	WB		10.60	10.60		88	5.0		18	28			.2	9.10	130	00.000	13.0
Bit :		ill To	Bit Type	Size 26	1.117	Hours 31.16		1512		ootage 1119'		WOE 15		120	1.1		dition -E-I-NO-TD
5		PDC		17.5	0.755	2.62	1512'	2963		1451'		7		98	'-	1-441-74	-L-1-110-11
		Ü	Size	Set /	\t		Туре		V	Veight	K	Gr	ade		C	Commen	its
Casi	ng		36"	374	'										(Conduct	or
Summ	nary		22"	147	5'										Pilot	t Hole C	asing
		<u> </u>					_										
Litholo		_	Ss	Cht	Silt	Siltst	Cly	Clys	_	Šh	Ls	st	Coal	Gvl		Tuff	Cement
(curr	ent)		1		т -			100	-				1 -			T -	
Volu	umes			Capacity obls)		illstring acity (bb		lar Vol (bbls)	ume	Lag C	orre bbls)			ottoms L Strokes	Jp		toms Up Time
7010	u11100							(# 10.10)			N/A						
Maxii		Jnits	S* 	Depth	C	-1	Gas Sui	mmaı	•	omato	grap C-		m) C-4	ln	C-5i	i	C-5n
Minir Aver	age		_	6,	_					_		<u> </u>		 			
Backg (curr	round			Trip (max)			Connectio (max)	on _		_		* 10	,000 U	nits =	100	% Gas	In Air
							uipment. Res							Init Dhe	200	2222000	055
Loggin	g ∟ ngine	ers:	Justin C	arter / Crai	g Amos		Report By:	Justin	Carter	•			ı	Jnit Phor	ne: 83	3228020	155

Sperry Dril		RT	ON			Mor	ning	Rep	oor	t			Re	port	# 47	
Customer Well Area Location Rig	: : :		Bur Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A				0160470 n cemen	<u> </u>	Curr	ay's Deprent Depres Progres Da Tim	th: ss: te:	9-Se	963' 963' 0' p-2015 00 AM
ROP	, l	Cı	urrent	Avg	2	4 hr Max	Max @						p & Flo	w C	Data:	_
ROP (ft/h	r)									gpm) (spm)	0		P (psi) Ilons/stro	ke -	4.19	0 @ 95%
MWD Sum	mary	<u>, </u>	D	Depth to			T Directio	ools	WD		=	ECD	Avg	1	Min	Max
Mud D	ata Mud T	vne	Dens	sity (ppg)	_	cosity ec/qt)	MBT (ppb Ec	T	PV cP	YP (lb/100		API FL I/30min	рН		lorides mg/l	Cor Solids
2963'	WBI	_	10.60	_		88	5.0	1/	18	28		3.2	9.10		0000.00	13.0
Bit #			Bit Type	Size	TFA	Hours		in / out	_	ootage	W		RPM			dition
5		ll Too PDC		26 17.5	1.117 0.755		375' 1512'	1512 2963		1119' 1451'	1:		120 98	1-	1-WT-A	E-I-NO-TD
Casing Summar			Size 36" 22"	Set 37 147	4'		Туре		W	eight		Grade		(Commer Conduct t Hole C	or
Lithology		F	Ss	Cht	Silt	Siltst	Cly	Clys	_	Sh	Lst	Coa	l Gv		Tuff	Cement
Volum				Capacity obls)		rillstring acity (bbl		lar Volu (bbls)			orrectio bls) I/A	in E	Bottoms U Strokes	•		toms Up Time
Maximu Minimur Average	m m	Inits	s* 	Depth		2-1	Gas Sui	mmar	-	omatogr 	raph (p C-4i		-4n 	C-5	i 	C-5n
Backgrou (current)	ınd			Trip (max)			Connectio (max)	n _			* 1	10,000 L	Jnits =	100	% Gas	In Air
24 hr Reca							h from casii			ning strin	g.		Unit Pho	ne: 8	3228020	055

Sperry C		RT	CON		I	Morr	ning	Re	po	rt				Re	port	# 48	
Ar Locati	Vell:		Burç Chukc Ala	ell Oil ger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A		AK-A	P/U	90160470 BHA nell	00 `	(Currer	's Dept nt Dept Progres Dat Tim	th: ss: te:	10-Se	963' 963' 0' ep-2015
ROI	_	Cı	urrent	Avg	24	4 hr Max	Max @		Tlaw.					& Flo	w D	ata:	
ROP (f	TVnr)		<u>_</u>		<u>±</u>		<u> </u>			ln (gpm) In (spm)		0	SPP Gallo	(psi) ns/strok	ke 4	4.19	0 @ 95%
MWD Su	ummary	正		Depth to	\pm		To Directio	ools nal / F	PWD				CD	Avg		Min	Max
Muc	d Data		+	sity (ppg)	-	cosity	MBT	$\overline{}$	PV	YP	_	API		рН	Chl	lorides	Cor Solids
Depth 2963'	Mud T WBI		in 10.70	out 10.65		c/qt) 69	(ppb Eq 6.3)	cP 16	(lb/100 26		ml/30ı 3.4		9.00	_	mg/l 0000.00	% 13.0
Bit			Bit Type	Size	TFA	Hours		n in / ou		Footage		VOB	F	RPM			dition
5 6		PDC PDC		17.5 17.5	0.755	2.62	1512' 2963'	2963	3'	1451' -		7		98	1-2		X-I-NO-TD ew
			Size	Set A			Туре		V	Veight		Grad	de			Commen	
Casii	•		36" 22"	374' 1475		 			 	1	Y			+		Conducto	
Summ	lary		14"	2933		<u> </u>								<u> </u>	Pilot	Casing	
Litholo	ogy (%)	丁	Ss	Cht	Silt	Siltst	Cly	Clys	_	Šh	Lst		Coal	Gvl	Ī	Tuff	Cement
(curre	ent)			2 10		201 1 1 2 2 2	4.0	100			-11	<u></u>	2-				11.
Volu	umes			Capacity bbls)		rillstring acity (bbls		lar Vol (bbls)	ume	(b	orrections) N/A	ion		ttoms U Strokes			toms Up Time
		_					Gas Sur	nma	ry		-						
Maxir	_	Units	s* 	Depth	c	2-1	C-2		Chr C-3	omatog	graph (C-4i		n) C-4r	n	C-5i	i	C-5n
Minin Aver			- 4	ϕ_{χ}		_											
Backg ı (curr	round			Trip (max)			Connection (max)	n _			*	10,0)00 Un	nits =	100	% Gas	In Air
casing v	with 100 bi	obls 1:	12 ppg spa Picking u	with 14" Cas acer/168 bb up drill pipe a	ols 13.5 p	ppg lead/7 k back. Pic	78 bbls 15.6 ck up BHA a	6 ppg ta	ail/10 b	obls 12 pp	pg spac		hen dis	splaced c	cemer	nt with 3	
Loggin	g Engine	ers:	Justin C	Carter / Craig	Amos ر	R	Report By:	Justin	Carte	r		_	U	Jnit Phon	ne: 83	3228020)55

Sperry C		-	ON			Mor	ning	Rep	or	t			Re	port	# 49	
Ai Locati	Vell:		Burg Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Daily Cl Total Cl Rig A			I-090 L/U F. She			Curre	y's Dept ent Dept Progres Dat Tim	:h: :s: te:	10-S	963' 974' 11' ep-2015 00 AM
RO	P	Cı	urrent	Avg	2	4 hr Max	Max @	ft ft		Cı	irrent	Pum	o & Flo	w D	ata:	
ROP ((ft/hr)		-	40.0		52.0	2964			(gpm)	697		(psi)			372
		_							ow in	(spm)	166		ons/stro		.19	@ 95%
MWD St	ummary	/ ├	2963'	to 297	74'			ools Combo				ECD (ppg)	Avg		Min	Max
Muc	d Data		Dens	sity (ppg)	Vis	cosity	MBT		PV	YP	AP	I FL	pН	Chlo	orides	Cor Solids
Depth	Mud T	уре	in	out	_	ec/qt)	(ppb Eq		сР	(lb/100ft		0min	F · · ·	n	ng/l	%
2963'	WBI	M	10.70	10.80		78	6.3		19	30	2	.4	8.20	1350	00.00	13.0
Bit			Bit Type	Size	TFA	Hours		in / out		ootage	WOE		RPM			dition
5 6		PDC PDC		17.5 12.25	0.755	2.62	1512' 2963'	2963'	+ '	1451'	7		98	1-2		X-I-NO-TD ew
		(Size	Set	At		Туре	T	W	eight	Gra	ade	T	С	ommer	ts
Casi	ng		36"	37	4'									С	onduct	or
Summ	nary		22"	147	' 5'									Pilot	Hole C	asing
			14"	293	33'				$\overline{}$	_					Casing	
Litholo	ogy (%)		Ss	Cht	Silt	Siltst	Cly	Clyst		Sh	Lst	Coal	Gvl		Tuff	Cement
(curr	rent)	<u></u>						100	1_					Ш,		
Mala				Capacity		rillstring		ar Volun	ne	Lag Cor			ottoms L	Jp		toms Up
VOIL	umes		`	obls) 95.81	Сар	acity (bbl 45.56		(bbls) -01.68	+	(bb N/		+	Strokes 4030			Time 30
			43	33.01		43.30	Gas Sur			IN/			4030			30
							Gas Sui	-		matogra	nh (nn	m)				
		Jnits	*	Depth		C-1	C-2		C1110 C-3	_	іріі (рр С-4і	'''') C-4	ln	C-5i		C-5n
		,,,,,,	,	Dopui			0 2	`			∪ ¬.	•				0 511
Maxii	_									_				.		
	mum			\prec	<i>)</i> =					_						
Maxii Minir	mum			o o						<u> </u>						
	mum		 _	6		_				- – - –					 	
Minir	mum mum rage			Trip	<u></u>		Connection	n		- — - —	* 10	 U 000.			 % Gas	In Air
Minir	mum mum rage ground		 _ •	Trip (max)			Connection (max)	n		 	* 10	, ,000 U				In Air
Minir Aver Backg (curr	mum mum rage ground rent)	k iin	BHA and	(max)	ole test t	ools Trin	(max)		ıldn't	chear see				100%		
Minir Aver Backg (curr	mum rage ground rent)			(max)				embly, cou			al assem	nbly, and	d trip out.	100%	oleshoo	
Minir Aver Backg (curr	mum rage ground rent)			(max)			(max)	embly, cou			al assem	nbly, and	d trip out.	100%	oleshoo	
Minir Aver Backg (curr	mum rage ground rent)			(max)			(max)	embly, cou			al assem	nbly, and	d trip out.	100%	oleshoo	
Minir Aver Backg (curr	mum rage ground rent)			(max)			(max)	embly, cou			al assem	nbly, and	d trip out.	100%	oleshoo	
Minir Aver Backg (curr	mum rage ground rent)			(max)			(max)	embly, cou			al assem	nbly, and	d trip out.	100%	oleshoo	
Minir Aver Backg (curr	mum rage ground rent)			(max)			(max)	embly, cou			al assem	nbly, and	d trip out.	100%	oleshoo	
Minir Aver Backg (curr	mum rage ground rent)			(max)			(max)	embly, cou			al assem	nbly, and	d trip out.	100%	oleshoo	
Minir Aver Backg (curr	mum rage ground rent)			(max)			(max)	embly, cou			al assem	nbly, and	d trip out.	100%	oleshoo	
Minir Aver Backg (curr	mum rage ground rent)			(max)			(max)	embly, cou			al assem	nbly, and	d trip out.	100%	oleshoo	

HALLIBURTON **Morning Report** Report #50 Sperry Drilling Shell Oil **Customer:** Job No.: AK-AM-0901604700 Yesterday's Depth: 2974' 4412' Well: Burger J **Daily Charges: Current Depth:** 1438' Area: Chukchi Sea **Total Charges:** 24 Hour Progress: Rig Activity: **Drilling Ahead** Date: Location: Alaska 10-Sep-2015 Rig: Polar Pioneer Report For: Shell Time: 12:00 AM **Current Pump & Flow Data: ROP** Current 24 hr Max Max @ ft Avg ROP (ft/hr) 184.2 3624 SPP (psi) 126.1 96.6 Flow In (gpm) 835 3287 Gallons/stroke Flow In (spm) 4.19 95% 200 Depth **Tools** Avg Min Max **ECD** MWD Summary 2974' to 4412' **Quad Combo** 11.53 11.10 11.86 (ppg) Mud Data Density (ppg) **API FL** MBT YP Chlorides Cor Solids Viscosity pН Depth Mud Type out (sec/qt) (ppb Eq) сΡ (lb/100ft²) ml/30min % mg/l 2974' WBM 133000.00 10.60 10.60 73 6.3 18 32 3.5 9.30 13.0 Bit # WOB RPM Bit Type Size **TFA** Hours Depth in / out Footage Condition 5 17.5 0.755 2.62 1512' 2963 1451 1-2-BT-N-X-I-NO-TD PDC 10 100 Туре Weight Grade Size Set At Comments Conductor Casing 36" 374' **Summary** 22" 1475 Pilot Hole Casing 14" 2933' Casing Clyst Lithology (%) Ss Cht Silt Siltst Cly Sh Lst Coal GvI Tuff Cement 100 (current) Lag Correction Hole Capacity Drillstring Annular Volume Bottoms Up Bottoms Up Capacity (bbls) Strokes (bbls) (bbls) (bbls) Time Volumes 709 71.61 580.67 N/A 5817 30 **Gas Summary** Chromatograph (ppm) C-3 Units* Depth C-1 C-2 C-4i C-4n C-5i C-5n Maximum 387 3387 15271 1125 1101 179 355 166 171 Minimum 4398' 16 0 0 0 0 0 0 69 2426 123 99 18 40 19 18 **Average** 10,000 Units = 100% Gas In Air **Background** 40 Trip Connection (max) (max) 24 hr Recap: Drill ahead. Current depth 4412'. Pump 50 bbl sweeps as directed.

Logging Engineers: Justin Carter / Craig Amos Report By: Justin Carter Unit Phone: 8322802055

HALLIBURTON **Morning Report** Report #51 Sperry Drilling **Customer:** Shell Oil Job No.: AK-AM-0901604700 Yesterday's Depth: 4412' 5423' Well: Burger J **Daily Charges: Current Depth: Total Charges:** Area: Chukchi Sea 24 Hour Progress: 1011' Rig Activity: Date: Location: Alaska Wash/Ream Hole 14-Sep-2015 Rig: Polar Pioneer Report For: Shell Time: 12:00 AM **Current Pump & Flow Data: ROP** Current 24 hr Max Max @ ft Avg ROP (ft/hr) 226.6 4734 SPP (psi) 94.6 Flow In (gpm) 41 Gallons/stroke Flow In (spm) 4.19 95% Depth **Tools** <u>Avg</u> **ECD** Min Max MWD Summary 4412' to 5423' **Quad Combo** 11.85 11.63 12.11 (ppg) Mud Data Density (ppg) **API FL** MBT YP Chlorides Cor Solids Viscosity pН Depth Mud Type out (sec/qt) (ppb Eq) сΡ (lb/100ft² ml/30min % mg/l 4225' WBM 121000.00 10.95 11.00 62 8.8 25 39 3.3 8.80 15.0 Bit # WOB RPM Bit Type Size **TFA** Hours Depth in / out Footage Condition 5 17.5 0.755 1512' 2963 1451 1-2-BT-N-X-I-NO-TD PDC 2.62 Weight Grade Size Set At Type Comments Casing 36" 374' Conductor **Summary** 22" 1475 Pilot Hole Casing 14" 2933' Casing Lithology (%) Siltst Ss Cht Silt Cly Clyst Sh Lst Coal GvI Tuff Cement 10% 10% 80% (current) Lag Correction Hole Capacity Drillstring Annular Volume Bottoms Up Bottoms Up Capacity (bbls) (bbls) Strokes Time (bbls) (bbls) Volumes 652.3 580.7 N/A 6123 35 71.6 **Gas Summary** Chromatograph (ppm) C-3 Units* Depth C-1 C-2 C-4i C-4n C-5i C-5n Maximum 142 5423' 9111 1125 1101 179 355 166 171 Minimum 4398' 18 0 0 0 0 0 0 29 1435 75 40 3 12 5 5 **Average** * 10,000 Units = 100% Gas In Air **Background** 30 Trip Connection (max) (max) 24 hr Recap: Drill ahead to TD at 5423' MD. Circulate hole clean and begin pull out of hole. Pump sweeps to clean hole, circulate to monitor ECD's.

Logging Engineers: Justin Carter / Craig Amos Report By: Justin Carter Unit Phone: 8322802055

Sperry C		RT	ron			Mor	ning	Re	роі	rt				Re	port	# 52		
A Locati	/ell: rea:		Bur Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Daily C Total C Rig	Job No.: harges: harges: Activity: port For:		-	016047 - - eam Ho nell			Curre	r's Dept nt Dept Progres Dat Tim	h: s: e:	14-Se	423' 423' 0' ep-2015 00 AM	
ROP (С	urrent	Avg	24	4 hr Max	Max @		Elove I	n (gpm		rent 752	Pump SPP	& Flo	w D		2703	_
NOF (10111)									n (spm		179		ns/strok	ке 4	4.19		5%
MWD St	ummary	<u></u>	4412'	Depth to 542	:3'			ools d Comb	00				ECD (ppg)	Avg 11.70		Min 11.04	Max 12.28	
Muc	Data		Dens	sity (ppg)	Visc	osity	MBT	$\overline{}$	PV	Y	Р	API	FL	рН	Chl	lorides	Cor Sol	lids
Depth 5423'	Mud T WB	•	in 11.40	out 11.45	,	c/qt) 64	(ppb Ed 8.8	<u>a)</u>	cP 25	(lb/10		ml/30 4.		8.80	_	mg/l 000.00	% 18.0	<u> </u>
Bit			Bit Type	Size	TFA	Hours		h in / out		Footage	_	WOB	_	RPM	110		dition	_
5		PDC	С	17.5	0.755	2.62	1512'	2963	3'	1451'		7		98	1-2		X-I-NO-T	.D
6		PDC		12.25	0.994	-	2963'	5423		2460'	4	_11 	<u></u>	97			1.	
Casi	na		Size 36"	Set			Туре		V	Veight		Gra	ae			Commen		
Summ	_		22"	147						$\overline{}$						Hole C		
	,		14"	293	3'											Casing		
Litholo	gy (%)	T	Ss	Cht	Silt	Siltst	Cly	Clys	t	Sh	Ls	st	Coal	Gvl	T	Tuff	Ceme	ent
(curr	rent)	工	10%			10%		80%	ò						工			
Vol	umes			Capacity bbls)		rillstring acity (bb		ılar Volu (bbls)	ıme	Lag (Correction (bbls)	ction		ttoms U Strokes	p		ttoms Up Time)
		_	6	552.3		71.6		580.7			N/A			6991			44	
						X	Gas Sui	mmar	-									
				5 4						omato			-					
Maxii		Jnits 201		Depth CIRC		:-1 284	C-2 386		C-3 113		C-4		C-4 ı 21		C-5i		C-5n 0	
Minir		0				,												
Aver		22	_ <		_													
Backg		5	_	Trip			Connectio	- <u> </u>		_		* 10	000 Ur	 nits =	1000		In Air	
(curr				(max)			(max)	"'		_		10,	000 011	iit5 –	100	70 Gas	шдш	
24 hr R	ecap: Pui	mp c	out of hole	e, circulated	d and pur	np sweer	ps to clean,	and mo	nitor E	ECD's. S	Short t	rip to s	shoe, cir	rculate, c	condit	tion muc	d. Trip	
							iting, pumpir										· •	
				_			_											
Loggin	g Engine	ers:	Justin C	Carter / Crai	ig Amos		Report By:	Justin	Carter			_	U	Jnit Phon	ie: 83	3228020)55	

Sperry C		R	ron	-		Мо	rnin	g	Rej	901	rt				Rej	oort	# 53	
Aı Locati	/ell: rea:		Bu Chuk Al	ell Oil rger J chi Sea aska Pioneer		Total (Rig	Job No Charge Charge Activit port Fo	s: s: y:	AK-A			00		Curre	y's Dept ent Dept Progres Dat Tim	h: s: e:	15-Se	423' 423' 0' ep-2015
ROI	P	С	urrent	Avg	T :	24 hr Ma	x N	lax @	e ft			Curr	ent l	Pumi	o & Flo	w [Data:	
ROP (ft/hr)		-								n (gpm)	_	0		(psi)		1.10	@ 050/
		_						_		·IOW I	n (spm)		0		ons/strol	\Rightarrow	4.19	@ 95%
MWD St	ummary	/ -		to Depth	+			10	ools					Ppg)	Avg		Min	Max
Muc	l Data		Den	sity (ppg)	Vis	scosity	l N	MBT	T	PV	YF	-	API		рН	Ch	nlorides	Cor Solids
Depth	7 (11 6)							b Eq	1)	сР	(lb/10	Oft ²)	ml/30			_	mg/l	%
		11.45	5 11.40)	54	<u> </u>	6.9		18	25	5	3.	5	8.70	140	00.000	16.0	
Bit		Bit Type	Size	TFA				in / out	_	Footage		WOB	Ų.	RPM	4		dition	
5 6		PD(17.5 12.25	0.75				2963 5423		1451' 2460'	1	7		98 97	1-	-2-BT-N-	X-I-NO-TD
			Size	Se	t At		Тур	е		V	Veight	T	Gra	de		(Commen	its
Casi	ng		36"	37	74'											(Conduct	or
Summ	nary		22"		75'											Pilo	t Hole C	
		<u> </u>	14"	29	33'												Casing	
	gy (%)	L	Ss	Cht	Silt	Silts		ly	Clys	_	Šh	Ls	t	Coal	Gvl		Tuff	Cement
(curr	ent)		10%			10%	_	\rightarrow	80%					ı			1	
Volu	umes			Capacity (bbls)		Drillstrino pacity (b		_	lar Volu (bbls)	ıme	Lag C	orred obls)	ction		ottoms L Strokes	Jp		toms Up Time
70.0				652.3		71.6	7/		580.7			N/A			6123			35
							Gas	Sur	nmar	У								
										Chr	omatog	rapi	ı (ppr	n)				
		Jnits	s*	Depth		C-1	С	-2		C-3		C-4	4i	C-4	ln .	C-5	i	C-5n
Maxii	mum _				/-				· –									
Minir	num				<u> </u>				. <u> </u>									
Aver	one:																	
Avei	age _				_				_									
Backg (curr	round			Trip (max)			Conn (m	ectio lax)	n _			,	10,	000 U	nits =	100)% Gas	In Air
24 hr R BHA.	ecap: Co	mple	ete rig rep	oairs. Shor	t trip five	stands t	hen bac	k to b	ottom. (Circula	ate botto	ms u	o, max	gas 6	3 units. P	001	l. Lay do	wn
DITA.																		
1	a Fa-:	0.5-	lead to d	O	-: A ··	_	Daniel	D	loca Cont	0 = 271 =	_				Hait Di	^	2000000) <u> </u>
Loggin	y ⊏ngine	ers.	Justin (Carter / Cra	aly Amos	<u> </u>	keport	Бу:	Justin (cartei			_		Unit Phor	ie: 8	3228020	ນວວ

Sperry D		Rī	ron			Mor	ning	Rep	or	t				Rep	oort	# 54	
Custom We Are Locatio R	ell: ea:		Ala	ger J :hi Sea		Daily Ch Total Ch Rig A			M-090 - - Run L She		<u>0</u>	С	urre	's Dept nt Dept Progres Dat Tim	h: s: e:	15-S	423' 423' 0' ep-2015 00 AM
ROP (ft		С	urrent	Avg	24	4 hr Max	Max @		low In	Cı ı (gpm)	urre			& Flo	w C	Data:	
NOP (III	/III <i>)</i>				土					(spm)	╧			ns/strol	ke 4	4.19	@ 95%
MWD Su	mmary	/		epth to			T	ools				EC (pp		Avg		Min	Max
Mud	Data		Dens	ity (ppg)	Visc	osity	MBT		PV	YP	Т	API FL	. T	рН	Ch	lorides	Cor Solids
Depth 5423'	Mud T WB		in 11.45	out 11.40	_	c/qt) 54	(ppb Ed 6.9	7)	cP 18	(lb/100f 25	t ²)	ml/30m 3.5	in	8.70		mg/l 0000.00	% 16.0
Bit #			Bit Type	Size	TFA	Hours	_	in / out	_	ootage	4	WOB		RPM	110		dition
5		PDC	2	17.5	0.755	16.84	1512'	2963'		1451'		7		98	1-		X-I-NO-TD
6		PDC	Size	12.25 Set	0.994 At	29.04	2963' Type	5423'		2460' eight	4	11 Grade		97 T		Commer	nte
Casin	a		36"	374			туре			eignt		Orace	,	† 		Conduct	
Summa	_		22"	147	5'										Pilot	t Hole C	asing
		L	14"	293	3'	<u> </u>		, "	$\overline{}$				_		_	Casing	<u> </u>
Litholo	gy (%)		Ss	Cht	Silt	Siltst	Cly	Clyst	_	Šh	Lst	t C	oal	Gvl		Tuff	Cement
(curre	nt)		10%		_	10%	42	80%				. 1	_			1 _	
Volu	mes			Capacity obls)	Capa	rillstring acity (bbl		lar Volu (bbls)	me	Lag Co (bb	ols)	tion		ttoms U Strokes	lp		ttoms Up Time
			60	37.1		215.1		422		N.	/A			3069			
							Gas Sui	mmary		matogr	anh	(nnm)					
	ι	Jnits	s*	Depth	C	:-1	C-2		C-3	matogi	арп С-4		C-4	n	C-5	i	C-5n
Maxim	ium _			$\overline{}$				- –									
Minim	um _		_ 4														
Avera	ige		_	X				. <u> </u>									
Backgro (curre				Trip (max)			Connectio (max)	n		_	*	10,00	0 Un	nits =	100	% Gas	In Air
			Justin Ca			Rig up to	run heavy w	veight dr	ill pipe	and curr	rently	y runnin		avy weigh			

HALLIBU	JF	RTON	_		Mori	ning	Rar	10 r	4				Day		4 E E		
Sperry Drilling	9				VIOII	iiiig	izel	,					Re	port	# 55		
Customer: Well: Area: Location: Rig:		Bu Chul A	nell Oil Irger J Kchi Sea laska Pioneer		Daily Ch Total Ch Rig A		AK-A	M-090 - - Cem She		00		Curre	r's Dept ent Dept Progres Dat Tim	:h: :s: te:	15-S	423' 423' 0' ep-2015	- - - -
ROP	T	Current	Avg	24	hr Max	Max @	0 ft			Curr	ent		& Flo	w D	ata:		
ROP (ft/hr)									n (gpm)		0	SPP	(psi) ons/stro	leo d	1.40	@ 01	- 0/
		Т	<u> </u>	+				IOW II	n (spm)		0		T .	+	1.19		5%
MWD Summa	ry		Depth to				ools					ECD (ppg)	Avg		Min	Max	
Mud Data	1	Der	nsity (ppg)	Visc	osity	MBT	Т	PV	YF)	API	FL	рН	Chl	orides	Cor Sol	lids
Depth Muc			out		c/qt)	(ppb Ec	7)	cР	(lb/10		ml/30		0.00	_	ng/l	%	
	/BM				57	7.5		24	32	_	3.	$\overline{}$	9.00	130	000.00	16.0	_
Bit #	P	Bit Type DC	Size 17.5	TFA 0.755	Hours 16.84	Depth 1512'	n in / out 2963'	_	ootage 1451'		WOB 7	-	RPM 98	1-1		dition X-I-NO-T	<u>—</u>
5		DC	12.25	0.994	29.04	2963'	5423'		2460'		11		97			X-I-WT-T	
	T	Size	Set A	∖t		Type		W	/eight	K	Gra	de		С	ommer	its	
Casing	-	36"	374	'					72				-	C	conduct	or	
Summary	H	22"	1475							-			-	Pilot	Hole C		
		14"	2933								_		+	_	Casing		
Lithology (%	6)	Ss	Cht	Silt	Siltst	Cly	Clyst	_	Sh	Ls	st	Coal	Gvl		Tuff	Ceme	nt
(current)		10%	0	I 5	10%	1000	80%		J = 0					<u> </u>	D		
Volumes			e Capacity (bbls)		illstring icity (bbls		lar Volu (bbls)	ime	Lag C	orred obls)	ction		ottoms L Strokes	Jp		toms Up Time)
		-	127.89		39.96		387.9			N/A			5034				
Maximum Minimum	_	nits* 47	Depth CIRC		-1 271	C-2 156	mmary		omatoç	grapl C-4 0	4i	m) C-4 0	in	C-5i		C-5n 0	
Average Background (current)		10	Trip (max)			Connectio (max)	- <u> </u>		_	,	* 10,	 000 Ui	 nits =	100	 % Gas	In Air	
24 hr Recap: (Comp	plete runni	ng liner asse	mbly in t	nole and p	oump ceme	ent.										

Sperry D		Rī	ron		ı	Mori	ning	Rep	or	t			Re	port	t # 56	
Custom We Are Locatio R	ell: ea:		Shel Burg Chukc Alas Polar P	ger J hi Sea ska		Daily Ch Total Ch Rig A			И-090 - - - She		<u>) </u>	Yesterda Curro 24 Hour	ent Dept	:h: :s: te:	18-S	6423' 6423' 0' ep-2015
ROP (ft		С	urrent	Avg	24	hr Max	Max @		ow In	Cı (gpm)		ent Pum	p & Flo	w C	Data:	
MWD C	,		D(epth	+					(spm)			ons/stro	÷	4.19 Min	@ 95% Max
MWD Su		<u></u>		to								(ppg)		_	•	
Mud Depth	Data Mud T	vne	Densi in	ity (ppg) out	Visco	osity c/qt)	MBT (ppb Eq	<i>")</i>	PV cP	YP (lb/100ft	.2\	API FL ml/30min	pН		lorides mg/l	Cor Solids %
5423'	WB		11.55	11.55		65	7.5	1)	20	31	.)	3.7	9.00	_	3000.00	16.0
Bit #		Ε	Bit Type	Size	TFA	Hours	Depth	n in / out	Fo	ootage	V	VOB	RPM		Con	dition
4 5		PD(17.5 12.25	0.755 0.994	16.84 29.04	1512' 2963'	2963' 5423'		1451' 2460'		7	98 97			-X-I-NO-TD -X-I-WT-TD
Ü			Size	Set .		20.04	Type	0420		eight	É	Grade	1		Commer	
Casin	q		22"	147			. 7 -		_						t Hole C	
Summa	_		14"	293	3'										Casing	l
		9	9 5/8"	293	3'				$\overline{}$						Liner	
Litholog	ју (%)		Ss	Cht	Silt	Siltst	Cly	Clyst		Sh	Lst	Coal	Gvl		Tuff	Cement
(curre	nt)	<u></u>	10%		_	10%		80%	4			<u> </u>			1	
Volu	mes		(b	Capacity bls)	Capa	rillstring acity (bbls	s) (lar Volui (bbls)	me	Lag Coi (bb	ls)	ion B	Strokes	Jp		ttoms Up Time
			42	7.89		39.96	$\overline{}$	387.9		N/	Α		5034			
							Gas Sur	-		mataar	anh	(nnm)				
Maxim		Jnits	s* 	Depth	C	-1	C-2		Chro	matogra	apn C-4i		4n 	C-5	i 	C-5n
Minim	um _		- 4)												
Avera	ge _		_ `													
Backgro (curre		0	_	Trip (max)			Connectio (max)	n		-	*	10,000 U	Inits =	100	% Gas	In Air
24 hr Re	cap: Rig	up t	to test BOF	and testi	ng BOP a	at report t	ime.									

HALLI	BUI	RT	ON			Mar		D.		.4								
Sperry Dr	illing					VIOI	ning	ĸe	poi					Re	port	# 57		
Custome Wel Area Location Rig	II: a: n:		Bur Chuko Ala	ell Oil ger J chi Sea aska Pioneer		Daily Cl Total Cl Rig A			AM-090 - - Trip In Sh		<u>'00</u>		Curre	r's Dept nt Dept Progres Dat Tim	:h: :s: te:	19-Se	423' 423' 0' ep-2015 00 AM	
ROP		Cı	urrent	Avg	24	hr Max	Max @) ft			Curr	rent	Pump	& Flo	w D	ata:		
ROP (ft/l	hr)									n (gpm		0	SPP			4.40		5 07
		_			+				FIOW II	n (spm))	0		ons/stro	ke 4	1.19	ī	5%
MWD Sun	nmary	<u></u>		epth to				ools					ECD (ppg)	Avg		Min	Max	
Mud [Data		Dens	sity (ppg)	Visc	osity	MBT	Т	PV	Y	Р	AP	l FL	рН	Ch	orides	Cor So	lids
Depth	Mud T		in	out		c/qt)	(ppb Ec	7)	сP	(lb/10			0min		_	mg/l	%	
5423'	WBI		11.55	11.55		55	7.5		20	3	_		.7	9.00	133	000.00	16.0)
8it #		B PDC	it Type	Size 17.5	TFA 0.755	Hours 16.84	Depth 1512'	in / ou 2963	_	ootage 1451'		WOE 7	3	RPM 98	1		dition X-I-NO-T	
5		PDC		12.25	0.733	29.04	2963'	5423		2460'	1	11		97			X-I-WT-T	
		(Size	Set A	۸t		Type		V	/eight	T	Gra	ade		C	ommer	its	
Casing	g		22"	1475	5'					70					Pilot	Hole C	asing	
Summa	ry		14"	2933												Casing		
		9	5/8"	2933												Liner		
Litholog	y (%)	<u> </u>	Ss	Cht	Silt	Siltst	Cly	Clys	_	Šh	Ls	st	Coal	Gvl		Tuff	Ceme	nt
(current	t)	<u> </u>	10%			10%		80%										_
Volun	moe			Capacity obls)		illstring acity (bbl		lar Vol (bbls)	ume	Lag C	corre bbls)			ottoms L Strokes	Jp		toms Up Time)
Volum	1103			27.89		39.96		387.9			N/A			5034			11110	
Maximu Minimu Averaç	um <u> </u>	Inits	.* 	Depth	C	-1	Gas Sur	mma 	-	omato	grapi C-		m) C-4 ——	n	C-5i		C-5n	
Backgro (curren	und	0	_	Trip (max)			Connectio (max)	n _		_	,	* 10	,000 Ur	nits =	100	% Gas	In Air	
				esting. Pres			nd kill. Pick						l	Jnit Phor	ne: 83	3228020	055	

HALLIBURTON **Morning Report** Report #58 Sperry Drilling **Customer:** Shell Oil Job No.: AK-AM-0901604700 Yesterday's Depth: 5423' Well: Burger J Daily Charges: **Current Depth:** 5859' 436' Area: Chukchi Sea **Total Charges:** 24 Hour Progress: Rig Activity: Date: Location: Alaska **Drilling Ahead** 20-Sep-2015 Rig: Polar Pioneer Report For: Shell Time: 12:00 AM **Current Pump & Flow Data: ROP** Current 24 hr Max Max @ ft Avg ROP (ft/hr) 119.0 5574' SPP (psi) 52.0 46.9 Flow In (gpm) 600 3960 Gallons/stroke Flow In (spm) 4.19 95% 145 Depth **Tools** Avg **ECD** Min Max MWD Summary 5423' to 5859 Penta Combo 13.18 12.85 13.76 (ppg) Mud Data **API FL** Density (ppg) MBT YP Chlorides Cor Solids Viscosity pН Depth Mud Type in (sec/qt) (ppb Eq) сΡ (lb/100ft² ml/30min % out mg/l 5423' WBM 130000.00 12.00 12.00 67 7.5 23 33 3.8 9.30 18.0 Bit # WOB RPM Bit Type Size **TFA** Hours Depth in / out Footage Condition 5 12.25 0.994 29.04 2963' 5423 2460' 11 1-1-BT-C-X-I-WT-TD PDC 0.552 5423' Weight Grade Size Set At Type Comments Casing 22" 1475' Pilot Hole Casing 14" 2933' **Summary** Casing 9 5/8" 2933' Liner Clyst Lithology (%) Ss Cht Silt Siltst Cly Sh Lst Coal GvI Tuff Cement 10% 20% 70% (current) Lag Correction Hole Capacity Drillstring Annular Volume Bottoms Up Bottoms Up Capacity (bbls) (bbls) (bbls) (bbls) Strokes Time Volumes 676 94.9 519.3 N/A 5204 36 **Gas Summary** Chromatograph (ppm) C-3 C-4i Units* **Depth** C-1 C-2 C-4n C-5i C-5n Maximum 24 5562' 1701 79 24 0 Minimum 5425' 375 14 0 0 0 0 0 15 1028 51 18 0 0 0 0 **Average** * 10,000 Units = 100% Gas In Air **Background** Trip none Connection none (max) (max) 24 hr Recap: Pick up BHA and RIH. Drill cement and 10' of new formation, perform FIT, 907 psi, 15.8 ppg. Drill ahead while diluting mud system heavily for solids control.

Logging Engineers: <u>Justin Carter / Craig Amos</u> Report By: <u>Justin Carter</u> Unit Phone: 8322802055

HALLIBURTON **Morning Report** Report #59 Sperry Drilling **Customer:** Shell Oil Job No.: AK-AM-0901604700 Yesterday's Depth: 5859' Well: Burger J **Daily Charges: Current Depth:** 6800' Area: Chukchi Sea **Total Charges:** 24 Hour Progress: 941' Rig Activity: Date: Location: Alaska Circulating 21-Sep-2015 Rig: Polar Pioneer Report For: Shell Time: 12:00 AM **Current Pump & Flow Data: ROP** Current 24 hr Max Max @ ft Avg ROP (ft/hr) 110.0 6472 SPP (psi) 0.0 51.0 Flow In (gpm) 585 3920 Gallons/stroke Flow In (spm) 4.19 95% 140 Depth **Tools** Avg Min Max **ECD** MWD Summary 5859' to 6800' Penta Combo 12.88 12.66 13.24 (ppg) Mud Data API FL Density (ppg) MBT YP Chlorides Cor Solids Viscosity Depth Mud Type in out (sec/qt) (ppb Eq) сΡ (lb/100ft² ml/30min % mg/l 5735' WBM 130000.00 12.00 12.00 55 6.5 23 30 4.7 9.30 21.0 Bit # WOB RPM Bit Type Size **TFA** Hours Depth in / out Footage Condition 5 12.25 0.994 29.04 2963' 5423 2460' 11 1-1-BT-C-X-I-WT-TD PDC 0.552 30.40 5423 Weight Grade Size Set At Type Comments Casing 22" 1475' Pilot Hole Casing 14" 2933' **Summary** Casing 9 5/8" 2933' Liner Lithology (%) Ss Cht Silt Siltst Cly Clyst Sh Lst Coal GvI Tuff Cement 30% 20% 50% (current) Lag Correction Hole Capacity Drillstring Annular Volume Bottoms Up Bottoms Up (bbls) Capacity (bbls) (bbls) Strokes (bbls) Time Volumes 40 673 562 N/A 5626 111 **Gas Summary** Chromatograph (ppm) C-3 Units* **Depth** C-1 C-2 C-4i C-4n C-5i C-5n Maximum 47 5924' 2889 187 99 13 28 0 Minimum 6746' 641 33 20 0 3 0 0 13 812 42 25 1 6 0 0 **Average** * 10,000 Units = 100% Gas In Air **Background** Trip none Connection none (max) (max) 24 hr Recap: Drill to TD @ 6800'. Circulate while recprocating.

Logging Engineers: Justin Carter / Craig Amos Report By: Justin Carter Unit Phone: 8322802055

Sperry D		R1	ron			Mor	ning	Re	po	rt				Re	por	t # 60	
A Locat	Vell: rea:		Bur Chuk Ala	ell Oil rger J chi Sea aska Pioneer		Daily C Total C Rig	Job No.: Charges: Charges: Activity: cort For:	AK	R/U v	9016043 - - wireline hell	700		Curre	y's Deptent Deptent Progres Da Tim	th: ss: te:	6 22-S	800' 800' 0' ep-2015
RO		С	urrent	Avg	2	4 hr Max	Max (@ ft				rent		p & Flo] wc	Data:	
ROP ((ft/hr)									In (gpm In (spm				ons/stro	ke	4.19	@ 95%
MWD St	ummary	<u></u>	[Depth to			7	ools					ECD	Avg	Ŧ	Min	Max
Muc	d Data		Den	sity (ppg)	Viso	cosity	MBT		PV	' Y	P	API		pН	Ch	nlorides	Cor Solids
Depth 6800'	Mud T WB		in 12.00	out 12.00		ec/qt) 58	(ppb E 5.0	q)	cP 35		00ft ²)	ml/30	4	9.00	_	mg/l 1000.00	% 19.5
Bit			Bit Type	Size	TFA	Hour		h in / o		Footage	_	WOB	_	RPM	14		dition
5		PDC	;	12.25	0.994	29.04	2963'	542	23'	2460'		11		97	1-	-1-BT-C-	X-I-WT-TD
6		PDC		8.5	0.552	30.40		680		1377' Weight	4	4 Gra	ndo.	99			ew
Casi	na		Size 22"	Set			Туре			weight		Gla	aue			Commer t Hole C	
Summ	_		14"	293	33'					Y						Casing	
		9	5/8"	293	33'						丄	_			_	Liner	
	ogy (%)		Ss	Cht	Silt	Silts	t Cly	Cly	/st	Šh	Ŀ	st	Coal	Gv		Tuff	Cement
(curr	rent)	<u>_</u>	11-1-	0					4	1		-0	T 5	- 11 1		D.	(l l .
Vol	umes			Capacity bbls)		rillstring acity (bb		ılar Vo (bbls)		Lag (orre(bbls)		B	ottoms L Strokes		Boi	toms Up Time
			7	743.6		N/A		N/A			N/A			N/A			N/A
						-/	Gas Su	mma	ary								
		l ! 4 .	. +	Donth			C-2		Ch C-3	romato		h (pp -4i	m) C-4	1	۰.		C F
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Minir	mum																
			_ (\frown	_												
Aver	rage		_														
Backg (curr	round		_	Trip (max)		19	Connection (max)	on .	non	<u>e</u>		* 10,	,000 U	nits =	100)% Gas	In Air
24 hr R	ecap: Cire	culate	e, recpro	cating pipe	e & POOI	H. Rack I	back BHA.B	egin to	R/U w	vireline. N	Иах д	as obs	served	the past 2	24 hrs	s was 19	u.
Loggin	g Engine	ers:	Leigh A	nn Rashei	· / Craig A	Amos	Report By:	Leigh	n Ann F	Rasher				Unit Pho	ne: 8	3228020)55

HALL	IBU	RI	CON			NA		D.		4							
Sperry D	rilling					worr	ning	ĸe	po	rτ				Re	port	# 61	
Ar Locatio	ell: ea:		Bur Chuko Ala	ell Oil rger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A			rform	9016047 - - - n wirelin			Curre	r's Dept nt Dept Progres Dat Tim	h: s: e:	23-Se	800' 800' 0' ep-2015
ROF	•	C	urrent	Avg	24	4 hr Max	Max @	2 ft			Curr	ent l	umr	& Flo	w D	ata:	
ROP (f										In (gpm)		SPP				
									Flow	In (spm)		Gallo	ons/strok	ke 4	4.19	@ 95%
MWD Su	mmary	<i>,</i> –		Depth to			Т	ools					CD ppg)	Avg		Min	Max
Mud	Data		Den	sity (ppg)	Visc	osity	MBT	Т	PV	Y	Р	API	FL	рН	Ch	lorides	Cor Solids
Depth	Mud T	уре	in	out	_	c/qt)	(ppb Ed	1)	сР	(lb/10	00ft ²)	ml/30)min	•		mg/l	%
6800'	WBI	M	12.00	12.00	6	60	5.0		35	3	4	2.:	2	9.00	140	00.000	19.3
Bit #			Bit Type	Size	TFA	Hours		in / ou	t	Footage	4	WOB		RPM			dition
5 6		PDC PDC		12.25 8.5	0.994 0.552	29.04 30.40	2963' 5423'	5423 6800		2460' 1377'	40	11		97 99			X-I-WT-TD -X-I-NO-TD
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Summ	ai y		5/8"	293												Liner	
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Litholo		H	Ss	Cht	Silt	Siltst	Cly	Clys	st	Sh	Ls	st	Coal	GvI		Tuff	Cement
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Volu	ımes			Capacity bbls)		rillstring acity (bbls		lar Vol (bbls)	ume	Lag C	bbls)	ction		ottoms U Strokes	р	Bot	toms Up Time
VOIC			,	743.6	- Caps	N/A		N/A		\	N/A			N/A			N/A
						$\overline{}$	Gas Su		~							<u>.</u>	
							ous ou.	······	•	romato	aran	h (nnr	m)				
	1	Jnits	*	Depth	C	:-1	C-2		C-3		grapi C		'', C-4	n	C-5i		C-5n
Maxin		Jiiits	,	Deptil			0-2		0-3		0-	Τ.	0-4	11	C-3		C-311
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Minim	num		- 4	\leftarrow	<u> </u>			. –									
Avera	age			X													
	_			_				_									
Backgr (curre	ound ent)		_	Trip (max)			Connectio (max)	n _	none)		* 10,	000 Ur	nits =	100	% Gas	In Air
,	•																
24 hr Re	есар: Со	nt to	R/U wire	eline & RIH	. Perfor	m wirelin	e run #1.										
Logging	g Engine	ers:	Leigh A	nn Rasher	/ Craig A	mos R	Report By:	Leigh	Ann R	Rasher		_	ι	Jnit Phor	ne: 83	3228020)55

Sperry D		RT	ON		ľ	Morr	ning	Re)OI	rt				Re	port	# 62	
Ar Locati	Vell:		Burg Chukc Ala	ell Oil ger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A			-	90160470 - - u wireline		Cı	urrer	's Depti nt Depti Progres Date Time	th: ss: te:	24-Se	800' 800' 0' ep-2015 00 AM
ROF (f		Cı	urrent	Avg	24	4 hr Max	Max @		Flow I	C In (gpm)			ımp SPP (& Flo	w D	ata:	
1,0, ,.	1(111)		<u></u>		丰					In (spm)				ns/strok	ke 4	4.19	@ 95%
MWD Su	ımmary	上		Depth to	\pm		To	ools	<u> </u>			EC (ppg		Avg		Min	Max
	d Data			sity (ppg)	Visco	,	MBT		PV	YP	_	API FL		рН		lorides	Cor Solids
Depth 6800'	Mud T WBI		in 12.10	out 12.10	(sec	c/qt) 57	(ppb Eq 5.0	<u>}</u>	cP 30	(lb/100		ml/30mi 1.8	n	8.80	_	mg/l 000.00	% 19.0
Bit :			Bit Type	Size	TFA	Hours		n in / out	_	Footage		WOB	Ī	RPM			dition
5 6		PDC PDC		12.25 8.5	0.994 0.552	29.04 30.40	2963' 5423'	5423 6800		2460' 1377'		11	_	97 99			X-I-WT-TD -X-I-NO-TD
			Size	Set A	.t		Туре		V	Weight		Grade	,			Commen	
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Summ	lary		9 5/8"	2933							+			\vdash		Liner	
Litholo	ogy (%)	丁	Ss	Cht	Silt	Siltst	Cly	Clys	t	Sh	Lst	С	oal	Gvl	丁	Tuff	Cement
(curre	ent)		<u> </u>		لِب		4.0		4			_	_	Щ			<u></u>
Volu	umes	•		Capacity bbls)		rillstring acity (bbls		lar Volu (bbls)	ıme	Lag Co	orrecti obls)	ion		ttoms U Strokes			ttoms Up Time
		'	7,	43.6		N/A	\rightarrow	N/A		^	N/A		_	N/A			N/A
Maxir Minin Aver	mum mum	Units	;* — -	Depth	C-		Gas Sur	nmar —	•	romatog 	graph C-4i		C-4r	ı — –	C-5i	 	C-5n
Backgi (curre	round	_		Trip (max)			Connection (max)	n _	none	<u>-</u> -	*	10,00	0 Un	 nits =	100%	~ Gas	In Air
core wi	ireline & F		POOH w	v/ wireline to	cool & L/I		MI, SS, GR				I. Perf	orm wi		Jnit Phon			

HALL	IBU	RI	CON			M		D_		4							
Sperry D	rilling					WOL	ning	ĸe	po	rτ				Re	port	t # 63	
Ar Locatio	ell: ea:		Bur Chuko Ala	ell Oil rger J chi Sea aska Pioneer		Daily Ch Total Ch Rig A			l w/ c	901604 - - mt sting nell			Curre	r's Dept nt Dept Progres Dat Tim	h: s: e:	25-Se	800' 800' 0' ep-2015 00 AM
ROF	,	C	urrent	Avg	24	4 hr Max	Max @	2 ft			Curi	rent l	Pumr	& Flo	w E	Data:	
ROP (f	t/hr)									In (gpm	1)		SPP	(psi)			
									Flow	In (spm)			ons/strol	ke -	4.19	@ 95%
MWD Su	mmary	<u> </u>		Depth to			Т	ools					ECD (ppg)	Avg		Min	Max
Mud	Data		Den	sity (ppg)	Visc	osity	MBT	П	PV	Y	Έ	API	FL	рН	Ch	lorides	Cor Solids
Depth	Mud T		in	out		c/qt)	(ppb Ed	1)	сР		00ft ²)	ml/30	_			mg/l	%
6800'	WBI		12.00	12.00	7	79	5.0		33	3	34	2.	_	8.80	140	00.000	18.0
Bit #		PDC	Bit Type	Size 12.25	TFA 0.994	Hours 29.04	Depth 2963'	in / ou 542:		Footage 2460')	WOB 11	\	RPM 97	1		dition X-I-WT-TD
6		PDC		8.5	0.994	30.40	5423'	680		1377	0	4		99			-X-I-NO-TD
		Ç	Size	Set /	Αt		Туре		١ ١	Weight	K	Gra	ide		(Commen	ts
Casir	ng		22"	147											Pilo	t Hole C	asing
Summ	ary		14"	293				_	K							Casing	
	45.13	9	5/8"	540			T		\vdash					<u> </u>		Liner	
Litholo			Ss	Cht	Silt	Siltst	Cly	Cly	st	Sh	Ls	st	Coal	Gvl	-	Tuff	Cement
(curre	ent)		11-1-	0		elli e tedes es	Lance	1 1/4		1		-11			-	D-1	1
Volu	ımes			Capacity bbls)		rillstring acity (bbl:		lar Vo (bbls)	ume	_	Corre (bbls)			ottoms U Strokes	ıp		toms Up Time
			7	743.6		108.26		585.58			N/A			5875			N/A
						V	Gas Su	mma	ry								
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86		Jnits	5 *	Depth	C	-1	C-2		C-3		C-	4i	C-4	n	C-5	i	C-5n
Maxin	num _				/			-					-				
Minim	num		_ 4		<u> </u>												
Avera	age			V													
								-				<u> </u>			400		
Backgr (curre	ound		_	Trip (max)			Connectio (max)	n _	none	<u> </u>		^ 10,	000 Ui	nits =	100	% Gas	In Air
24 hr Re	ecap: Per	form	1 side co	ore wireline	: & POOI	H. L/D co	re tubing,	remov	e and	packag	e cor	es. R/l	J cmt s	stinger &	RIH	-	
Logging	Engine	ers:	Leigh A	nn Rasher	/ Crain A	mos F	Report By:	Leiah	Ann F	Rasher				Jnit Phor	ne: 8:	3228020)55
555	,		- 3		9 . \		J.	- 9.1					•				-

Sperry Di		RT	CON		ı	Mori	ning	Rej	or	t				Re	port	t # 64	
Customer:			Burg Chukc Ala	ell Oil ger J chi Sea aska Pioneer		Job No.: Daily Charges: Total Charges: Rig Activity: Report For:			M-090 - - Circula She		Yesterday's Depth: Current Depth: 24 Hour Progress: Date: Time:				6800' 0' 26-Sep-2015		
ROP Cu			urrent	Avg	24	4 hr Max	Max @	F		(gpm) n (spm)	3	rent Pump & Flow 352 SPP (psi) 84 Gallons/stroke				Data: 872 4.19 @ 95%	
MWD Sur	MWD Summary			epth to			Te	ools	3			EC (pp		Avg		Min	Max
Mud Depth 6800'	Data Mud Ty WBN		Dens in 12.05	out 12.05	(sec	c/qt)	MBT (ppb Eq 10.0	1)	PV cP 35	YF (lb/100	Oft ²) m	API FL ml/30mi 9.0		рН 9.00	ı	mg/l	Cor Solids % 19.5
Bit #		PDC		Size 12.25 8.5	TFA 0.994 0.552	Hours 29.04 30.40	Depth 2963' 5423'	5423 6800	'	ootage 2460' 1377'		/OB 11 4	_	RPM 97 99		-1-BT-C-	dition X-I-WT-TD -X-I-NO-TD
	Casing		Size Set / 22" 147! 14" 293: 0 5/8" 540:		5' 3'	Туре			Weight			Grade				Commen t Hole Ca Casing Liner	asing
	Lithology (%) (current)		Ss	Cht	Silt	Siltst	Cly	Clys	t	Sh	Lst	С	oal	Gvl		Tuff	Cement
Volu	mes		Hole Capacity (bbls) 743.6		Сара	rillstring acity (bbls 108.26	s) (lar Volu (bbls) 585.58	ime	(b	orrections) N/A	on	S	ttoms U Strokes 5875			ttoms Up Time N/A
Uni Maximum Minimum		Jnits	;* — -	Depth		Gas C-1 C		mmary Chro C-3		omatograph (j C-4i				ı — –	C-5i	i — –	C-5n
Average Background (current)			Trip (max)	11	16	Connection (max)	n _	none	 -	*	10,00	0 Un	its =	100)% Gas	In Air	
plug. Pur skate. PC Displace cement, a	mp 16 bb OOH to 60 with rig p and 7 bbl	ol spa 6073' pump ols of s	acer, 48 bt MD & circ os 12.0 pp spacer. D	bl of cemer culate botto pg mud. PC	nt, and 9 oms up. N DOH to 5th th rig pun	bbl of spa M/U cmt h 500' MD & mps, POO	e bottoms up lacer. Displa head for plu & circulate. DH to 4867'	ace with g 2 & pi M/U cm MD and	rig pur ump 16 ht head d circula	mps 12. 6 bbl spa I for plug ate. Max	.0 ppg n acer, 51 g 3 & pu	mud. R. 1 bbl of ump 14	/D cm f cem f bbls d units	nt hose & ent, and of spaces s while c	& L/D d 7 bb cer, 49 circula	orm thead of of space of the of space of the of space of the of t	ad on cer.

HALL	.IBU	RI	LON			Mar	mina	Do:		.4								
Sperry C	Orilling					MIOL	ning	ĸeį	JOI	ľ				Re	port	# 65		
Customer: Well: Area: Location: Rig:			Bur Chuki Ala	ell Oil rger J chi Sea aska Pioneer		Job No.: Daily Charges: Total Charges: Rig Activity: Report For:			AK-AM-0901604700 Set 4th Plug Shell				Yesterday's Depth: Current Depth: 24 Hour Progress: Date: Time:				6800' 6800' 0' 27-Sep-2015 12:00 AM	
RO	P	С	urrent	Avg	2	24 hr Max Max @ ft					Curr	ent F	umr	& Flo	w D)ata:		
ROP (Ť	unone		- -	TIII MUX	· · · · · · · ·		low I	n (gpm		0	SPP			utu.		
									n (spm)				ns/strol	ke 4	e 4.19 @ 95			
MWD Summary			Depth to				Tools			ECD (ppg)		Avg		Min	Max			
Muc	Mud Data Der		Den	sity (ppg)	Visc	cosity	MBT		PV	YI	Р	API	FL	рН	Chl	lorides	Cor Solids	
Depth	Mud T	уре	in	out	(se	ec/qt)	(ppb E	q)	сР	(lb/10	Oft ²)	ml/30	min	•	r	mg/l	%	
6800'	WB	М	12.05	12.05		69	7.5		23	29	9	11.	0	10.60	142	00.000	19.0	
Bit	#	Bit Type		Size	TFA	Hour	Hours Dept		in/out F		Footage 4		WOB			Con	dition	
5		PDC		12.25		29.04		5423		2460'		11				I-1-BT-C-X-I-WT-TD		
6		PDC		8.5	0.552	30.40		6800		1377'		4		99 1-		-1-B T-N-X-I-NO-TD		
		- 1	Size	Set		—	Туре		V	Veight		Gra	de			Commer		
	Casing		22"	147					 				Pilot		lot Hole Casing Casing			
Summ	nary		14"	293						_						Ĭ		
		_	9 5/8"	540)8'								<u> </u>		Liner			
Litholo	ogy (%)		Ss	Cht	Silt	Siltst	Cly	Clys	t	Šh	Ls	st	Coal	Gvl		Tuff	Cement	
(curr	ent)					<u> </u>			4									
						rillstring		ılar Volu	ıme	_				ttoms U	lp	Bot	toms Up	
Volu	umes	,				acity (bb				(bbls)				Strokes		Time		
			743.6			108.26 585.58					N/A			5875		N/A		
						X	Gas Su	mmar	y									
								Chromatograph			h (ppn							
		Units*		Depth		:-1	C-2		C-3		C-4i		4i C-4		C-5i	i	C-5n	
Maxii	mum _																	
Minir	num																	
			_		_			_										
Aver	rage							_										
Background			Trip			Connection	nn .	none	1	,	* 10 (∩∩ Hr	nits =	100	% Gas	In Air		
(current)			(max)			(max)		110110			10,0	300 01		100	70 O ao			
		_									_				_			
	•						7/8" tbg. M/L						_					
Static. 1	OOH & L/	ווט טי	t and bit s	sub. Piess	ure test c	mi piug i	to 1600 psi f	01 15 1111	II. KIF	1 W/ 9 5/	o ca	SUITOITI	briage	piug with	וט כו	α set	olug.	
Loggin	g Engine	ers:	Leigh A	nn Rasher	· / Craig A	\mos	Report By:	Leigh A	<u>\n</u> n R	asher			ι	Jnit Phor	ne: 83	3228020	055	

HALL	IBU	RI				M		D.		-4									
Sperry D	rilling					WOL	ning	ĸe	po	rt				Re	port	# 66			
Customer: Well: Area: Location: Rig:			Shell Oil Burger J Chukchi Sea Alaska Polar Pioneer			Job No.: Daily Charges: Total Charges: Rig Activity: Report For:			AK-AM-0901604700 - - POOH 2 7/8" tbg Shell				Curre	r's Dept Int Dept Progres Dat Tim	h: s: e:	6800' 0' 28-Sep-2015			
ROF	•	C	urrent	Avg	24	4 hr Max	Max @	e ft			Curi	rent Pump & Flow Data:							
	ROP (ft/hr)		,9	 -	- max	Мих		Flow	In (gpm		0	SPP							
			<u> </u>			Flow In (spm)					Gallons/stroke				@ 95%				
MWD Su	mmary	<i>'</i> –		Depth to			Т	ools					ECD (ppg)			Min	Max		
Mud Data		Den	sity (ppg)	Visc	osity	MBT	$\overline{}$	PV	Y	Р	API	FL	рН	Ch	lorides	Cor Solids			
Depth	Mud T	уре	in	out	_	c/qt)	(ppb Ed	1)	сР	(lb/10	00ft ²)	ml/30)min	•		mg/l	%		
6800'	WB	M	12.00	12.00	8	34	5.0		26	2	7	13	0	10.60	123	3000.00	18.0		
Bit #		Bit Type		Size	TFA	Hours		Depth in / out		Footage		WOB		RPM			dition		
5 6		PDC PDC		12.25 8.5	0.994 0.552	29.04 30.40			3'	2460'		11					X-I-WT-TD		
0					•	30.40		6800	_	1377'		Gra	da	99 T	1-1-B T-N-X-				
Coolin			Set A		-	Type		Weight				ae			t Hole C				
<u> </u>		14"	293											FIIO	Casing				
Summary			5/8"	540												Liner			
Lithology (%)		T						01.1		Ch lat		, 1	0 1		T				
		H	Ss	Cht	Silt	Siltst	Cly	Clys	st	Sh	Ls	St	Coal	Gvl		Tuff	Cement		
(curre	iii)		11-1-	0		elli e tudus es	1	1	4	1 6	\					D - ((-		
Volu	ımes			Capacity (bbls) C		rillstring acity (bbl:		Annular Vol (bbls)		lume Lag Correc (bbls)				ttoms Up Strokes		Bottoms Up Time			
VOIG	111103			743.6		108.26		85.58		,	N/A			5875			N/A		
						$\overline{}$	Gas Su							-		<u>I</u>			
)	······	•	romato	aran	h (nnı	m)						
		Jnits	*	* Depth			C-2	C-2 C-3		romatograph C-4				n C-		i	C-5n		
Maxin		Jilits	,	Deptil		C-1				C-3 C-4			41 C-4n			•	C-311		
								_											
Minim	num		- (\leftarrow	\ —			-											
Avera	age			X															
	_		_	_				_											
Background Trip (max)				Connectio (max)	n _	none)		* 10,	1U 000	nits =	100	% Gas	In Air					
•																			
24 hr Re	ecap: Set	4th	plug & P	OOH. P/U 2	7/8" tbg	& RIH w	/ 5" DP. Pui	mp cmt	& pre	ssure te	st to 5	5000 p	si. POC	DH, L/D 5	"DP	& 2 7/8"	tbg.		
-																			
Logging	g Engine	ers:	Leigh A	nn Rasher	/ Craig A	.mos_ F	Report By:	Leigh	Ann R	Rasher			ι	Jnit Phor	ne: 8	3228020)55		

Shell Gulf of Mexico Inc.

Off Shore Zone 3
Posey
OCS-Y-2321 #001 (Burger J)
OCS-Y-2321 #001
55-352-00004-00

Sperry DrillingDefinitive Survey Report

07 October, 2015



Halliburton

Definitive Survey Report

Company: Shell Gulf of Mexico Inc. Off Shore Zone 3 Project:

Posey Site:

Well: OCS-Y-2321 #001 (Burger J) Wellbore: OCS-Y-2321 #001 (Burger J)

Design: Burger J Local Co-ordinate Reference:

TVD Reference: MD Reference:

North Reference: **Survey Calculation Method:**

Database:

Well OCS-Y-2321 #001 (Burger J) Burger J @ 76.00usft (Polar Pioneer)

Burger J @ 76.00usft (Polar Pioneer)

Minimum Curvature

Sperry EDM - NORTH US + CANADA

Project Off Shore Zone 3

Map System: Universal Transverse Mercator Geo Datum: North American Datum 1983

System Datum: Mean Sea Level

> Using Well Reference Point Using geodetic scale factor

Well OCS-Y-2321 #001 (Burger J), Exploration Well

Zone 03N (168 W to 162 W)

Well Position +N/-S 0.00 usft 7,897,425.31 m Latitude: 71° 10' 24.059 N Northing: +E/-W 0.00 usft 555.034.55 m Longitude: 163° 28' 18.666 W Easting:

Position Uncertainty 0.00 usft Wellhead Depth: -76.00 usft Water Depth: 146.00 usft

Wellbore OCS-Y-2321 #001 (Burger J) Declination Field Strength Magnetics **Model Name** Sample Date Dip Angle (°) (nT) (°) BGGM2015 7/25/2015 12.40 80.32 57,374

Burger J Design

Audit Notes:

Map Zone:

ACTUAL 222.00 Version: 1.0 Phase: Tie On Depth:

Vertical Section: Depth From (TVD) +N/-S +E/-W Direction (usft) (usft) (usft) (°) 0.00 222.00 0.00 0.00

Survey Program Date 10/7/2015 From То (usft) Survey (Wellbore) Survey Date (usft) **Tool Name** Description 1,378.50 Burger J Surveys (OCS-Y-2321 #001 (Bu 09/30/2015 320.88 MWD+SC Fixed:v2:standard dec & axial correction 2,646.22 Burger J Surveys (OCS-Y-2321 #001 (Bu 1,540.18 MWD+SC Fixed:v2:standard dec & axial correction 09/30/2015 5,364.19 Burger J Surveys (OCS-Y-2321 #001 (Bu MWD+SC Fixed:v2:standard dec & axial correction 09/30/2015 2,743.03 6,745.09 Burger J Surveys (OCS-Y-2321 #001 (Bu 5,429.20 MWD+SC Fixed:v2:standard dec & axial correction 09/30/2015

Survey											
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (ft)	Map Easting (ft)	DLS (°/100')	Vertical Section (ft)	Survey Tool Name
222.00	0.00	0.00	222.00	146.00	0.00	0.00	7,897,425.31	555,034.55	0.00	0.00	UNDEFINED
320.88	0.51	129.60	320.88	244.88	- 0.28	0.34	7,897,425.22	555,034.65	0.52	- 0.28	MWD+SC (1)
406.77	0.31	89.93	406.77	330.77	-0.52	0.87	7,897,425.15	555,034.81	0.39	-0.52	MWD+SC (1)
495.25	0.99	122.22	495.24	419.24	-0.93	1.75	7,897,425.03	555,035.08	0.84	-0.93	MWD+SC (1)
590.43	0.31	82.72	590.41	514.41	-1.34	2.70	7,897,424.90	555,035.37	0.82	-1.34	MWD+SC (1)
684.05	0.64	327.24	684.03	608.03	-0.87	2.67	7,897,425.05	555,035.36	0.88	-0.86	MWD+SC (1)
866.10	0.28	101.20	866.08	790.08	-0.10	2.56	7,897,425.28	555,035.33	0.47	-0.10	MWD+SC (1)
957.99	0.00	269.46	957.97	881.97	-0.14	2.78	7,897,425.27	555,035.40	0.30	-0.14	MWD+SC (1)
1,051.65	0.14	176.72	1,051.63	975.63	-0.25	2.78	7,897,425.23	555,035.40	0.15	-0.25	MWD+SC (1)
1,144.54	0.26	120.65	1,144.52	1,068.52	-0.48	2.97	7,897,425.17	555,035.46	0.23	-0.47	MWD+SC (1)
1,235.66	0.41	134.11	1,235.64	1,159.64	-0.81	3.38	7,897,425.06	555,035.58	0.18	-0.81	MWD+SC (1)

Halliburton

Definitive Survey Report

Company: Shell Gulf of Mexico Inc. Project: Off Shore Zone 3

Site: Posey

Well: OCS-Y-2321 #001 (Burger J) Wellbore: OCS-Y-2321 #001 (Burger J)

Design: Burger J Local Co-ordinate Reference:

Well OCS-Y-2321 #001 (Burger J) TVD Reference: Burger J @ 76.00usft (Polar Pioneer) Burger J @ 76.00usft (Polar Pioneer) MD Reference:

North Reference:

Survey Calculation Method: Minimum Curvature

Database: Sperry EDM - NORTH US + CANADA

VID (C)	Inc	Azi	TVD	TVDSS	+N/-S	+E/-W	Map Northing	Map Easting	DLS	Vertical Section	O
sft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(ft)	(ft)	(°/100')	(ft)	Survey Tool Name
,328.60	0.51	59.75	1,328.57	1,252.57	-0.83	3.98	7,897,425.06	555,035.76	0.60		MWD+SC (1)
,378.50	0.25	111.62	1,378.47	1,302.47	-0.76	4.27	7,897,425.08	555,035.85	0.81		MWD+SC (1)
,540.18	0.12	50.83	1,540.15	1,464.15	-0.78	4.73	7,897,425.07	555,035.99	0.13		MWD+SC (2)
1,723.74	0.39	34.99	1,723.71	1,647.71	-0.15	5.24	7,897,425.26	555,036.15	0.15	-0.15	MWD+SC (2)
1,818.58	0.58	50.01	1,818.55	1,742.55	0.42	5.79	7,897,425.44	555,036.31	0.24	0.42	MWD+SC (2)
2,003.18	1.06	39.81	2,003.13	1,927.13	2.34	7.60	7,897,426.02	555,036.87	0.27	2.34	MWD+SC (2)
2,095.93	0.87	35.51	2,095.86	2,019.86	3.57	8.56	7,897,426.40	555,037.16	0.22	3.57	MWD+SC (2)
2,186.15	0.69	72.12	2,186.08	2,110.08	4.29	9.47	7,897,426.62	555,037.44	0.58	4.29	MWD+SC (2)
2,373.34	0.75	76.36	2,373.25	2,297.25	4.93	11.74	7,897,426.81	555,038.13	0.04	4.93	MWD+SC (2)
,463.93	0.78	75.65	2,463.83	2,387.83	5.22	12.91	7,897,426.90	555,038.48	0.03	5.22	MWD+SC (2)
,555.30	0.79	70.25	2,555.20	2,479.20	5.59	14.11	7,897,427.01	555,038.85	0.08	5.59	MWD+SC (2)
2,646.22	0.79	76.51	2,646.11	2,570.11	5.95	15.31	7,897,427.12	555,039.21	0.09	5.95	MWD+SC (2)
2,743.03	0.70	74.08	2,742.91	2,666.91	6.26	16.52	7,897,427.22	555,039.58	0.10	6.27	MWD+SC (3)
2,837.42	0.74	67.59	2,837.29	2,761.29	6.65	17.64	7,897,427.34	555,039.93	0.10	6.66	MWD+SC (3)
2,875.38	0.64	69.95	2,875.25	2,799.25	6.82	18.07	7,897,427.39	555,040.06	0.27	6.82	MWD+SC (3)
2,978.31	0.74	64.69	2,978.17	2,902.17	7.30	19.21	7,897,427.53	555,040.40	0.11	7.30	MWD+SC (3)
3,074.55	0.58	52.33	3,074.40	2,998.40	7.86	20.16	7,897,427.71	555,040.69	0.22		MWD+SC (3)
3,169.04	0.67	47.05	3,168.89	3,092.89	8,53	20.94	7,897,427.91	555,040.93	0.11		MWD+SC (3)
3,258.93	0.77	27.36	3,258.77	3,182.77	9.43	21.60	7,897,428.18	555,041.13	0.30		MWD+SC (3)
3,351.80	0.94	33.05	3,351.63	3,275.63	10.62	22.30	7,897,428.55	555,041.35	0.20	10.62	MWD+SC (3)
3,445.40	0.89	33.34	3,445.22	3,369.22	11.87	23.12	7,897,428.93	555,041.59	0.05		MWD+SC (3)
3,537.90	0.88	39.68	3,537.71	3,461.71	13.02	23.97	7,897,429.28	555,041.85	0.11		MWD+SC (3)
3,630.29	0.86	29.57	3,630.09	3,554.09	14.17	24.77	7,897,429.63	555,042.10	0.17		MWD+SC (3)
3,724.13	1.05	46.97	3,723,91	3,647.92	15.37	25.74	7,897,429.99	555,042.39	0.37		MWD+SC (3)
3,815.47	1.16	37.46	3,815.24	3,739.24	16.67	26.92	7,897,430.39	555,042.75	0.23	16.67	MWD+SC (3)
3,909.95	1.11	27.77	3,909.70	3,833.70	18.24	27.92	7,897,430.87	555,043.06	0.23		MWD+SC (3)
,001.96	1.54	18.87	4,001.68	3,925.68	20.20	28.74	7,897,430.67	555,043.31	0.52		MWD+SC (3)
1,095.18	1.55	21.22	4,001.00	4,018.87	22.56	29.60	7,897,431.40	555,043.57	0.07		MWD+SC (3)
4,189.17	1.52	19.27	4,188.83	4,112.83	24.92	30.47	7,897,432.90	555,043.83	0.06		MWD+SC (3)
1,280.67	1.73	13.84	4,280.29	4,204.29	27.41	31.20	7,897,433.66	555,044.06	0.28		MWD+SC (3)
1,373.26	2.11	22.24	4,372.83	4,296.83	30.34	32.18	7,897,434.56	555,044.36	0.51		MWD+SC (3)
1,465.71	1.69	19.56	4,465.23	4,389.23	33.20	33.28	7,897,435.43	555,044.69	0.46		MWD+SC (3)
,559.04	2.02	19.56	4,558.51	4,482.51	36.05	34.29	7,897,436.29	555,045.00	0.35		MWD+SC (3)
,651.17	2.19	23.91	4,650.58	4,574.58	39.19	35.55	7,897,437.25	555,045.38	0.25	39.19	MWD+SC (3)
,743.27	2.64	25.07	4,742.59	4,666.59	42.72	37.16	7,897,438.33	555,045.87	0.49	42.72	MWD+SC (3)
1,836.87	3.09	32.03	4,836.08	4,760.08	46.81	39.41	7,897,439.57	555,046.56	0.61	46.81	MWD+SC (3)
,929.20	3.15	34.87	4,928.27	4,852.27	51.00	42.18	7,897,440.85	555,047.40	0.18	51.00	MWD+SC (3)
,021.52	3.28	37.85	5,020.45	4,944.45	55.17	45.26	7,897,442.12	555,048.34	0.23	55.17	MWD+SC (3)
,113.59	3.34	39.69	5,112.36	5,036.36	59.31	48.58	7,897,443.38	555,049.35	0.13	59.32	MWD+SC (3)
5,206.14	3.59	47.76	5,204.74	5,128.74	63.33	52.45	7,897,444.61	555,050.53	0.59	62.24	MWD+SC (3)

Halliburton

Definitive Survey Report

Company: Shell Gulf of Mexico Inc. Off Shore Zone 3 Project:

Site: Posey

Well: OCS-Y-2321 #001 (Burger J) Wellbore: OCS-Y-2321 #001 (Burger J)

Design: Burger J Local Co-ordinate Reference:

TVD Reference: MD Reference:

North Reference: Survey Calculation Method:

Database:

Well OCS-Y-2321 #001 (Burger J) Burger J @ 76.00usft (Polar Pioneer)

Burger J @ 76.00usft (Polar Pioneer)

Minimum Curvature

Sperry EDM - NORTH US + CANADA

MD usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (ft)	Map Easting (ft)	DLS (°/100')	Vertical Section (ft)	Survey Tool Name
5,299.05	3.70	48.27	5,297.46	5,221.47	67.28	56.84	7,897,445.81	555,051.87	0.12	67.29	MWD+SC (3)
5,364.19	3.45	52.11	5,362.48	5,286.48	69.89	59.96	7,897,446.60	555,052.82	0.53	69.89	MWD+SC (3)
5,429.81	3.65	46.91	5,427.97	5,351.97	72.53	63.04	7,897,447.41	555,053.76	0.58	72.53	MWD+SC (4)
5,518.31	3.73	45.18	5,516.29	5,440.29	76.48	67.14	7,897,448.61	555,055.01	0.15	76.49	MWD+SC (4)
5,612.70	3.58	42.26	5,610.49	5,534.49	80.83	71.30	7,897,449.94	555,056.27	0.25	80.83	MWD+SC (4)
5,704.09	3.56	42.97	5,701.70	5,625.70	85.01	75.15	7,897,451.21	555,057.45	0.05	85.02	MWD+SC (4)
5,795.19	3.47	41.51	5,792.63	5,716.63	89.15	78.91	7,897,452.47	555,058.59	0.14	89.15	MWD+SC (4)
5,889.32	3.48	42.48	5,886.59	5,810.59	93.39	82.72	7,897,453.76	555,059.76	0.06	93.39	MWD+SC (4)
5,980.70	3.42	42.67	5,977.80	5,901.80	97.44	86.44	7,897,455.00	555,060.89	0.07	97.44	MWD+SC (4)
6,075.07	3.43	41.69	6,072.00	5,996.00	101.61	90.23	7,897,456.27	555,062.04	0.06	101.62	MWD+SC (4)
6,167.81	3.55	39.12	6,164.57	6,088.57	105.91	93.89	7,897,457.58	555,063.16	0.21	105.92	MWD+SC (4)
6,259.59	3.53	39.52	6,256.17	6,180.17	110.30	97.48	7,897,458.92	555,064.25	0.03	110.31	MWD+SC (4)
6,346.61	3.75	37.26	6,343.02	6,267.02	114.63	100.91	7,897,460.24	555,065.29	0.30	114.64	MWD+SC (4)
6,445.34	3.99	34.54	6,441.52	6,365.52	120.03	104.81	7,897,461.88	555,066.48	0.31	120.04	MWD+SC (4)
6,536.48	3.96	35.37	6,532.44	6,456.44	125.21	108.43	7,897,463.46	555,067.59	0.07	125.22	MWD+SC (4)
6,628.63	3.92	37.01	6,624.38	6,548.38	130.32	112.17	7,897,465.02	555,068.73	0.13	130.33	MWD+SC (4)
6,721.62	3.89	35.41	6,717.15	6,641.15	135.43	115.91	7,897,466.57	555,069.87	0.12	135.44	MWD+SC (4)
6,745.05	3.99	35.86	6,740.53	6,664.53	136.73	116.84	7,897,466.97	555,070.15	0.45	136.74	MWD+SC (4)
6,800.00	3.99	35.86	6,795.34	6,719.34	139.83	119.08	7,897,467.92	555,070.83	0.00	139.84	PROJECTED to TD

Checked By: Approved By:	Date:
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