

TG-1

Day on Hole	Date	Beg. Depth	Ending Depth	Δ	Water Flow	Flow Description	Formation	DES Notes
1	11/3/2014	0	0	0			N/A	DAY: Pack and load equipment onto Semi Trucks. Took all day to load trucks, last truck left yard around 7pm. Joe B. and Joe H. headed up to project pulling gooseneck trailer and arrived at 11pm. Beau caught a flight to Durango to help Joe B and Joe H unload trucks tomorrow morning at 9am. Tim, Justin and Shane to depart from SLC late tomorrow morning. NIGHT: No night shift.
2	11/4/2014	0	0	0			N/A	DAY: Tim, Justin and Shane in SLC packing and loading last of the equipment into trailers. They drove 2 trucks up pulling trailers from SLC leaving in the afternoon and arriving late to Pagosa Springs. Joe B., Joe H. and Beau unloaded 3 Semi Trucks with equipment at the Mask laydown yard. Started moving items to site. Wait on guys bringing trailers with additional equipment. Took gooseneck trailer into shop to replace tire. Justin arrived in Pagosa at 9pm. Tim still enroute. NIGHT: No night shift.
3	11/5/2014	0	0	0			N/A	DAY: Tim and Shane enroute to Pagosa from Monticello. Pulled over by UHP (no citation), contributed to late arrival in Pagosa. Loaded items from laydown area onto trailers and shuttled them to drill site. Environmental orientation was held by Steve from Fish and Wildlife. Continued rigging up site. Placed cellar in ground, positioned rig over hole center, assembled and set shack in place, staged mud mixing equipment, put up additional fencing, dropped parts trailer on site and unloaded last trailer from SLC. Tim and Shane arrived in Pagosa at 2pm. NIGHT: No night shift. No accidents, injuries or environmental issues. Incident Reported - Utah Highway Patrol.
4	11/6/2014	4	18	14			N/A	DAY: Pre-Shift Inspection/Safety Mtg. Continue rigging up equipment on site (plumb mud system, move rods from laydown yard, set rod trailer, set parts trailer, set light plant, run wireline and assemble crown, etc.) Mixed drill mud to 44 vis, drilled through concrete cellar. Began rotary drilling from 4fbs to 18fbs. Having difficulty lifting cuttings out of hole (10-5/8" tricone bit with 4-1/2" pipe creates a large annulus and continuously packs off at the bit. Trash pump is having difficulty lifting and pumping cuttings out of cellar, have to disassemble and c/lean out trash pump. Beau Marshall traveled back to SLC. NIGHT: No night shift. All crew members were on day shift.
5	11/7/2014	18	50	32			N/A	DAY: Pre-Shift Inspection/Safety Mtg. Rig up (disconnected mud system, drained hoses and pumps overnight cold temperatures). Continue rotary drilling with 10-5/8" tricone bit from 18fbs to 50fbs. Took longer than expected due to cuttings packing around bit. Also hit a few hard zones which slowed penetration. Flushed hole every 10ft after each connection. Cuttings continued to get stuck in trash pump and had to disassemble/reassemble trash pump numerous times. Finally reached 50fbs, flushed hole, mixed cement (35 bags of neat cement, 220 gallons of water, 14ppg cement weight, took an 8 oz. sample). Run in hole with 6-5/8" SWT casing (Grade 4130), pumped cement down hole. Standby - WOC (wait on cement). Did not use any mud products, recirculated mud used yesterday. NIGHT: No night shift. WOC. All crew members were on day shift.
6	11/8/2014	50	50	0			N/A	DAY: WOC - Wait on Cement. Performed misc tasks on site, finished putting together rest of shack, clean up site, etc. NIGHT: Standby - WOC.
7	11/9/2014	50	203.7	153.7			N/A	DAY: WOC - Wait on Cement. Performed misc tasks on site. Pre-shift Inspection/Safety Mtg. Jack leg sinking, re-adjust rig over hole center, remove landing joint, clean cellar, backfill sides of cellar, hook up hoses, mix mud, trip in hole with HWT casing (4-1/2") and new 5-5/8" tricone bit. Rotary drill from 50fbs to 120fbs. Did not use new mud products, recirculated mud from sumps. NIGHT: Pre-shift Inspection/Safety Mtg. Rotary drill (5-5/8") from 120fbs to 204fbs. Condition/Flush hole, trip HWT casing out, remove tricone, put on casing shoe, trip HWT casing back in hole, start cementing operation.
8	11/10/2014	203.7	203.7	0			N/A	DAY: Pre-shift Inspection/Safety Mtg. Condition/flush hole, mix cement, pump cement, top job down the back side and fill annulus. Flush hoses and pumps, winterize for overnight. Clean up site and other misc tasks. NIGHT: Standby - WOC (Wait on cement).
9	11/11/2014	203.7	226.7	23			Mancos	DAY: Standby - WOC. Pre-shift Inspection/Safety Mtg. (Wait on vac truck, pump out sumps and mud tank, re-arrange site to start using mud shaker.) Assemble/Install BOP. NIGHT: Pre-shift Inspection/Safety Mtg. Finish install and test of BOP. Switch over to HQ system (Change chuck jaws, foot clamp, subs, etc.). Trip in Hole with HQ rods, drill out plug and cement. Start coring HQ3 from 203.7 to 226.7fbs.
10	11/12/2014	226.7	378.7	152	Y	artesian @ 356	Mancos/Dakota (Begins 355.5ft)	DAY: Pre-shift Inspection/Safety Mtg. Core ahead HQ3 from 226.7 to 378.7fbs. Mud Vis at 48. At 356fbs hit water with artesian flow. Waited and let it flow to see if it was hydrostatic or if it would die out. Flow stayed steady, pits and tanks filling up. NIGHT: Pre-shift Inspection/Safety Mtg. Waiting on orders/plan on how to proceed. Decision made to core ahead and see if the artesian continues or goes away. Cored another 10ft to 378.7fbs, water still flowing. Sumps and tanks full, cannot drill further until we can free up capacity to take on water from the hole. Standby.

11	11/13/2014	378.7	378.7	0			Dakota	DAY: Pre-shift Inspection/Safety Mtg. Mix barite into mud (weight up), bumped mud weight to 9.9ppg and circulated through hole and sumps. heavier mud weight still not stopping artesian flow. Vac truck came and emptied sumps, started mixing cement, pumped cement down hole to plug off artesian zone and shut in BOP. Mixed 28 bags of cement with 196 gallons of water, weight of cement was 15.5ppg. Standby - WOC. Cleaned cement from pumps and hoses. NIGHT: Standby - WOC.
12	11/14/2014	378.7	438.7	60			Dakota	DAY: Standby - WOC. Pre-shift Inspection/Safety Mtg. Open BOP, artesian still flowing, cement plug did not hold/work. Pumped sumps down hole to fill hole with mud and prepare to continue drilling ahead. NIGHT: Pre-shift Inspection/Safety Mtg. Drill out cement, core ahead HQ3 from 378.7 to 418.7fbs. Stop to pump out sumps (artesian still flowing). Continue coring ahead from 418.7 to 438.7fbs. Pump out sumps again. Decision made to stop drilling, shut in BOP and standby for a hole packer to cement hole in under pressure.
13	11/15/2014	438.7	438.7	0			Dakota	DAY: Pre-shift Inspection/Safety Mtg. Trip out HQ rods, pump out sumps, waiting on packer to arrive. Packer arrive, trip in HQ rods with packer attached, set packer. Mix and pump cement, trip out HQ rods, packer is working, no artesian flow coming back. Standby - WOC. Mixed 34 bags of cement with 238 gallons of water, cement weight was 15.4 ppg. NIGHT: Standby - WOC.
14	11/16/2014	438.7	438.7	0			Dakota	DAY: Wait on cement until 4:30pm. Pre-shift Inspection/Safety Mtg. Trip in HQ rods to depth of packer (335fbs), mix mud to a vis of 54. NIGHT: Pre-shift Inspection and Safety Mtg. Drill out cement from 286-330fbs, tag the packer and start to drill it out. Packer is made of steel, aluminum and rubber, bit plugged up, trip to clean aluminum from bit waterways, continue drilling out packer, once we drilled thru the packer, tripped to inspect/clean bit, tripped back in and continued drilling remainder of cement from 300 to 438.7fbs. Cement plug is holding, no artesian water flow. (drilled through cement and packer using recirculated mud, have full returns, no fluid loss.)
15	11/17/2014	438.7	637.7	199			Dakota/Morrison (Begins 564 ft.)	
16	11/18/2014	637.7	755.7	118			Morrison	DAY: Pre-shift Inspection/Safety Mtg. Sumps full, standby waiting on vac truck. Vac truck arrived but got stuck in the mud onsite, Vac company had to call safety manager out, heavy equipment brought in to pull the truck out (3 hours to free the truck which they will not be charging us). Conducted a temp run at 1:15pm at 637.7fbs, (23 C/75 F). After sumps were drained, mixed mud. Technical meeting/conf call was held at 2:15pm. Beau Marshall traveled from SLC to Pagosa Springs arriving around 11am. NIGHT: Pre-shift Inspection and Safety Mtg. Fill up frac tank (creek frozen over, water draw very slow), finish mixing mud. Core a head HQ3 from 637.7 to 755.7 fbs. Sumps full again, water pressure spiking while drilling, bit might be wore out, start to trip out to check bit. (Have full returns/circulation, no fluid loss.)
17	11/19/2014	755.7	867.45	111.75	Y	Some water, and it has been sampled. Low flow but not 0. (5-20 gpm)	Morrison	DAY: Pre-shift Inspection/Safety Mtg. Trip rods out to check/change bit (wet trip, gave back a lot of fluid, sumps full, pump sumps down hole, continue tripping out. Bit gone, new bit on (series 2), adjust jack legs on rig, pump sumps down hole (fill hole with mud), trip HQ rods back in to bottom. Core ahead HQ3 from 755.7 to 768.7fbs. Sumps full, standby wait for vac truck. Continue HQ3 coring from 786.7 to 798.7fbs. Field trip to drill site by local high school students today. Tim Frazier traveled back to SLC to get DES' water truck so we cut haul cuttings and fluids from site ourselves (save costs and standby time). NIGHT: Pre-shift Inspection and Safety Mtg. Conduct temperature run at 800fbs (26.1C/ 79F). Continue HQ3 coring from 798.7 to 867.45fbs. Water swivel needed rebuilt and rig ran out fuel (1 hr to reprime and start) - no charge. (Have full returns/circulation, no fluid loss.)
18	11/20/2014	867.45	958.7	91.25			Morrison	DAY: Pre-shift Inspection/Safety Mtg. Work stuck tube, lifting dog and spear point broke, had a replace, pump sumps down hole/condition mud, Continue HQ3 coring, drilled 1 run, tube stuck again, wireline broke, trip out to recover tube from BHA, Trip back in. Sumps full from tripping out, pump sumps down hole. Mud vis at 51. Tim Frazier drove water truck from SLC to Pagosa (now we will haul off fluids/cuttings from sumps and avoid waiting for vac truck). Beau Marshall traveled from Pagosa to SLC. NIGHT: Pre-shift Inspection and Safety Mtg. Continue HQ3 coring from 877.2 to 958.7fbs. Water temperature seemed to be a little warmer on last run with slight increase in artesian flow. Temperature run will be conducted during the following shift.
19	11/21/2014	958.7	998.7	40	Y	Artesian at 978ft, at 60psi, increases in flow rate and temperature slightly as drilling continues.	Morrison	DAY: Pre-shift Inspection/Safety Mtg. Pump sumps into water truck and haul fluids to disposal site. Continue HQ coring from 958.7 to 998.7fbs. Hit Artesian Flow at 978fbs, registered at 60psi. Pump down temp probe, didn't record, have to do again tomorrow. Core ahead HQ3 from 978.7 to 998.7fbs. Tim Frazier drove from SLC to Pagosa Springs with DES Water Truck. NIGHT: Pre-shift Inspection and Safety Mtg. Continue HQ3 coring from 877.2 to 958.7fbs. Water temperature seemed to be a little warmer on last run with slight increase in artesian flow. Temperature run will be conducted during the following shift.

20	11/22/2014	998.7	998.7	0			Morrison	DAY: Pre-shift Inspection/Safety Mtg. Wait on Packer to arrive via FedEx. Trip in HQ rods with packer attached, set packer, mix cement, pump cement. Pump pressure spiking while pumping, gpm quite low. NIGHT: Pre-shift Inspection and Safety Mtg. Continue pumping cement at low volume (5 gpm), pressure spiked to 1200psi and pumped stalled, something not right. Trip out HQ to check packer, cement was filled inside each rods, flush each rod while tripping out, half of packer missing, unable to find cause of malfunction, speculate that check valve was blocked/clogged. Trip back in with HQ rods and core barrel to push packer to bottom (make sure it is on bottom). We will run another packer and cement again tomorrow.
21	11/23/2014	998.7	998.7	0			Morrison	DAY: Pre-shift Inspection/Safety Mtg. Trip HQ rods out of hole (pushed previous packer to bottom of hole), put on new packer, trip HQ rods back in, set packer. We will be shutting down for Thanksgiving Break, so we took advantage of daylight and moved equipment / prepped site for shut down. Mixed cement, pumped down hole and tripped out HQ rods. Closed Master Valve. Standby waiting on cement. Secure site. NIGHT: No night shift, start Thanksgiving break, they will travel home tomorrow morning.
22	11/24/2014	998.7	998.7	0			Morrison	Thanksgiving Break
23	11/25/2014	998.7	998.7	0			Morrison	Thanksgiving Break
24	11/26/2014	998.7	998.7	0			Morrison	Thanksgiving Break
25	11/27/2014	998.7	998.7	0			Morrison	Thanksgiving Break
26	11/28/2014	998.7	998.7	0			Morrison	Thanksgiving Break
27	11/29/2014	998.7	998.7	0			Morrison	Thanksgiving Break
28	11/30/2014	998.7	998.7	0			Morrison	DAY: Rig up / prep for restart of drilling operations, plumb mud system, fill holding tank with water, mix mud, thaw 2" hose, change bit (took off series 2 and put on series 7), trip in and tag cement at 908.7fbs, continue mixing mud, start drilling cement and packer. Stop to tap head bushing bolts and install head bushing. NIGHT: Pre-shift Inspection / Safety Mtg. Continue drilling cement and packer, chuck jaws not grabbing jaws, disassemble drill head to inspect / reassemble. Went to haul water off site, pop sound when starting to move water truck, can't move it. Pump sumps, continue drilling cement, down to 988.7 (10ft from botom of hole, one more packer to drill at bottom of hole). No accidents, injuries or environmental issues.
29	12/1/2014	998.7	1178.7	180			Morrison	DAY: Pre-shift Inspection / Safety Mtg. Finish drilling out cement and packer, core a head from 998.7 to 1088.7fbs. Conducted a temperature run at 1038.7fbs (30 C). Water truck broke down, something wrong with rear differential/drive line (looking for a mechanic). NIGHT: Pre-shift Inspection / Safety Mtg. Had to pump sumps out, continued HQ3 coring from 1088.7 to 1178/7fbs. Had to stop and repair water swivel (packing wore out from recirculated mud).
30	12/2/2014	1178.7	1278.7	100	Y	Artesian at 1287.7	Morrison	DAY: Pre-shift Inspection / Safety Mtg. Sumps full at shift change, pump out sumps/haul fluids offsite. Conduct temperature run at 1178fbs (30.45C). Water source/creek next to site running dry/frozen, resulting in very slow draw (5gpm), took 4 hours to fill storage tank. We are recirculating drill fluids with full returns, mud vis at 50. New motor for mud shaker was installed and shaker is back in operation. Was able to core a head 1 run (10ft), then stopped to replace packing in water swivel. Water truck still broke down, waiting on repairman. NIGHT: Pre-shift Inspection / Safety Mtg. Continue HQ3 coring from 1188.7 to 1278.7fbs. Hit another artesian water flow at 1287.7fbs, shut in BOP to stop water returning to surface as pits and tanks are at full capacity. Clean up and organize site while we wait for water truck to haul off fluids.
31	12/3/2014	1278.7	1457.7	179	Y	still artesian at 15gpm	Morrison/ Wanakah (Begins 1366)	DAY: Pre-shift Inspection / Safety Mtg. Continue HQ3 coring from 1378.7 to 1398.7fbs, Sumps full, pump/ empty sumps, conduct a temperature run at 1288.7 fbs (35.45 C). Continue coring to 1378.7 fbs. We are recirculating drill fluids with full returns, mud vis at 51. Water truck still broke down, waiting on repairs. NIGHT: Pre-shift Inspection / Safety Mtg. Continue HQ3 coring from 1378.7 to 1457.7fbs. Pumped sumps empty to conduct temp run, temp run at 1398.7 fbs (35.7 C). Sumps filling up, pump out and empty (still experiencing slight artesian flow approx 15gpm. Bit is gone, need to trip for bit next shift.
32	12/4/2014	1457.7	1457.7	0	Y	Artesian at 300gpm, high pressure	Wanakah	DAY: Pre-shift Inspection / Safety Mtg. Pump out sumps, trip rods out for bit change (wet trip with artesian flow, took longer). Dropped rods down hole, fish rods out with Bowen Spear, finish tripping rods out (time expensed not chargeable). Changed out bit. Very high pressure artesian flow coming back, over 300gpm, sumps filled, up again, pump out/empty sumps. Water truck repaired, back in operation. NIGHT: Pre-shift Inspection / Safety Mtg. Trip HQ rods in hole with packer, hit bridge at 360fbs, previous cement job must have gave out, set packer at 360fbs, trip HQ rods out of hole to put on HQ core barrel, trip HQ rods back in hole with HQ CB, drill out packer and cement bridge, hole opened and clear now, trip out and shut in BOP. Standby - wait on parts (more packers).

33	12/5/2014				0	N		DAY: Pre-shift Inspection / Safety Mtg. Standby- waiting for loggers. In the mean time, unloaded trailer at laydown area, organized lay down area, rigged down and removed some equipment from site, cleaned up and organized site and parts trailer. Worked on foot clamps. More packers on the way, also ordered a stuffing box, having a loading chamber machined out to accomodate survey tools. NIGHT: Standby - wait on loggers (should arrive Saturday). Drove to Albuquerque to pick up packers and stuffing box.
34	12/6/2014				0	N		DAY: Pre-shift Inspection / Safety Mtg. Standby- waiting for loggers. Logger arrived, start logging ops at 12:30pm, continue logging remainder of shift. NIGHT: Pre-shift Inspection / Safety Mtg. Continue logging ops. Ran 4 survey instruments (Gamma, Sonic, Neutron Porosity and Acoustic Televiwer). Acoustic Televiwer probe hit bridge and stopped at 350fbs, did not make it all the way to bottom. Standby - wait on bridge packer.
35	12/7/2014				0	N		DAY: Standby - wait for bridge packer. Drove to Albuquerque to intercept packer. NIGHT: Pre-shift Inspection / Safety Mtg. Trip in (wet trip) core barrel, ream hole and open up tight spot in hole at 350fbs. Trip out HQ rods (wet trip) to put on bridge packer, trip in hole with bridge packer, set bridge packer at 365fbs, trip out HQ rods and put on KV grout plug/packer, set KV packer at 350fbs.
36	12/8/2014				0			DAY: Pre-shift Inspection / Safety Mtg. After setting the bridge packer at 365fbs, there was no artesian water flow, so the cement job between 350-365fbs did not come apart and is not the source of the current/largest artesian. Triped in with HQ core barrel to drill our bridge packer, packer slipping/chasing down hole. Chase it to bottom of the hole. Artesian returned past 900fbs, not sure exactly what depth. NIGHT: Pre-shift Inspection / Safety Mtg. Trip all HQ rods out (1450ft/wet trip), remove core barrel, set up another bridge plug, trip in with bridge plug, keeps getting hung up, trip out to readjust bridge plug, put on core barrel, trip in and ream tight spots, trip out core barrel and put bridge plug back on.
37	12/9/2014				0			DAY: Pre-shift Inspection / Safety Mtg. Finish tripping rods in with bridge plug to 1285fbs (wet trip, fighting artesian). Set bridge plug, Trip out to put on HQ VK Packer, trip in with packer, (plan was to set packer at 1255fbs, got hung up at 365fbs, rubber bushing from packer came up thru the BOP, packer has been compromised, but set/stuck at 360fbs). Trip HQ rods out, put on HQ core barrel to drill out packer at 360fbs. NIGHT: Pre-shift Inspection / Safety Mtg. Drill out packer at 360fbs, start pushing/chasing packer down hole, packer stuck at 660fbs, continue drilling out packer, trip out to clean aluminum off bit, trip back in and finish drilling out packer. Trip all rods in to bottom (1285fbs) to make sure hole is clear. Hole is clear, trip all rods out to put a new packer on (need to get a packer set at 1255fbs in order to cement zone from 1255-1285fbs under pressure and plug artesian flow there).
38	12/10/2014				0			DAY: Pre-shift Inspection / Safety Mtg. Trip rods in with packer to 1240fbs, set packer, start mixing cement, trash pump stopped working, had to go buy a new pump, finish mixing cement. 3.5hrs after we set the packer (just as we were ready to pump cement), water started shooting back up the rods, packer must have failed. Pump cement into sump, start tackling artesian flow. Start to trip rods out of hole (wet trip). Water truck was repaired today, back in operation. NIGHT: Pre-shift Inspection / Safety Mtg. Trip rods out of hole (wet trip), shut in BOP. Winterize equipment and site, stand by - wait on orders, how to proceed (may need a different packer/equipment).
39	12/11/2014				0			DAY: Stand by -wait on new style packer (Van Ruth CW plug). NIGHT: Stand by - wait on CW Packer.
40	12/12/2014				0			DAY: Standby for packer. Trip rods to 1300 ft. Make sure hole is clean and ready for packers to be set. NIGHT: Standby for packers. Get liner from laydown and bring to site.
41	12/13/2014				0	Y	800-1000 gpm artesian	DAY: Pre-Shift Inspection Safety Mtg. Stand by waiting on inflatable packer. Trip in hole with inflatable packer, set packer at 1250fbs, trip out HQ rods. Begin disassembly of BOP (to run CW plug, 2-3/8" liner and cementing ops). NIGHT: Pre-Shift Inspection and Safety Mtg. Finish disassembly of BOP, Trip in HQ rods with CW plug, hit inflatable packer at 800fbs (inflatable packer did not hold, coming up the hole, we estimate the current artesian issue to be 800-1000gpm and pressure from that affecting the packer/coming up around it.) Trip HQ rods out of hole, no BOP on, lots of water coming back, flooded site. Try a temporary plug with HWT cement plug (rubber), trip in with HQ rods to push that down, decreased the flow and pressure slightly, Trip HQ rods out of hole, add 4ft of HWT casing with HWT cement plug (rubber), trip in with HQ rods to push that down, decreased the flow and pressure slightly, Trip HQ rods out of hole, add 4ft of HWT casing to bottom of master valve and thread in to surface casing to shut in the well. No accidents, injuries. Incident reported - extreme amount of water coming back flooded site.

42	12/14/2014			0				DAY: Due to the recent and largest artesian battle, crews worked over time and are not adequately rested. At the request of the client (KS), crews shall be given a day off the rest (at no charge to the client) and prepare themselves to abandon current well. Beau agreed to this with Kirsten. NIGHT: No night shift. No accidents, injuries, incidents or environmental concerns.
43	12/15/2014			0				DAY: Wait on orders. Pre-Shift Inspection / Safety Mtg. Load HQ drill pipe onto trailer (prep for site move). Local machine shop built a flange for BOP, brought more 2-3/8" liner to site, install liner flange on BOP. NIGHT: Pre-Shift Inspection / Safety Mtg. Trip in 2-3/8" liner to bottom, move rig forward, weld flange onto liner, set up mixing system, mix and pump cement down hole/annulus. No accidents, injuries, incidents or environmental concerns.
44	12/16/2014			0				DAY: Pre-Shift Inspection / Safety Mtg. Clean out/flush cement from hoses, pumps and equipment. Rig down equipment and site, start site move to TG-3. NIGHT: Pre-Shift Inspection / Safety Mtg. Continue with site move and setting up on TG-3. No accidents, injuries, incidents or environmental concerns.

TG-3

Day on Hole	Date	Beg. Depth	End Depth	Δ	Water Flow	Flow Description	Formation	DES Notes
1	12/17/2014	53	82	29			No cuttings	DAY: Wait on Ken Tooker to arrive with heavy equipment trailer to move rig, load rig, move to TG-3 and unload rig. Continue rigging up equipment on new site (TG-3), set parts trailer, rod trailer, mud tank and shaker into position. NIGHT: Pre-Shift Inspection / Safety Mtg. Continue/finish rigging up on new site, plumb mud system, align rig over hole center, switch over to PQ (change drill head, foot clamp jaws and hoist plug), mix mud, re-align rig over hole center. Start rotary drilling 5-5/8" from 53-60lbs. Trash pumps acting up, shaker not working. Go get another trash pump from laydown yard, continue rotary drilling from 60-82lbs. (Fixed shaker, wire came loose in plug.) No accidents, injuries, incidents or environmental concerns.
2	12/18/2014	82	200	118			80-130lbs is mancos, only recovered cuttings	DAY: Pre-shift Inspection / Safety Mtg. Continue rotary drilling with 5-5/8" tricone bit from 82-140lbs. At 130lbs lost circulation. Cuttings keep packing off at the bit, have to clean/flush every couple of feet. Mud VIS at 68. NIGHT: Pre-Shift Inspection / Safety Mtg. Continue rotary drilling from 140-200lbs (penetrationrate increased at 160lbs). Trip out PQ rods and remove tricone bit, trip back in with casing shoe, set HWT casing at 200lbs, mix and pump cement. Mixed 175 gallons of cement (used 25 bags). Standby - Wait on Cement. Flush and clean cement from hoses and equipment, winterize equipment. No accidents, injuries, incidents or environmental concerns.
3	12/19/2014	200	200	0				DAY: Standby - Wait on Cement. NIGHT: Pre-Shift Inspection / Safety Mtg. Continue standby - Wait on Cement, annulus not filled with cement, pull on rods to see if HWT casing has cement seal at bottom, they do. Mix another batch of cement and top job to fill annulus and create surface seal. Annulus full, cement to surface. Stand by - Wait on Cement. Clean / Flush cement from hose and equipment. Winterize equipment. Mixed 196 gallons of cement at 15ppg (used 26 bags), hole only took 150 gallons. No accidents, injuries, incidents or environmental concerns.
4	12/20/2014	200	200	0				DAY: Standby - Wait on Cement. Justin, Dave, John and Cody dismissed and drove truck with gooseneck trailer to SLC (will load trailer with additional casing and supplies over the break). Crews caught flights out of SLC and traveled home. Tim and Shane stayed to make sure cement (top job) didn't drop and were prepared to perform an additional top job. Cement job held, annulus full and have a cemented surface seal. Winterize equipment and secure site for xmas break. NIGHT: No night shift. 24hr cement job expired at 2am on Dec. 21 (this log goes until 7am). No accidents, injuries, incidents or environmental concerns.
5	1/5/2015	200	200	0				DAY: Pre-shift Inspection and Safety Mtg. Replace batteries in drill, move drill forward and adjust shack, assemble and test BOP, line drill back up over hole center, plumb mud system and haul water. Trip in HQ rods with core barrel assembly, tagged cement at 194 lbs. NIGHT: Pre-shift Inspection and Safety Mtg. Start to mix mud, cement was in mixer pipe, drain mud tank and clean out cement (had to chip it out), re-plumb mud system, thaw water tank, mix mud and drill out cement. No accidents, injuries, incidents or environmental issues.
6	1/6/2015	200	254	54	Y	Artesian between 235 and 241, 30 gpm and 12 C	Dakota Sandstone	DAY: Pre-shift Inspection / Safety Mtg. Fix pump manifold. Drill from 200 to 254lbs, have full returns and are re-circulating drill mud. Mud vis is 58, mud weight is 8.4ppg. Short runs, broken up rock. Hit artesian between 233.5lbs and 241lbs. About 25-30 GPM. Trip out to put on packer. First packer set, but did not shut off water. Pull out to put on core barrel. Trip to bottom to clean out hole. Pull core barrel and put on second packer. This one would not set. Trip out and put core barrel back on. Go in and clean hole out again. NIGHT: Pre-shift Inspection / Safety Mtg. Third packer set correctly. Mix and pump cement. 20 bags 7 GPB=212 gallons. Set packer at 210lbs. Clean equipment. Organize parts trailer and site. No accidents, injuries, incidents or environmental issues.
7	1/7/2015	254	259	5			Dakota Sandstone	DAY: Standby for cement. Service drill engine and drill head. Organize site. NIGHT: Wait on cement till 9:00. Finish setting up shacker and mud. Trip in, Drill out packer. Trip rods to bottom. No cement in hole. Drill out bottom two packers. Drill ahead 5 feet. Trip out. Artesian slowed down, but stopped. Trip out. Change mainline. Take off diverter. No accidents, injuries, incidents or environmental issues.
8	1/8/2015	259	259	0			Dakota Sandstone	DAY: Pre-shift Inspection / Safety Mtg. Stand by - Wait for cement and LCM. Mix cement (55 bags, 6 gallons per bag, 528 gallons, 15 ppg and one bag paper). Pump cement. NIGHT: Standby for cement. Work on site and laydown. No accidents, injuries, incidents or environmental issues.
9	1/9/2015	259	304	45			Dakota Sandstone	DAY: Standby - Wait on cement. NIGHT: Pre-shift Inspection / Safety Mtg. Drill cement from 150lbs to 259lbs. Continue coring ahead from 259lbs to 304lbs. No accidents, injuries, incidents or environmental issues.
10	1/10/2015	304	390	86		artesian at 344, 28psi	Dakota Sandstone / Morrison (Transition at 334)	DAY: Pre-Shift Inspection / Safety Mtg. Continue coring ahead to 370.5lbs. Artesian increased to 28psi around 344lbs. Trip to change bit. While rods were out of hole, switched from coring to rotary drilling per client request. Mix / weight up mud with Barite for rotary drilling. Rotary drill 1.5 feet. NIGHT: Pre-shift Inspection / Safety Mtg. Not able to keep up on mud (mixing barite into the mud is slow and takes longer to mix), have to stop drilling to mix mud. (31 bags of bentonite left off night shift drill report but added to this report.) No accidents, injuries, incidents or environmental issues.
11	1/11/2015	390	579	189			Morrison	DAY: Pre-shift Inspection / Safety Mtg. Continue rotary drilling ops from 390lbs to 503lbs. Started to lose circulation around 470lbs, lighten mud to 9ppg, got circulation back. Very little cuttings coming out. Poor samples. NIGHT: Pre-shift Inspection / Safety Mtg. Continue rotary drilling from 502lbs to 579lbs. Had to shut down 3 times to haul water. Will be adding a third helper to night shift to keep up with mud mixing (barite) and hauling water. AJ Vecchirelli traveled from Salt Lake City to Pagosa Springs. No accidents, injuries, incidents or environmental issues.
12	1/12/2015	579	742	163			Morrison	DAY: Pre-Shift Inspection / Safety Mtg. Continue Rotary Drilling with 3.78" PDC bit from 579lbs to 682lbs. Drilling ahead with fluid returns to surface, mud weight 9ppg, brought mud vis up to 55 to help lift cuttings. NIGHT: Pre-Shift Inspection / Safety Mtg. Continue Rotary Drilling with 3.78" PDC Bit from 682lbs to 742lbs. Penetration rate slowed down at 700lbs. No accidents, injuries, incidents or environmental issues.
13	1/13/2015	742	1032	290		artesian increased at 750 to 51psi	morrison	DAY: Pre-Shift Inspection / Safety Mtg. Continue Rotary Drilling with 3.78" PDC bit from 742lbs to 852. Had to stop to perform Pump maintenance and change out the swabs. NIGHT: Pre-Shift Inspection / Safety Mtg. Continue Rotary Drilling with 3.78" PDC bit from 852lbs to 1032lbs. Drilling ahead with full returns to surface, Mud Vis at 42 and Mud Weight at 8.5ppg. No accidents, injuries, incidents or environmental issues.
14	1/14/2015	1032	1407	375			wanakah/entrada	DAY: Pre-shift Inspection and Safety Mtg. Continue rotary drilling (3.78"PDC) from 1032lbs to 1242lbs. Maintained mud vis at 48 and mud weight at 8.4ppg. Had full circulation/returns, mud vis of returns was 40 and mud weight of returns was 8.4ppg. NIGHT: Pre-shift Inspection / Safety Mtg. Continue rotary drilling from 1242lbs to 1407lbs. At 1407lbs, penetration slowed/stopped. Stop drilling and wait on logging crew. No accidents, injuries, incidents or environmental issues. No accidents, injuries, incidents or environmental issues.

15	1/15/2015	1407	1436	29		basement	DAY: Pre-Shift Inspection / Safety Mtg. Pump weighted mud in hole for logging ops, raised weight to 11ppg (10ppg was not holding artesian back). Log hole inside rods (gamma). Trip out rods to log open hole, artesian started, stop tripping to pump weighted mud (10 ppg to hold back artesian, 11ppg started losing circulation). Finish tripping out. Open hole from (fbs to fbs, gamma). NIGHT: Pre-Shift Inspection / Safety Mtg. Log could not make it past 750lbs. Logger reached his maximum shift hours, was directed by client to trip rods in to clean hole at 750lbs and drill ahead the rest of shift. Rotary drill (3.78" PDC) from 1407lbs to 1436lbs. Mix weighted mud and pump down hole for logging ops. Start to trip rods out of hole for open hole logging. (Artesian or bridge in the hole is affecting logging probe attempt to get to bottom.) No accidents, injuries, incidents or environmental issues.
16	1/16/2015	1436	1436	0		basement	DAY: Pre-Shift Inspection / Safety Mtg. Continue tripping rods out of hole (had to stop twice and pump weighted mud to stop artesian flow). Open hole log from 750lbs to surface (tool wouldn't go past 750lbs). Trip rods back in to clean bridge/ream hole at 750lbs, artesian increased at 750lbs (over 51psi). Annular/Bag on BOP not closing, trip out and shut in well. Standby waiting on BOP part (Beau is flying them in tonight, his flight was canceled in Phoenix, rent a car and drive from Phoenix to Pagosa). NIGHT: Pre-Shift Inspection / Safety Mtg. Disassemble BOP/Annular, Stand by - wait on parts. Haul water/empty sumps, bring more barite to site. No accidents, injuries, incidents or environmental issues.
17	1/17/2015	1436	1465	29		basement	DAY: Pre-Shift Inspection / Safety Mtg. Continue standby for BOP parts. Beau arrived with parts, install new annular bag and test BOP at 200psi, BOP working, re-align rig on hole center, pump 11ppg mud down hole to suppress artesian flow, trip in HQ pipe and ream hole to 1200lbs for logging operations. NIGHT: Pre-Shift Inspection / Safety Mtg. Finish reaming from 1200lbs to 1436lbs (bottom). Rig up another holding tank for Barite (to keep agitated and fee up the mixing bowl to mix standard drill fluids for coring). Went to start coring, had difficulty recognizing if tube latched in core barrel, finally confirmed tube latched, core ahead from 1436lbs to 1465lbs. Geo on site confirmed we are in basement rock and hole was TD. Conducted a temperature run at the bottom of the hole (23.8 C). No accidents, injuries, incidents or environmental issues.
18	1/18/2015	1465	1465	0		basement	DAY: Pre-Shift Inspection / Safety Mtg. Finish temperature run (23.8 C). Pump weighted mud downhole before we trip rods out, also down the backside as rods are tripped out. Mud weight at 11ppg to stay on top of artesian. With rods out, pump a little more mud downhole prior to logging, run last survey instrument. Logging finished, pump more weighted mud downhole prior to running liner (2-3/8" casing). NIGHT: Pre-Shift Inspection / Safety Mtg. Dig out and bring additional liner from laydown to site. Cut windows in liner for cement, change out HQ equipment components of rig and install BQ to run liner. Trip liner in hole measuring, counting, cleaning and inspecting each stick. Get a pallet of cement from laydown and bring to set. Start setting up for cementing mixing operations. No accidents, injuries, incidents or environmental issues.
19	1/19/2015	1465	1465	0		basement	DAY: Pre-Shift Inspection / Safety Mtg. Build sub for 2-3/8 liner. Mix and pump cement. 518 gallons @ 15ppg. Standby for cement. Start to rig down for move. NIGHT: Pre-Shift Inspection / Safety Mtg. Standby for cement. Move equipment to lay down area. No accidents, injuries, incidents or environmental issues.

TG-5

Day on Hole	Date	Beg. Depth	End Depth	Δ	Water Flow	Flow Description	Formation	DES Notes
1	1/20/2015	0	0	0				DAY: Pre-Shift Inspection / Safety Mtg. Standby for cement. Open up well. Still getting artesian. Move drill and remove BOP. Cap well for the night. Have to get parts built for the next cement job. Get everything on site ready to move. NIGHT: Pre-Shift Inspection / Safety Mtg. Move equipment to TG-5. left mud mixer and pump for cement. Set up site. Had to clear snow and level pad. No accidents, injuries, incidents or environmental issues.
2	1/21/2015	0	16	16			Surface Alluvium	DAY: Pre-Shift Inspection / Safety Mtg. Wait on parts for cement. Get parts and set up well for cement job. Mix cement. 48 Bags=460 gallons cement @ 15ppg. Pumped all 460 gallons down. Well would only take 5-10 gpm. NIGHT: Pre-Shift Inspection / Safety Mtg. Clean cement out of equipment. Move mixer and pump to TG5 and set up. Mix mud. Start drilling. Took one hour to drill through celler. Drill to 16fbs. Hole caving. Have to keep reaming out. No accidents, injuries, incidents or environmental issues.
3	1/22/2015	16	30	14			Surface Alluvium	DAY: Pre-Shift Inspection / Safety Mtg. Drill from 16fbs to 30fbs. Hole caving. Have to pull back and ream. Dump 3/8 hole plug down hole and ream out. Not helping. Drive chain in head broke. Take off head to send to Salt Lake City for repair. NIGHT: Load head in truck and drive to Salt Lake City. No accidents, injuries, incidents or environmental issues.
4	1/23/2015	30	30	0			Surface Alluvium	DAY: Wait on drill head to return. Replace lights in trailer. Organize site and lay down. NIGHT: Drive head from Salt Lake City to Pagosa Springs. No accidents, injuries, incidents or environmental issues.
5	1/24/2015	30	30	0			Surface Alluvium	DAY: Install drill head. Start working stuck rods. Get rods free. Ream to bottom with smaller tricone(5-5/8). Cement from 30fbs to surface. NIGHT: Standby for cement. Service bean pump and organize. No accidents, injuries, incidents or environmental issues.
6	1/25/2015	30	50	20			Dakota?	DAY: Standby for cement. Preshift inspection / Safety Mtg. Drill out cement to 30fbs. Cement helped but still caving. Pull out and dump 10 bags of 3/8 hole plug down. Ream out to 30fbs. Drill to 50fbs with 8-1/2 tricone. NIGHT: Preshift inspection / Safety Mtg. Trip out 8-1/2in tricone. Dump 3/8 hole plug down hole. Ream out with 10-5/8in tricone. Flush hole. Pull rods and run 6-5/8in casing. Cement casing. No accidents, injuries, incidents or environmental issues.
7	1/26/2015	50	62	12			Dakota?	DAY: Standby for cement. NIGHT: Preshift inspection / Safety Mtg. Set site up. Put footclamps back on drill. Realign drill on hole. Trip in 5-5/8 tricone. Hit cement at 42fbs. Drill out cement. Drill to 62fbs. Water swivel seized up while drilling. Had to break down and clean cement out of it. No accidents, injuries, incidents or environmental issues.
8	1/27/2015	62	150	88	Y	100gpm at 11° C at 134'	Dakota?	DAY: Preshift inspection / Safety Mtg. Drill 5-5/8in tricone to 150fbs. Hit artesian at 134fbs. Trip out and pump weighted mud to shut off. Mix cement and pump down. Clean cementing equipment. NIGHT: Standby for cement. Work on trash pumps and organize. No accidents, injuries, incidents or environmental issues.
9	1/28/2015	150	180	30			Dakota?	DAY: Preshift inspection / Safety Mtg. Wait on cement. Trip to drill. Start reaming cement at 40fbs. Ream to bottom(150fbs). Artesian came back at 134fbs. Drill to 180fbs. Trip out to cement. Start mixing cement. NIGHT: Finish mixing cement. Pump down hole and shut in. Standby for cement. No accidents, injuries, incidents or environmental issues.
10	1/29/2015	180	200	20			Dakota	DAY: Preshift inspection / Safety Mtg. Wait on cement. Put on tricone and start reaming cement at 8fbs. Ream to 30fbs. NIGHT: Preshit inspection / Safety Mtg. Ream cement to 100fbs. Still very soft. Wait another hour. ream to bottom(180fbs). Artesian slowed down. About 10 GPM. Drill to 200fbs. Trip out and Take off tricone. Break off 5ft 6-5/8 casing. Trip in HWT and cement. Standby for cement. No accidents, injuries, incidents or environmental issues.
11	1/30/2015	200	267	67	Y	200gpm at 11°C at 204'	Morrison	DAY: Preshift inspection / Safety Mtg. Wait on cement. Start BOP installation. Have to chip away cement in celler. NIGHT: Preshit inspection / Safety Mtg. Finish BOP install. Trip in HQ rods. Hit cement @129.5fbs. Drill cement to 201.8fbs. Start coring. Got artesian 204-214fbs. No accidents, injuries, incidents or environmental issues.
12	1/31/2015	267	267	0			Morrison	DAY: Preshift inspection / Safety Mtg. Artesian water over loading sumps. Shut in and haul off to make room for trip out. Trip rods to cement hole. Mix and pump cement. 3% calcium Chloride mix. 283 gallons cement. Standby for cement. NIGHT: Preshit inspection / Safety Mtg. Wait for cement. Trip in and hit cement at 104fbs. Ream to 124fbs. Celler pump stoped working. Work on pumps. Ream from 124-144fbs. No accidents, injuries, incidents or environmental issues.
13	2/1/2015	267	267	0			Morrison	DAY: Preshift inspection / Safety Mtg. Drill cement to 214fbs. Artesian not killed. Trip out to cement. Wait on cement to come from Durango. Mix and pump cement. Standby for cement. NIGHT: Preshit inspection / Safety Mtg. Standby for cement. No accidents, injuries, incidents or environmental issues.
14	2/2/2015	267	267	0			Morrison	DAY: Preshift inspection / Safety Mtg. Drill cement to 214fbs. Wait on cement. Trip in and hit cement at 90fbs. Drill cement to 244fbs. Artesian is still there. About 20 gpm. Trip out and cement again. NIGHT: Preshit inspection / Safety Mtg. Standby for cement. Trip in and hit cement @ 165fbs. No accidents, injuries, incidents or environmental issues.

15	2/3/2015	267	267	0			Morrison	<p>DAY: Pre-shift Inspection / Safety Mtg. Continue WOC (Wait on Cement). Begin to drill out plug and cement. Mud pressured up, went to pull tube, tube stuck, couldn't work free, trip out of hole for stuck tube (found pieces of rubber lodged between core barrel and inner tube), remove debris, trip back in hole, continue drilling cement, pressured up again, trip out to check bit, waterways clogged with cement residue, clean bit and trip back in, continue drilling cement, went to pull another tube, tube stuck, couldn't work free, trip out for stuck tube, discovered bearing blew apart and a ball from the bearing is stuck between the wall of the outer tube and inner tube, put in another core barrel and inner tube, trip back in hole, started drill out cement, artesian flow returned at 245 fbs (13 ft from bottom), flow must be 200+gpm and measured 39-40psi. Cannot core ahead to 300 fbs as intended, trip out to prepare for cement job. NIGHT: Preshit inspection / Safety Mtg. Mix and pump cement (2% calcium chloride added to 500 gallon batch, 14.7ppg cement weight. Standby - WOC. No accidents, injuries, incidents or environmental issues.</p>
16	2/4/2015	267	267	0			Morrison	<p>DAY: Pre-shift Inspection / Safety Mtg. Continue WOC (Wait on Cement). NIGHT: Preshit inspection / Safety Mtg. Continue WOC until 2:30am, trip in to sample cement in hole, tagged rubber plug at 164fbs, thought we would start drilling cement there, but pushed the plug down 65ft to 229 fbs. Went to pull tube, it was stuck/sanded in, try to work free, after 1 hr, decided to trip for stuck tube, cleaned/removed tube, tripped back in, drilled 15 ft of cement, cement is still green. Stop and continue WOC (needs more time to set up). No accidents, injuries, incidents or environmental issues.</p>
17	2/5/2015	267	267	0			Morrison	<p>DAY: Pre-shift Inspection / Safety Mtg. Continue WOC (Wait on Cement). Noticed a slight artesian flow coming from the hole (1 gal/min.). It was decided with Paul Foley to start drilling cement and try to get bottom to 267fbs. Cement samples were still green, hole kicked off and drilled 10 feet of new hole from 254 to 264 fbs and artesian flow also started to increase. It was then decided with client to stop and do a cement job. Trip rods out of hole, mix Fondu Cement and pumpdown hole. Pumped 380 gal of cement at 15.1 ppg. Standby WOC, clean/flush hoses and equipment. Cement samples were setting up 3 hrs after being mixed (very encouraging). NIGHT: Preshit inspection / Safety Mtg. Continue WOC until 3:00am, trip in hole, tag rubber plug at 151 fbs, began to push plug down, called Tim and was told to stop and wait on cement incase there is an issue with the cement in the hole. No accidents, injuries, incidents or environmental issues.</p>
18	2/6/2015	267	350	83	y	artesian between 290' and 310'.	Morrison	<p>DAY: Pre-shift Inspection / Safety Mtg. Continue WOC (Wait on Cement). Rig Up/Reconnect mud hoses, mix mud, wash on hole, drill cement from 151 to 200 fbs. Fondu cement samples looked great, very hard and set up nicely. Was instructed by Paul Foley per Virgil Welch to abandon coring the cement and switch to rotary drilling with weighted mud. Tripped out HQ rods, removed core bit, put on 3.78" PDC bit, trip back in hole. Haul off used drill mud and cuttings, mix new drill mud using MI Wate (Barite). Start rotary drilling from 200 fbs using a weighted mud of 11.4ppg. Electric motor on shaker stopped working around 4:30pm, will need to get parts/new motor, but can still drill ahead. NIGHT: Preshift Inspection / Safety Mtg. Continue rotary drilling with 3.78" PDC bit from 250 - 350 fbs. Couldn't tell whether the artesian we have been trying to cement/seal off around 200 - 244 fbs has started again, but we did hit an artesian between 290 - 310 fbs that was giving us back water and diluting our mud. No accidents, injuries, incidents or environmental issues.</p>
19	2/7/2015	350	381	31			Morrison	<p>DAY: Pre-shift Inspection / Safety Mtg. Artesian zone (290-310 fbs) producing a good steady flow (guessing 200-250gpm). Weighted mud we cannot accurately gauge the flow or get a pressure reading. Starting the day at 350 fbs (40 ft past artesian zone), do we cement or keep drilling? Contact Virgil, he instructed us to bump our mud to 12.5ppg and continue rotary drilling to 1000 fbs. Called Fred to run drilling plan by him, he approved. Mix mud to a weight of 12.5ppg. Rotary drill with 3.78" PDC bit from 350-380 fbs. Pressured up, bit is plugged, can't strip or blow out. Trip rods out to check and clean bit. Ports clogged with clay, OD of bit gummed up. Clean bit and trip back in. Before we resumed drilling, directed by Client (Virgil) to put on HQ core barrel and switch back to core drilling. Trip out HQ pipe, change PDC bit, put on core barrel, trip in to 200 fbs. Virgil Welch on site. NIGHT: Preshift Inspection / Safety Mtg. Drain mud tanks and sumps (get rid of barite), mix new drill mud for core drilling. Ream hole from 200-380 fbs. Water coming up out of rods, hard to tell if tube is latching, core drill ahead but torque is high (3000) and lots of vibration. No accidents, injuries, incidents or environmental issues.</p>

20	2/8/2015	381	532	151	y	Artesian between 404'-414' at 60psi and 250+ gpm.	Morrison	DAY: Pre-shift Inspection / Safety Mtg. Continue core drilling a head (had high torque and vibration but came down). Drilling thru fractured (vertical) rock with intermittent clay seams. Clay seams stuck inner tube inside core barrel, couldn't work free, had to trip out to remove tube and clean inside of bit, trip back in, ream to bottom, continue core drilling to 417.5lbs. Hit another artesian zone (404-414 lbs) producing 60 psi, no flow meter (guessing 250+ gpm). Artesian difficult to continue drilling ahead, instructed by Virgil to weight up mud to 12.0ppg and switch to rotary drilling with a tricone bit. Trip out to remove core barrel, put on 3-7/8" tricone bit, trip in hole, at 342lbs had to ream to bottom. NIGHT: Preshift Inspection / Safety Mtg. Rotary Drill with 3-7/8" tricone bit from 417.5 - 532 lbs (stopped for 45min to beef mud weight up). New Hire Forrest Hale traveled from WA. to Pagosa. No accidents, injuries, incidents or environmental issues.
21	2/9/2015	532	591	59			Morrison	DAY: Pre-shift Inspection / Safety Mtg. Continue rotary drilling with 3-7/8" tricone, bit seems to be wearing out, trip out to inspect bit, cones getting loose. It was decided to not back n the hole with another tricone, but to stand by and wait for a PDC bit. Standby - Wait on Bit. Drove to Albuquerque to receive bit and sub (air cargo landed at 4:50pm). NIGHT: Preshift Inspection / Safety Mtg. Standby - waiting on PDC coming from Albuquerque. Bit arrived onsite at 11pm, trip in hole with 3.78" PDC bit, pump mud while tripping in to get ontop of artesian water, mix more mud with barite, start rotary drilling from 552 lbs and drill to 591 lbs. No accidents, injuries, incidents or environmental issues.
22	2/10/2015	591	722	131			Morrison	DAY: Pre-shift Inspection / Safety Mtg. Continue rotary drilling with 3-7/8" tricone from 591 - 601 lbs. Bean pump got very hot and started smoking. Shut down to inspect pump, swap out parts from spare supply pump, went to continue rotary drilling, bit is pressuring up (may be gummed up or wore out), trip out to inspect bit, bit is gone, 5 cutters missing, trip in with HQ CB (to get a core sample and recover pieces of PDC bit). Ream HQ rods to bottom, mix mud, drill a 3ft core sample, recovered pieces of PDC bit. Requested by Virgil to conduct a temperature run, Mixed and pumped weighted mud to trip HQ CB out of hole, Put on new PDC bit, pumped weighted mud to stop artesian, started tripping back in hole. NIGHT: Preshift Inspection / Safety Mtg. Finished tripping in hole with PDC bit, Resume rotary drilling (Steve Knudsen and Virgil onsite to assist in ROP tests). Rotary drill from 604 - 722 lbs. Shut down to repair flow control valve for mud pump on rig (alum valve cartridge cracked). No accidents, injuries, incidents or environmental issues.
23	2/11/2015	722	793	71			Morrison	DAY: Pre-shift Inspection / Safety Mtg. Work on Bean Pump, Pressure Flow Valve washed out, hook up spare supply pump. New Flow Valve being air freighted to Albuquerque. Continue rotary drilling with 3-7/8" tricone from 722 - 732 lbs, penetration stopped (bit may be gone or gummed up wth clay), consulted with Virgil, decision made to trip for bit, pump heavy mud to get water down for trip (cannot haul water/mud off site anymore), rods tripped out, bit was gummed up with clay bit in good shape, clean bit and run back in hole. Rotary drill to 743 lbs. NIGHT: Preshift Inspection / Safety Mtg. Continue rotary drilling from 743 - 773 lbs. Beau arrived with new flow valve, install valve and test. Rods stuck, work free (swelling clays), rotary drill to 793 lbs. No accidents, injuries, incidents or environmental issues.
24	2/12/2015	793	883	90			Morrison	DAY: Pre-shift Inspection / Safety Mtg. Continue rotary drilling with PDC bit from 793 - 883 lbs. Replaced HQ chuck jaws, replace water swivel. Ran out of MI Wate, had to shut in BOP and stop operations until semi truck with Barite arrived (2 hours). NIGHT: Preshift Inspection / Safety Mtg. Continue with stand by for MI Wate (3 hours). Unload semi truck (11 pallets), mix barite, haul/empty sumps. Rods got stuck in clay, try to work free, no luck. Beau Marshall drove from Pagosa Springs to SLC. No accidents, injuries, incidents or environmental issues.
25	2/13/2015	883	997	114			Morrison	DAY: Preshift inspection / Satety Mtg. Rods are stuck at shift change. Work rods free. Drill 50ft and trip out for plugged bit. Trip in with tricone. Start reaming at 400ft in. Ream to 840lbs. NIGHT: Preshit inspection / Safety Mtg. Ream 100ft to bottom. Drill from 933lbs to 997lbs. Chain in drill head is slipping to bad to continue. Stop at 1:00am. No accidents, injuries, incidents or environmental issues.
26	2/14/2015	997	1142	145			Wanakah/Entrada	DAY: Drill Head broke down (chain skipping) at 1am on previous shift. Called Beau at 7am, he went to the DES yard in SLC and removed drill head from another rig. By 11am the spare head was on the road. Beau arrived with the drill head just after 6pm. Drill head was installed and tested. NIGHT: Preshift Inspection / Safety Mtg. Continue rotary drilling with 3-7/8"tricone bit from 997 - 1142 lbs. (The last 20ft, ROP slowed down and torque kept spiking/sticky). No accidents, injuries, incidents or environmental issues.
27	2/15/2015	1142	1192	50			Entrada	DAY: Preshift Inspection / Safety Mtg. Work stuck rods free. Trip out. All three cones are gone and left in hole. Pumping weighted mud while tripping to hold down artesian. Trip in with core barrel to drill out cones. Drill 10ft core sample. Trip out core barrel. NIGHT: Preshift Inspection / Safety Mtg. Finish trip out. Wait on PDC bit. Mix weighted mud and trip in. Ream to bottom. Drill to 1192lbs. No accidents, injuries, incidents or environmental issues.
28	2/16/2015	1192	1400	208			Basement	DAY: Preshift Inspection / Safety Mtg. Drill all shift. 140ft. NIGHT: Preshift Inspection / Safety Mtg. Drill to 1400lbs. Start tripping rods at 4:40 am. No accidents, injuries, incidents or environmental issues.

29	2/17/2015	1400	1404	4		Basement	DAY: Preshift Inspection / Safety Mtg. Finish tripping out of hole to remove PDC bit, pump heavy mud to kill artesian, trip in with HQ core barrel, went to pull tube (stuck from barite in bottom of hole), trip out, pump/clean hole, trip in to bottom, core drilled 4 ft to 1404 fbs, conducted a temperature run (23.4 C), Start logging operations at 5pm. NIGHT: Preshift Inspection / Safety Mtg. Continue logging, trip HQ rods partially out, pump weighted mud, finish tripping out of hole, continue logging. No accidents, injuries, incidents or environmental issues.
30	2/18/2015	1404	1404	0		Basement	DAY: Preshift Inspection / Safety Mtg. Finish logging hole. Pump kill weighted mud. Start tripping in liner. Artesian came back. Mix and pump more weighted. 13.6ppg. Finish tripping in liner. Mix cement and pump down. Clean equipment. No nightshift. Dayshift stayed till 11pm. No accidents, injuries, incidents or environmental issues.
31	2/19/2015	1404	1404	0		Basement	DAY: Preshift Inspection / Safety Mtg. Rig down site. Move all equipment off hole. Disassemble BOP. Start cleaning equipment. No accidents, injuries, incidents or environmental issues.
32	2/20/2015	1404	1404	0		Basement	DAY: Preshift Inspection / Safety Mtg. Continue rigging down, cleaning and packing equipment. Mixed and pumped cement (top Job) - 55 bags to 330 gallons of water, 15.4 ppg, pumped 467.5 gal down the outside of the 2-3/8" casing. Loaded unused drilling mud additives onto semi truck to be returned to vendor. Loaded 1 semi truck with drilling equipment. Will finish packing DES trailers and load another truck tomorrow. No accidents, injuries, incidents or environmental issues.
33	2/21/2015	1404	1404	0		Basement	DAY: Preshift Inspection / Safety Mtg. Continue / finish rigging down and packing. Loaded rig and last remaining equipment onto semi truck, cleaned up laydown area and did final walk thru inspection off all sites with Pagosa Verde. All DES equipment and personnel demobilized around 3pm from Pagosa Springs. No accidents, injuries, incidents or environmental issues.
34	2/22/2015	1404	1404	0		Basement	DAY: Drill Crews drove from Pagosa Springs to SLC (3 pick up trucks with trailers and 1 water truck). Semi truck unloaded in SLC. All equipment and personnel arrived safely in SLC yard around 4pm. Demob complete. No accidents, injuries, incidents or environmental issues.