



Water Monitoring Bore Construction Plumb Road Narrabri Contract: RFT 10003791



Well Completion Report

Plumb Road 1, 2 & 3

Issue	Revision	Author	Date
For Use	0	Kelvin Wuttke	17 Apr 17
Final – Comments and Glossary of Terms included	1	Kelvin Wuttke	5 May 17
Final Issue	2	Kelvin Wuttke	26 May 18





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Purpose & Introduction

This document presents the final well construction details and provides a record of the construction activities for three groundwater monitoring bores constructed at Plumb Road, Narrabri, NSW in February 2017.

The Department of Primary Industries – Water (DPI-Water) is responsible for the management of the state's groundwater resources. To support this function, DPI-Water maintains a network of groundwater bores spread across the state, which is used to monitor variation in groundwater pressure and quality.

DPI-Water is strategically increasing the spatial distribution of its groundwater monitoring network focussing on the NSW coal basins. Plumb Road is one of a number of locations where new bores are being installed in the Gunnedah Basin.

The objective of this project is to install three groundwater monitoring bores in three different formations hydraulically isolated from each other. Each bore is to yield groundwater representative of conditions (pressure and quality) in the target aquifer/formation and are to be suitable for long-term ongoing monitoring.

As the deeper bore was expected to intersect gas bearing zones, activities needed to comply with the design and construction specifications of the Code of Practice for Coal Seam Gas Well Integrity (Code of Practice) as well as the Minimum Construction Requirements for Water Bores in Australia (MCRWBA).

The contract to drill the wells was issued to TDC Drilling Pty Ltd on 7_{th} November 2016 and drilling commenced on 6_{th} February 2017.





Contract Particulars

2.1 Contract Details

Contract Name: Construction of Water Monitoring Bores

Contract Number: 10003791

Principal: Water Administration Ministerial Corporation

Principal Authorised Person: Chris Hague

Notices to Principal: 454-456 Peel St, Tamworth, NSW, 2340

Contractor Name: TDC Drilling Pty Ltd

Contactor Authorised Person: Howard Fletcher

Address: 16 Anvil Way, Welshpool, WA 6106





Well History

3.1 General Data

Well Names: Plumb Road 1, Plumb Road 2, and Plumb Road 3

Operator: DPI Water
Title Holder: DPI Water

Landowner: Forestry Corporation of NSW

Land Title: State Forest

District: Narrabri, New South Wales

Location: Latitude: -30° 32' 16.5091" S, Longitude: 149° 36' 24.9176" E

Latitude: -30.537919° S, Longitude: 149.606922° E

Map Grid of Australia (MGA94) Zone 55: Easting: 750106.52 Northing: 6618714.09

Elevation (Refer to Australian Height Datum AHD71): 257.7m

Well Specific Data:

Well Name	Plumb Road 1	Plumb Road 2	Plumb Road 3
Latitude (DMS)	-30° 32' 16.5543"	-30° 32' 16.5091"	-30° 32' 16.4652"
Longitude (DMS)	149° 36' 25.2557"	149º 36' 24.9176"	149° 36' 24.6019"
Latitude (Decimal)	-30.537932	-30.537919	-30.537907
Longitude (Decimal)	149.607016	149.606922	149.606834
AMG Easting	750115.5 m	750106.52 m	750098.14 m
AMG Northing	6618712.49 m	6618714.09 m	6618715.63 m
mGL – mRT	3.8m	2.15m	2.2m
Total Depth (mRT)	642	388	336
Total Cased Depth (mRT)	640.5	388	336
Date Spudded	6 Feb 2017	14 Feb 2017	18 Feb 2017
Rig Released	14 Feb 2017	18 Feb 2017	21 Feb 2017
Date well perforated	22 Feb 2017	23 Feb 2017	23 Feb 2017
Date Development Started	23 Feb 2017	23 Feb 2017	24 Feb 2017
Date Development Stopped	24 Feb 2017	26 Feb 2017	25 Feb 2017

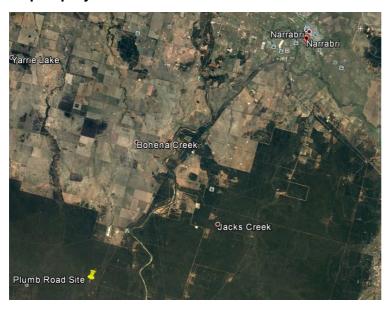




3.2 Location

The site is located on Plumb Road, approximately 30km South of Narrabri.

Map of project area



The location is close to the Newell Highway with good access. The area is surrounded by old drill leases in the Pilliga Forest area as shown by the following image.

Image of local area



The access off of the Newell Hwy is via approx. 700m of good quality gravel road.





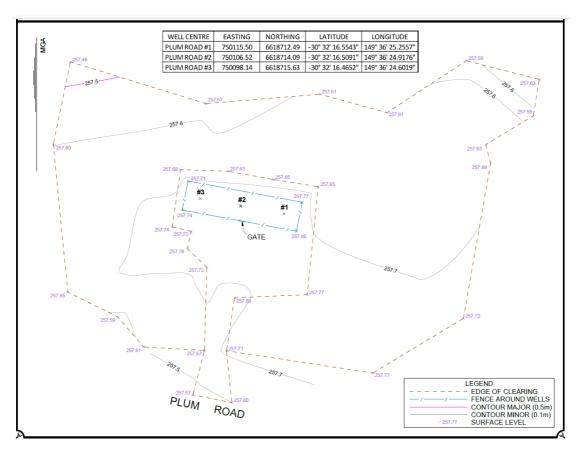
The approximate lease area to be cleared for the three well site at Plumb Rd was a $90m \times 45m$ area as shown in the following image:

Lease Area



Note: Approximately 8m x 8m area of the corner sections in SW and SE corners be left and not cleared to avoid clearing a couple of larger trees on the site.

The survey plan for the rehabilitated site is as shown in the following image (Refer Appendix 1).







3.3 Objectives

The Key success criteria for the project are:

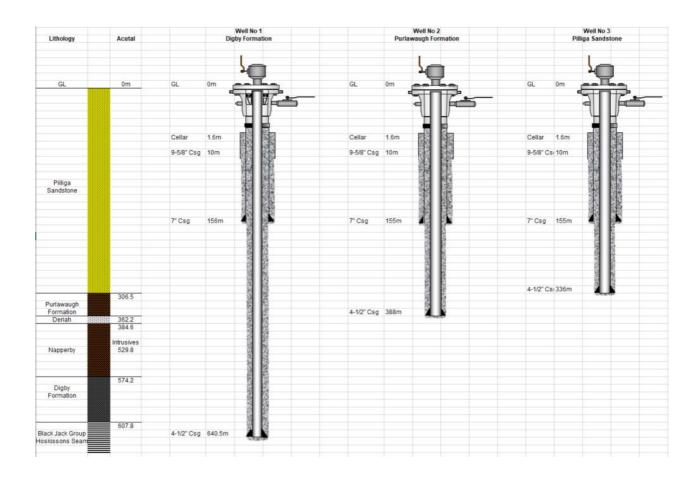
- Isolate the target formations
- Provide separate access to each of the target formations
- Produce the target formations to remove improve near wellbore permeability and demonstrate formation productivity.

3.4 Drilling Scope

Three wells to be drilled on the one site, each to access a different water aquifer. The wells achieved TD's and reached formations as per the following diagram.

The wells are vertical using a conductor and two string design cemented to surface to isolate the well monitoring formations. The purpose of the wells is to provide ongoing water monitoring and the water monitoring equipment itself will be installed into the well by others after the completion of the contract.

The following image shows the surface and production casing depths schematically along with formations based on wireline correlation.







3.5 Installation Summary

The three wells were drilled and cased in the order Plumb Road 1, Plumb Road 2, Plumb Road 3.

The drilling operations involved:

- Rigging up over well centre,
- Drill 12-1/4" conductor hole,
- Run 9-5/8" Conductor and grout in place,
- Drill 8-1/2" Surface hole,
- Run 7" Surface casing,
- Circulate cement to surface with a two stage cement job,
- Wait on cement,
- Drill out shoe track and drill 6-1/8" production hole to TD,
- Log well with electric wireline,
- Run 4-1/2" Casing,
- Circulate two stage cement job to surface; and
- Release drilling rig and rig down and move to next well.

Once all wells were drilled, a CBL was done on each well and the wells were then perforated using wireline conveyed 3-3/8" guns. Once the wells were perforated they were developed. Plumb Road 1 and 3 were air lifted while plumb road 2 was initially developed under free flow, but then air lifted to complete the development.

Air lifted development involved:

- Rig up flush-by rig over well,
- Run 3-3/8" tubing to depth of perforations,
- Close annular and circulate air to develop well
- Once developing compete, pull tubing,
- Rig down flushby and nipple up wellhead.





Well construction details for the three wells were similar and the designed construction can be summarised for all three wells as follows:

	Hole	Drill Fluid	Casing	Cement
Conductor	12-1/4" Hole	Water	9-5/8" BTC	Class A Grouted
Surface	8-1/2"	KCI Polymer	7" 23ppf BTC	Two stage, Class A cement
Section	Hole	8.7 ppg		Lead – 12.5ppg, Tail - 15.6ppg
Production	6-1/8"	KCI Polymer	4-1/2" 11.6 ppf	Two stage, Class A cement
Section	Hole	9.8 ppg	BTC	Lead – 12.5ppg, Tail - 15.6ppg

Refer to Appendix 8 for Daily Drilling Reports.

3.6 Drilling Data

3.6.1 Drilling Plant

Name: TDC Rig 10

Make: Drillmec

Model: 2005 Drillmec G55 R3

Mast: Static pull capacity 122,000 lbs

Engine: Cummins QSK 19-C, Diesel 6 cylinder DI Turbo

Pump: F500 pump & diesel drive, Cummins Diesel QSK-15 600 HP

Blow Out Preventer: Shenkai, 7-1/16", 3k Annular, 5k Double Gate rams

The drilling rig is TDC Rig 10. A summary of the main features includes:

- Drillmec G55 R3 (built 2005)
- 122,047lb pull capacity. (Note: highest anticipated hookload for these wells was 24,000lbs (dry air weight) for the 620m of 4.5" production casing on the Digby Formation well. This gave 98,000lbs overpull contingency).
- Handles Range 1, 2 or 3 tubulars
- 17,000 ft.lbs torque capacity
- 5000psi double gate plus annular Blow Out Preventer (BOP)
- Pason electronic drilling recorder
- F500 mud pumps





- 250bbl mud system
- Iron roughneck for hands free pipe makeup
- Pipe handler for hands-free lifting of the tubulars to the rig floor.

The rig (TDC Rig 10) is comprised of 15 loads which are moved with prime mover and requires an oversize permit for the rig carrier.

3.7 Well Construction Details

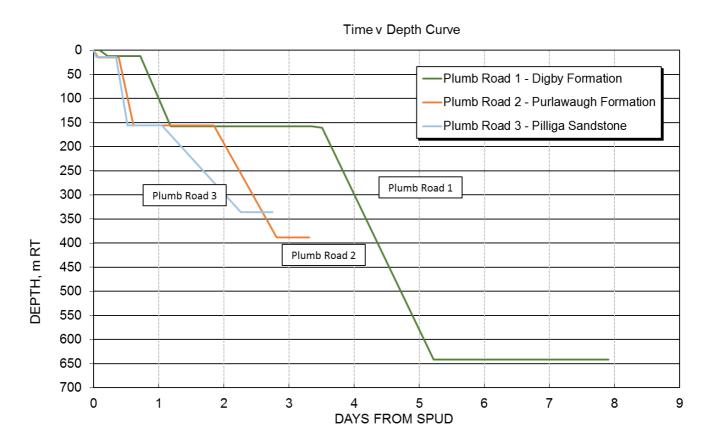
Well Name	Plumb Road 1	Plumb Road 2	Plumb Road 3
Conductor Hole	12-1/4" Hole to 12m	12-1/4" Hole to 12.5m	12-1/4" Hole to 14.3m
Conductor Casing	9-5/8" 36ppf BTC K55	9-5/8" 36ppf BTC K55	9-5/8" 36ppf BTC K55
Conductor Casing Depth (mGL)	11.1m	11.0m	12.3m
GR – RT	3.8m	2.15m	2.2m
Surface Hole Size	8-1/2"	8-1/2"	8-1/2"
Surface Hole Depth (mRT)	158m	156m	156m
Surface Casing	7" 23ppf N80 BTC	7" 23ppf N80 BTC	7" 23ppf N80 BTC
Surface Casing Depth (mRT)	156m	155m	155m
Production Hole Size (in)	6-1/8"	6-1/8"	6-1/8"
Production Hole Depth (mRT)	642 m	388 m	336 m
Production Casing	4-1/2" 11.6ppf K55 BTC	4-1/2" 11.6ppf K55 BTC	4-1/2" 11.6ppf K55 BTC
Production Casing Depth (mRT)	640.5 m	388 m	336 m





3.8 Time Depth Curves

Drilling Progress for the three wells is shown in the Time vs Depth curve below, showing time from spud of the conductor to release.



3.9 Development Data

All perforation intervals were selected from the Plumb Road 1 wireline log data based on geophysical assessment of the most productive sands at the various formation depths.

Kinetic Energy was the wireline company that carried out the perforations. A GR-CCL correlation run was carried out in each well and the GR correlated to the GR signature from the Plumb Road 1 log data at the agreed perforation depth. The perforation run was then carried out using the CCL to confirm depth against the (now correlated) GR-CCL log.

Perforations were 19gr HSC DP charges in 3-3/8" carriers at 60 deg phasing 6 spf.

Perforation Intervals:

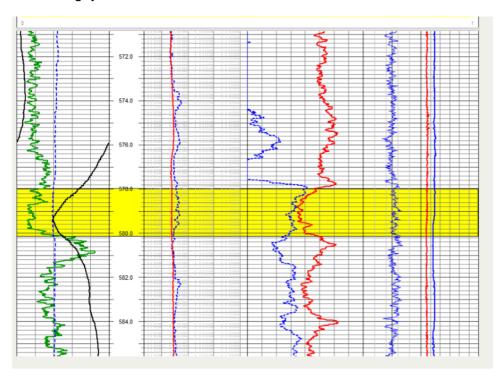
Well Name	Plumb Road 1 Plumb Road 2 Plumb R		Plumb Road 3
Formation	Digby Formation	Purlawaugh Formation	Pilliga Sandstone
Top Perforation (mRT)	578	359	305
Perforated Length m	3m	6m	6m
Bottom Perforation (mRT)	581	365	311



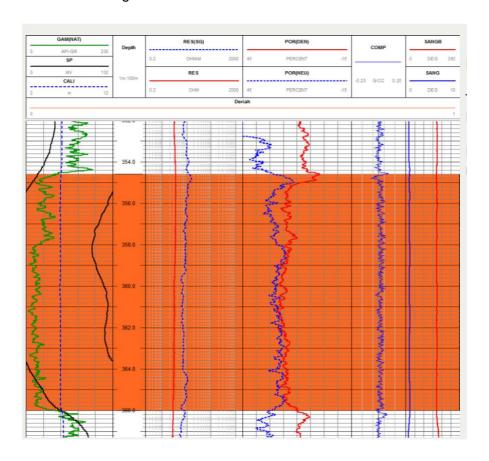


Images of the sections in the three wells indicating the sands selected for perforation and development are shown in the following images:

Plumb Road 1 – Digby Formation



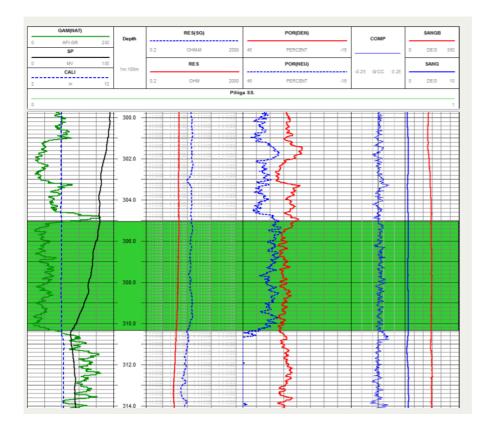
Plumb Road 2 – Purlawaugh Formation







Plumb Road 3 - Pilliga Sandstone



The wells were developed for a minimum of 24 hours and 3 casing volumes and until the fluid reached stabilised conditions.

The final fluid data was as follows:

Well Name	Plumb Road 1	Plumb Road 2	Plumb Road 3
Development Start	23 Feb 2017	23 Feb 2017	24 Feb 2017
Final Conductivity	14300	2220	220
Final Ph	9.1	8.3	8.7
Final Turbidity (NTU)	27.4	10.5	8.1





Stratigraphy and lithology

4.1 Hydrogeological Logging

The sampling regime for this location was designed to confirm the existing known formation tops and descriptions. The first well, into the Digby Formation, was the deepest well and intersects all the formations found in the following two wells on same site. Sampling was therefore carried out on the first well across all formations. The cutting samples were washed, inspected, stored in cuttings trays, and photographed by the hydrogeologist for inclusion in the final reports. The cuttings were then delivered to the DPI facility in Gunnedah.

The sample frequency was as follows:

- Once every 10 metres through the Pilliga Sandstone (from surface down to 300m),
- Once every 5 metres Approaching the end of the Pilliga Sandstone and for all subsequent formations (300m – 630m),
- Additional sampling at the interface of formations as required by the hydrogeologist to accurately determine formation tops or as requested by the Principal.

The formations expected were the Pilliga Sandstone, Purlawaugh Formation, Deriah Formation, Napperby Formation, Digby Formation, and the Black Jack group (Hoskissons Seam). It was also possible the well would encounter some volcanics (Garrawillah Formation) and this was indeed the case.

Refer to Appendix 3 for Geologists Daily Reports.

Refer to Appendix 4 for Bore Log details.

Refer to Appendix 5 for Photo Log details.

4.2 Wireline logging

The wireline logging contractor was Vause (Kinetic). The open hole logging suite included:

- Natural gamma
- Calliper
- Neutron porosity
- Density
- Spontaneous potential
- Resistivity
- Magnetic deviation
- Temperature

These logs, along with the hydrogeological logging, was then used to confirm the casing setting depths for the subsequent wells on site and the perforation depths for all three wells on site.





Refer to Appendix 7 for the composite wireline log.

Cased hole logging included Cement Bond Logs and correlated perforating runs. These were carried out immediately prior to developing the bore.

Cement bond logs can be found in Appendix 11.

4.3 Formation Tops

The following table shows formation depths based on mud logging picks and wireline formation tops and the basis for those tops.

Wireline tops are based on offset well correlation to the Bohena-4 and Bohena-5 well data.

	Field Form	ation Tops		Wireline Fo	rmation Tops	
Formation Name	MDRT	MDGL	Picks Based On	MDRT	MDGL	Picks Based On
	(m)	(m)		(m)	(m)	
Pilliga Sandstone	54	50.2	Cuttings	56	52.2	Wireline
Purlawaugh Fm	310	306.2	Cuttings/ROP	310.3	306.5	Wireline
Deriah Fm	365	361.2	Cuttings / ROP	366	362.2	Wireline
Napperby Fm	380	376.2	Cuttings	388.4	384.6	Wireline
Intrusive	535	531.2	Cuttings	533.6	529.8	Wireline
Digby Fm	578	574.2	Cuttings/ROP	578	574.2	Wireline
Black Jack Group	610	606.2	Cuttings	611.6	607.8	Wireline
Total Depth	642	638.2				

4.4 Detailed Log Data

Refer to Appendix 4 for Bore Log details.

Refer to Appendix 5 for Photo Log details.

Refer to Appendix 6 for Formation Sample Photos.

Refer to Appendix 7 for the composite wireline log.





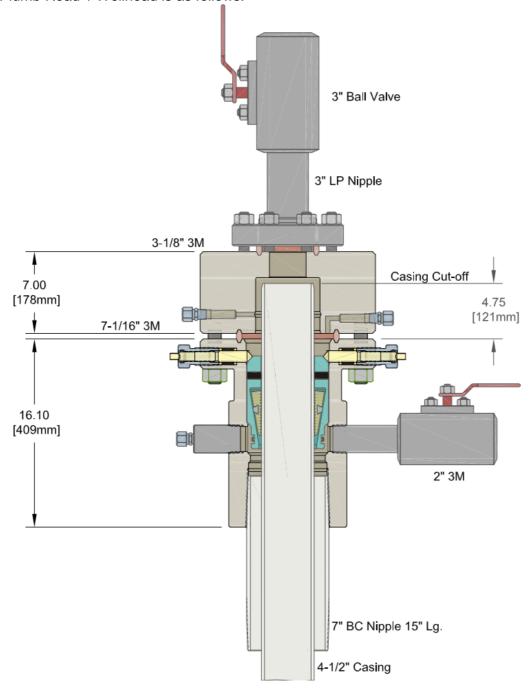
Well Details

5.1 Wellhead Design

The wellhead for Plumb Road wells were all API 6A compliant and rated to 3000 psi.

Plumb Road 1 is isolated in the annulus as it was designated as an Oil and Gas well. Plumb Road 2 and 3 have the capacity to be isolated at a later date if required, but were designated at water wells and are therefore isolated only by annular cement.

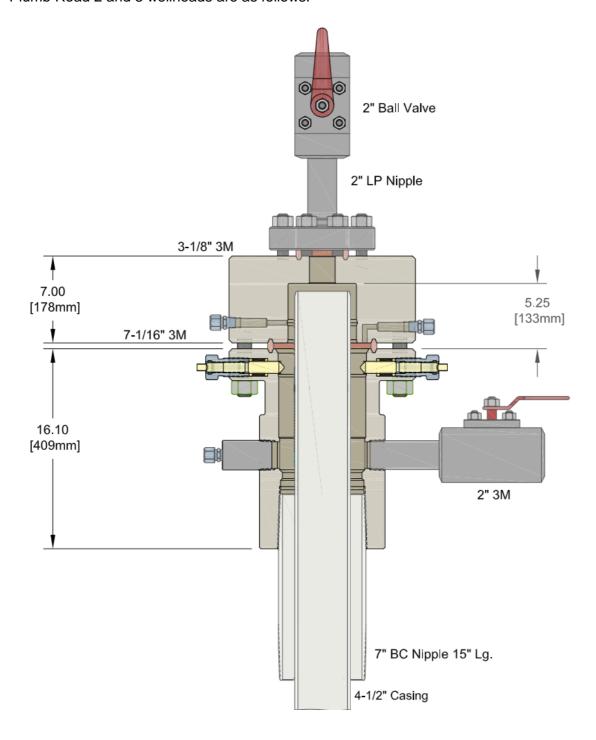
Plumb Road 1 Wellhead is as follows:







Plumb Road 2 and 3 wellheads are as follows:







5.2 Drilling Fluid

The drilling fluid for drilling these wells has been designed in conjunction with Australian Mud Company (AMC), who provided a Mud Engineer for the first well to ensure fluid quality.

A KCl gel based system was used in the wells. The fluid was recycled as much as possible between wells and the same mud system was used in all three wells on the pad for the following reasons:

- The well drilled under the Oil & Gas code would have used KCl, and is only 10 metres from the water bores on the pad,
- The well drilled under the Oil & Gas code is the first well and will be used to monitor losses through the upper sands and ensure no significant losses. This will confirm the fluid is appropriate for these sands,
- Changing fluids between holes causes unnecessary wastage, environmental exposure, unnecessary use of additional local water to make the new mud, and unnecessary safety risks as the crew manually handles a new batch of chemicals to be mixed.
- Full circulation pressure cementing methods will be used with spacers to clean the wellbore annulus during cementing,

Refer Appendix 9 for the Mud Engineering Reports.

5.3 Cementation

Good cementation was critical for well integrity for monitoring wells of the type contemplated by this project where failure to achieve zonal isolation will render the monitoring results invalid.

The drilling fluid, two stage cement design, centraliser design, shoe track, float shoe and plugs were all designed to ensure good quality cementing.

Halliburton provided cementing services for this project. Halliburton are the largest cementing services contractor to the oil & gas industry worldwide. Halliburton tested the cement slurries prior to mobilising to site and modelled the casing string to recommend ideal centraliser placement to achieve maximum standoff between the casing and wellbore during cementing to prevent channelling in the cemented annulus.

All three wells on location were logged with the cement bond log tool as part of the cased hole logging programme.

All cement jobs went well with full cement returns to surface on both casing jobs for all three wells.

Cement reports including cementing graphs are found in Appendix 10.

Cement bond logs can be found in Appendix 11.

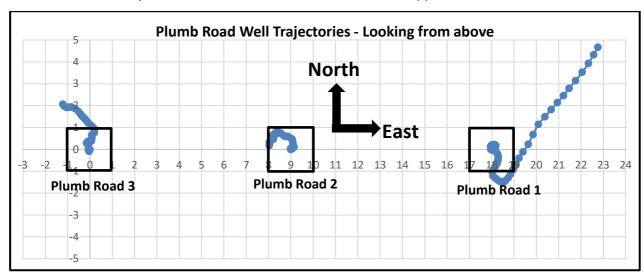


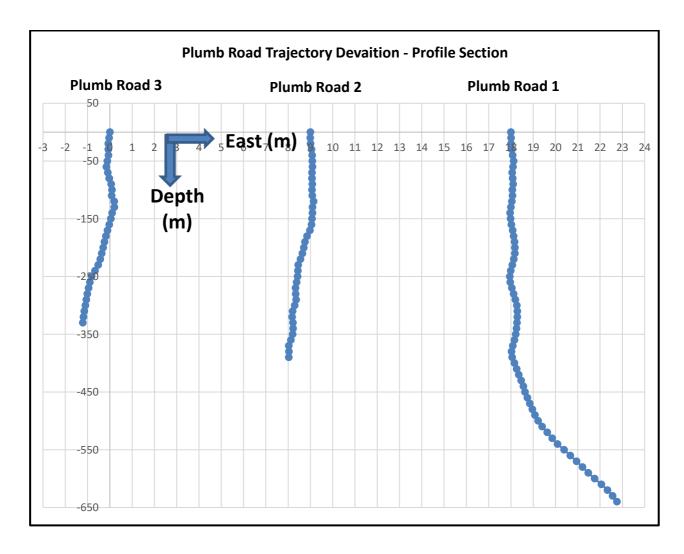


5.4 Verticality

Verticality is demonstrated via drop survey results and wireline 3 axis logging. The result of the logging demonstrates that the wells never approached to within less than 8m of any neighbouring wells as shown in the following images showing well trajectories.

The deviation survey data for the three wells can be found in Appendix 12.









5.5 Formation Integrity Testing

An FIT was conducted on 10th Feb 2017 on Plumb Road 1 with formation open from 158 to 161 mRT. FIT pressure reached was 430psi with a mud weight 9.1ppg, giving an equivalent mud weight (EMW) of 24.8ppg.

5.6 Wellsite Remediation

The following images from the REF Document show the wellsite before any clearing or other works began on site at Plumb Road:



Plate 2. Project area Site 2. Note minimal native regrowth.



Plate 3. Large log dump around the periphery of Site 2

During clearing top-soil and timber was stockpiled separately and after well construction was complete the topsoil was re-spread followed by the timber as required by the REF.





The following images show the site after well construction and rehabilitation works.





















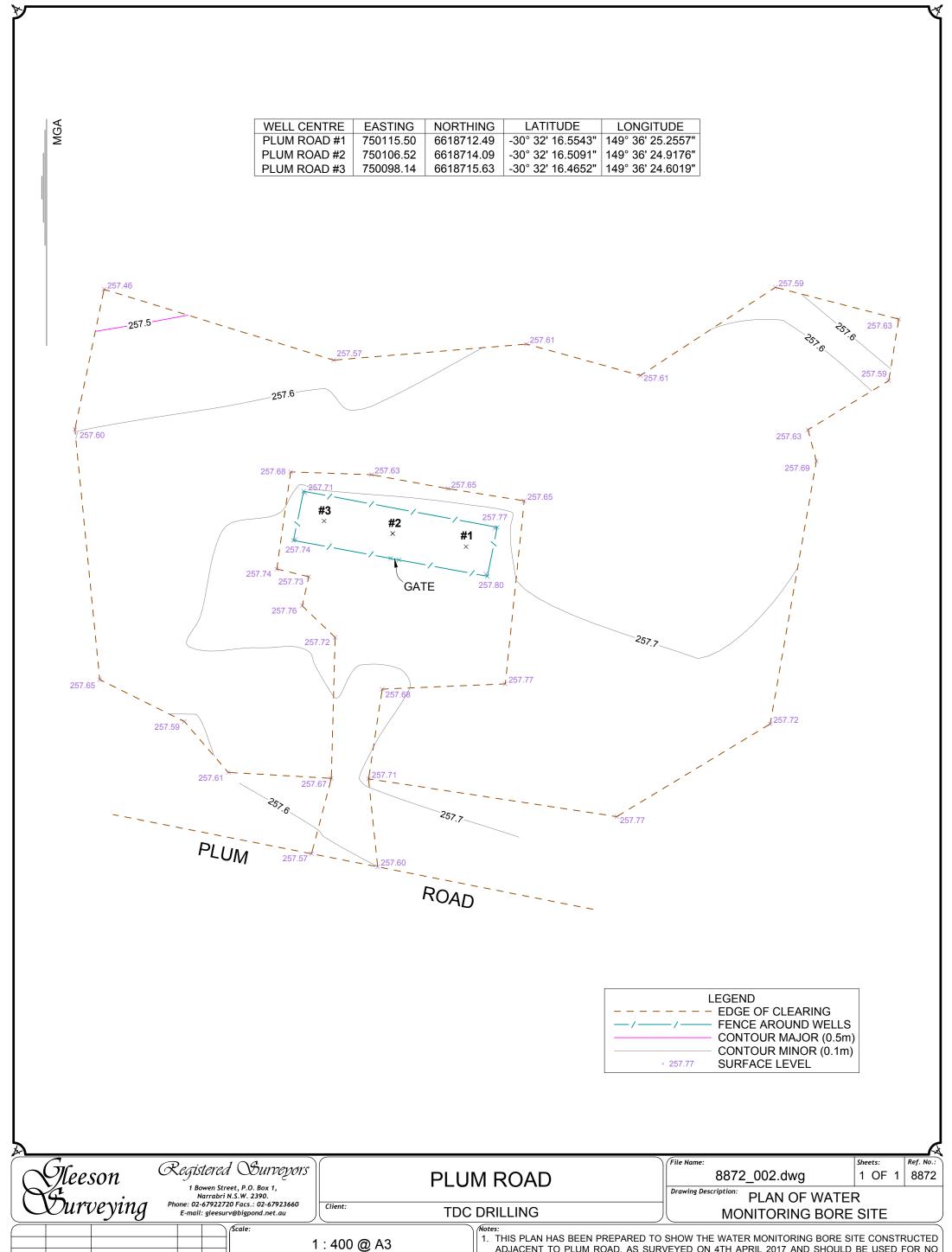
Glossary of Terms

TERM OR ACRONYM	MEANING /DEFINITION
API (RP)	American Petroleum Institute (Recommended Practice)
bbl	US barrel
ВНА	Bottom Hole Assembly
BOD	Basis of Design
ВОР	Blow Out Preventers
BTC	Buttress Conection
CBL	Cement Bond Log
CCL	Casing Collar Locator
DPI	Department of Primary Industries
DST	Drill Stem Test
EMW	Equivalent Mud Weight
ESD	Emergency Shutdown System
FIT	Formation Integrity Test
GL	Ground Level
GR	Gamma Ray
HAZOP	Hazard and Operability Study
HSE(S)	Heath Safety Environment (Security)
HWDP	Heavy Weight Drill Pipe
IADC	International Association of Drilling Contractors
ISO	Internal Standards Organisation
JV	Joint Venture
kPa	Kilo Pascal
LCM	Lost Circulation Materials
LOT	Leak Off Test
MASP	Maximum Anticipated Surface Pressure
MCRWBA	Minimum Construction Requirements for Water Bores in Australia
MDRT	Metres depth from Rotating Table
MDGL	Metres depth from Ground Level
MOC	Management of Change
MWD	Measurement While Drilling Tool
NACE	National Association of Corrosion Engineers
P & ID	
Ppf	Piping and Instrumentation Diagram
	Pounds per foot (reference to tubing weight)
ppg	Pounds per gallon
Psi(a)	Pounds per square inch (absolute)
QA/QC RA	Quality Assurance/Quality Control Radio Active
REF	Review of Environmental Factors
ROV	Remote Operated Vehicle
mRT	Metres relative to Rotating Table – Depth reference from rig reference point
scf	Standard cubic feet
SIMOPS	Simultaneous Operations.
TD	Total Depth
W/O	Work Over.
WOC	Wait on Cement
WSOG	Well Specific Operating Guidelines
WDP	Well Delivery Process.





Appendix 1 – Site Survey Plan



ADJACENT TO PLUM ROAD, AS SURVEYED ON 4TH APRIL 2017 AND SHOULD BE USED FOR NO Registered Surveyor OTHER PURPOSE. Datum. Α 18-04-17 Original Issue L.B. R.G. AHD 2. COORDINATES ARE GIVEN ON MAP GRID OF AUSTRALIA (MGA94) PROJECTION, IN ZONE 55. R.L.S fleeson 18/04/2017 Orientation MGA Revision Type Dr. By Ch. By Issue Date REFER TO AUSTRALIAN HEIGHT DATUM (AHD71).

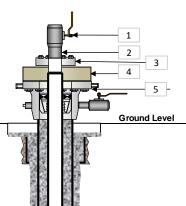




Appendix 2 – Downhole Diagrams



Plumb Road 1



156m CSG Shoe

TD: 642m

-30° 32' 16.5543" Well spudded: 6/02/2017 **Ground Level:** 257.7 Latitude: K B elevation: 261.5 Longitude: 149° 36' 25.2557" Last activity: 24/02/2017 m

ITEM No	DESCRIPTION	LTH (m)	DTH KB (m)	MIN LD.	MAX O.D. (m)
	KB to top of wellhead		2.70		
1	3" NPT Ball Valve	0.22	2.92		
2	3" NPT Nipple	0.09	3.01		
3	3-1/8" 3M x 3" NPT Adaptor Flange	0.06	3.07		
4	7-1/16" 3M x 3-1/8" 3M Seal Pocket Flange for 4-1/2" casing	0.18	3.25		
5	7" BTC x 7-1/16" 3M A Section, with 4-1/2" Slip & Seal assembly, 2" ball valve side outlets	0.41	3.66		
6					
7					
8					
9					

BRIEF HISTORY ON WELL

Plumb Road 1 Drilling - was spudded by TDC Rig 10, a Drillmec G55 R3 rig on the 6th February 2017. The well was drilled by TDC Pty Ltd on behalf of the NSW Government Operator, DPI Water, and drilled with the object of creating a water monitoring bore and obtaining water samples.

reached a final TD of 640.5m and was cased with 4-1/2", cemented to surface and perforated in the Digby formation.

Once rigged up over well centre a 12-1/4" hole was drilled to 12m and 1 joint of 9-5/8" casing run as a conductor and grouted in place. An 8-1/2" hole was drilled to 158m with a PDC bit and and water based KCL gel fluid. 7" Casing was run to 156m and cemented in place with a two stage cement job. After WOC, drilled out shoe track and casing shoe and 3m new formation. Conducted FIT 430psi with 9ppg mud to reach an EMW of 25ppg. 6-1/8" hole was drilled to the TD of 642m. The well was logged with Gamma Ray, Dual Density, caliper, resistivity, Neutron, SP, multiple depth resistivity, Temp. Mag Dev.

4-1/2" casing was run with a two joint shoe track to 641m and slip & seal installed. Circulated hole clean and pumped a two stage cement job with cement to surface. Rig down and release rig on 14 Feb 2017. Rig moved to Plumb Road 2.

Perforating and Developing: TDC Flushby rig mobilised and rigged up over location on 22 Feb 2017. Wireline unit rigged up and a CBL log carried out. The well was then perforated using the GR-CCL correlation log from 578 - 581 mRT. Wireline unit was rigged down and moved to Plumb road 2. The flushby unit rigged up its workfloor, flow cross and annular and ran 2-3/8" workstring into the well. Unload well with airpack at 95m. Continue to trip in and unload well at 419m. Continue to trip in and unload well at 577m 820psi. Rig down flushby carrier while continuing to circulate air and unload well. Monitored returned fluids and circulated for 26 hours until fluid charachteristics stable and sufficeient volume produced. Rig up flushby carrier and once approval given to cease developing well, pull out of hole workstring. Rig down and release flushby unit and move to Plumb Road 2. Install

305 - 311 Water zone accessed in offset well on pad
359 - 365 Water zone accessed in offset well on pad
Perforations
641m Casing Shoe

CASING	B DETAILS	CEMENTING DETAILS:
Size:	7"	The 7in surface casing was cemented on 8th February 2017. Pumped 20bbls fresh water spacer. Pump
Weight:	36 ppf	12.6bbls of lead cement at 12.5ppg, Pumped 7.1bbls of tail cement at 15.6ppg. Displaced with 19bbls fresh
Grade:	N80	water at 3bbls/min, bumped plug with 150psi increasing to 1500psi and held pressure for 5min. Continuous
5 4 6 4	450.0	returns during job, and cement returns after 16bbls into displacement. 3bbls cement to surface. Bleed back
Depth Set (m):	156.0	0.3bbls_floats.bolding
		INTERMEDIATE
CASING	DETAILS	CEMENTING DETAILS:

SURFACE

CASING	DETAILS	CEMENTING DETAILS:
Size:	4-1/2"	The 4-1/2in production casing was cemented on 14th February 2017, with 10bbls of gelled spacer at 9.8ppg
Weight:	11.0 ppi	pumped, followed by 45bbls of 12.5ppg lead slurry and 9.5bbls of 15.6ppg tail slurry. Displaced with 31.9 bbls
Grade:	NOO	of water, bumped plug with 820psi and increased to 1500psi. Continuous returns during job, 14 bbls cement to
Depth Set (m):	640.5	surface. Bleed back 0.2bbls. Floats holding

		PRODUCTION LINER		
CASING	DETAILS	CEMENT	ING DETAILS:	
Size:				
Weight:				
Grade:				
Depth Set (m):				
		ABANDONMENT PLUGS		
Plug	Top (mMD)	Co	omment	
FARI	MATION	FORMATION INTERVAL	GUN:	CHARGES:

TORMATION	(mMDRT) (Perforations)	SIZE	TYPE	SPF	TYPE	WT(g)
Pilliga Sandstone	56 - 310.3					
Purlawaugh Formation	310.3 - 366					
Deriah Formation	366 - 388.4					
Napperby Formation	388.4 - 533.6					
Intrusives	533.6 - 578					
Digby formation	578 - 611.6 (Perforated 578m - 581m)	3-3/8"	3-3/8"	3-3/8"	60° Phasing	19 gr
Black Jack Group	611.6 - 642 (TD)					
PRESSURE						
TEMPERATURE						
TACCED DEDTHS:	22 Eab 2017 CBI tag HIID 608 0m					

TAGGED DEPTHS:	22 Feb 2017, CBL tag HUD 608.9m	
ANNULUS FLUID:	Open Casing - Produced Water	
INDICATED STRING WEIGHT:		
CALCULATED STRING WEIGHT:		
LANDED WEIGHT:		
REMARKS:		
NOT TO SCALE	WELLSITE SUPERVISOR: Scott Hobday	
PROPOSED:	LAST WORKOVER	

NOT TO SCALE	WELLSITE SUPERVISOR: Scott Hobday		
PROPOSED:	LAST WORKOVER		
COMPLETION:	DRAFTED BY: Kelvin Wuttke	DATE:	25 March 2017
RE-COMPLETION:	REVISED BY:	DATE:	
OTHER:	CHECKED BY: S. Hann	DATE:	27 March 2017



Plumb Road 2

			Latitude:	-30° 32' 16.5091"	Well spudded: 15/02/2017	Ground	Level:	257.7	7	m
	<u>.</u> J		Longitude:	149° 36' 24.9176"	Last activity: 26/02/2017	K B ele	vation:	259.9)	m
		1 2 2	ITEM No		DESCRIPTION		LTH (m)	DTH KB (m)	MIN I.D.	Μ/ Ο. (n
		3			KB	to top of wellhead		1.30		<u></u>
	┪ ┡─	 4	1	2" NPT Ball Valve			0.14	1.45		
		5	2	2" NPT Nipple			0.13	1.58		
71		_	3	3-1/8" 3M x 2" NPT Adap	tor Flange		0.05	1.63		<u></u>
╡∐			4	7-1/16" 3M x 3-1/8" 3M S	eal Pocket Flange for 4-1/2" casing		0.18	1.81		<u></u>
- 2	(E	Ground Level	5	7" BTC x 7-1/16" 3M A S	ection, 2" ball valve side outlets		0.41	2.22		
9.53	55		6							
123	A 550		7							
	等 灰		8							
	55 SE V		9							
100	36				BRIEF HISTORY ON WELL					
16.63	98		Plumb Road 2 Dr	rilling - was spudded by T	DC Rig 10, a Drillmec G55 R3 rig on the 15th Febru	uary 2017. The we	Il was dril	led by TDC F	Pty Ltd o	วท

Plumb Road 2 Drilling - was spudded by TDC Rig 10, a Drillmec G55 R3 rig on the 15th February 2017. The well was drilled by TDC Pty Ltd on behalf of the NSW Government Operator, DPI Water, and drilled with the object of creating a water monitoring bore and obtaining water samples. The well reached a final TD of 388m and was cased with 4-1/2", cemented to surface and perforated in the Deriah formation.

The well reached a final TD of 388m and was cased with 4-1/2", cemented to surface and perforated in the Deriah formation.

Once rigged up over well centre a 12-1/4" hole was drilled to 12.5m and 1 joint of 9-5/8" casing run as a conductor and grouted in place. An 8-1/2" hole was drilled to 156m with a PDC bit and and water based KCL gel fluid. 7" Casing was run to 154.8m and cemented in place with a two stage cement job. After WOC, drilled out shoe track and drilled 6-1/8" hole to the TD of 388m. The well was logged with Gamma Ray, Resistivity, SP, multiple depth resistivity, Temp, Mag Dev.

4-1/2" casing was run with a single joint shoe track to 388m. Circulated hole clean and pumped a two stage cement job with cement to surface. Cut and dress casing stump and install wellhead. Rig down and release rig on 18 Feb 2017. Rig moved to Plumb Road 3.

Perforating: TDC Flushby rig skidded over and rigged up over location on 23 Feb 2017. Wireline unit rigged up and a CBL log carried out. The well was then perforated using the GR-CCL correlation log from 359 - 365 mRT. Wireline unit and flushby unit rigged down and moved to Plumb road 3.

Developing: Monitor production from the well which was free flowing to surface. On 25 Feb 2017 flushby unit skidded back over well and rigged up its workfloor, flow cross and annular and ran 2-3/8" workstring into the well. Trip in and unload well at 367m. Circulated well while monitoring returns until fluid charachteristics stable and sufficient volume produced. On 26 Feb 2017 once approval given to cease developing well, pull out of hole workstring. Rig down and release flushby unit. Install wellhead and close valve.

SURFACE

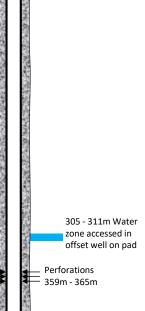
CEMENTING DETAILS:

DATE:

14 April 2017

LIAILS	OLINEITI II	10 02 170				
	The 7in surface casing was cemented on 16th February 2017. Pumped 20bbls fresh water spacer. Pump 12.6bbls of lead cement at 12.5ppg, Pumped 7.1bbls of tail cement at 15.6ppg. Displaced with 19.4bbls					
3 ppf						
30	fresh water at 3bbls/min, bumped plug with 180psi increasing to 1500psi and held pressure for 5min.					
54.8	Continuous returns during job, cement returns after 14.8bbls into displacement. 4.6bbls cement to surface.					
	INTERMEDIATE					
ETAILS						
1/2"						
.6 ppf						
55			si. Contin	uous retu	ırns during job,	4.7 bbls
88.0	cement to surface. Bleed back 0.2bbls. Floats holding)				
	PRODUCTION LINER					
ETAILS		NG DETAI	LS:			
	7					
	ABANDONMENT PLUGS					
Top (mMD)	Cor	mment				
TION				255		
detono		SIZE	TYPE	SPF	TYPE	WT(g
iustorie	310.3 - 366 {Perforated 359m - 365m (Reference				<u> </u>	
		3-3/8"	3-3/8"	3-3/8"	60° Phasing	19 g
Formation	depth - Plumb Rd 1 ()H Log)}					
	depth - Plumb Rd 1 OH Log)} 366 - 388 (TD)	0 0/0			†	
Formation	depth - Plumb Rd 1 OH Log)} 366 - 388 (TD)					
rmation						
rmation						
rmation	366 - 388 (TD)					
rmation						
rmation	366 - 388 (TD) 23 Feb 2017, CBL tag HUD 375.8m					
TURE ATURE WEIGHT:	366 - 388 (TD) 23 Feb 2017, CBL tag HUD 375.8m					
rmation URE ATURE	366 - 388 (TD) 23 Feb 2017, CBL tag HUD 375.8m					
TURE ATURE WEIGHT:	366 - 388 (TD) 23 Feb 2017, CBL tag HUD 375.8m					
URE ATURE WEIGHT:	23 Feb 2017, CBL tag HUD 375.8m Open Casing - Produced Water					
TURE ATURE WEIGHT:	23 Feb 2017, CBL taq HUD 375.8m Open Casing - Produced Water WELLSITE SUPERVISOR: Scott Hobday					
URE ATURE WEIGHT:	23 Feb 2017, CBL taq HUD 375.8m Open Casing - Produced Water WELLSITE SUPERVISOR: Scott Hobday LAST WORKOVER					
URE ATURE WEIGHT:	23 Feb 2017, CBL taq HUD 375.8m Open Casing - Produced Water WELLSITE SUPERVISOR: Scott Hobday	DATE:		1	April 2017	
	ETAILS 1/2" .6 ppf 55 8.0 ETAILS Top (mMD)	The 7in surface casing was cemented on 16th February 12.6bbls of lead cement at 12.5ppg, Pumped 7.1bbls fresh water at 3bbls/min, bumped plug with 180ps in Continuous returns during job, cement returns after 1 INTERMEDIATE	The 7in surface casing was cemented on 16th February 2017. Februar	The 7in surface casing was cemented on 16th February 2017. Pumped 2 ppf 12.6bbls of lead cement at 12.5ppg, Pumped 7.1bbls of tail cement at 15 fresh water at 3bbls/min, bumped plug with 180psi increasing to 1500psi 4.8 Continuous returns during job, cement returns after 14.8bbls into displace INTERMEDIATE ETAILS CEMENTING DETAILS: The 4-1/2in production casing was cemented on 18th February 2017, with pumped, followed by 21.3bbls of 12.5ppg lead slurry and 8.9bbls of 15.6jt bbls of water, bumped plug with 430psi and increased to 1500psi. Continuous cement to surface. Bleed back 0.2bbls. Floats holding PRODUCTION LINER ETAILS CEMENTING DETAILS: ABANDONMENT PLUGS Top (mMD) FORMATION INTERVAL (MMDRT) (Perforations) SIZE TYPE	The 7in surface casing was cemented on 16th February 2017. Pumped 20bbls freight 12.6bbls of lead cement at 12.5ppg, Pumped 7.1bbls of tail cement at 15.6ppg. If freight water at 3bbls/min, bumped plug with 180psi increasing to 1500psi and held Continuous returns during job, cement returns after 14.8bbls into displacement. 4 INTERMEDIATE ETAILS CEMENTING DETAILS: The 4-1/2in production casing was cemented on 18th February 2017, with 10bbls pumped, followed by 21.3bbls of 12.5ppg lead slurry and 8.9bbls of 15.6ppg tail sl bbls of water, bumped plug with 430psi and increased to 1500psi. Continuous retucement to surface. Bleed back 0.2bbls. Floats holding PRODUCTION LINER ETAILS ABANDONMENT PLUGS Top (mMD) FORMATION INTERVAL (mMDRT) {Perforations} Size Type Spr	The 7in surface casing was cemented on 16th February 2017. Pumped 20bbls fresh water space 12.6bbls of lead cement at 12.5ppg, Pumped 7.1bbls of tail cement at 15.6ppg. Displaced with 1 fresh water at 3bbls/min, bumped plug with 180psi increasing to 1500psi and held pressure for 5r Continuous returns during job, cement returns after 14.8bbls into displacement. 4.6bbls cement intermediate inte

CHECKED BY: S. Hann



388m Casing Shoe

OTHER:

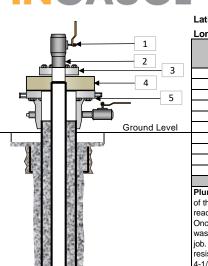
TD: 388m

155m CSG Shoe

CASING DETAILS



Plumb Road 3



155m CSG Shoe

Perforations

336m Casing Shoe

Ground Level: 257 7 Latitude: -30° 32' 16.4652" Well spudded: 19/02/2017 m K B elevation: 259.9 149° 36' 24.6019" Last activity: 25/02/2017 m Longitude:

ITEM No	DESCRIPTION	LTH (m)	DTH KB (m)	MIN I.D.	MAX O.D. (m)
	KB to top of wellhead		1.29		
1	2" NPT Ball Valve	0.14	1.43		
2	2" NPT Nipple	0.14	1.57		
3	3-1/8" 3M x 2" NPT Adaptor Flange	0.05	1.62		
4	7-1/16" 3M x 3-1/8" 3M Seal Pocket Flange for 4-1/2" casing	0.18	1.80		
5	7" BTC x 7-1/16" 3M A Section, 2" ball valve side outlets	0.41	2.21		
6					
7					
8					
9					

BRIEF HISTORY ON WELL

Plumb Road 2 Drilling - was spudded by TDC Rig 10, a Drillmec G55 R3 rig on the 19th February 2017. The well was drilled by TDC Pty Ltd on behalf of the NSW Government Operator, DPI Water, and drilled with the object of creating a water monitoring bore and obtaining water samples. The well

reached a final TD of 336m and was cased with 4-1/2", cemented to surface and perforated in the Piliga formation.

Once rigged up over well centre a 12-1/4" hole was drilled to 14.3m and 1 joint of 9-5/8" casing run as a conductor and grouted in place. An 8-1/2" hole was drilled to 156m with a PDC bit and and water based KCL gel fluid. 7" Casing was run to 155.2m and cemented in place with a two stage cement job. After WOC, drilled out shoe track and drilled 6-1/8" hole to the TD of 336m. The well was logged with Gamma Ray, Resistivity, SP, multiple depth resistivity, Temp, Mag Dev.

4-1/2" casing was run with a single joint shoe track to 336m. Circulated hole clean and pumped a two stage cement job with cement to surface. Cut and dress casing stump and install wellhead. Rig down and release rig on 21 Feb 2017.

Perforating: TDC Flushby rig skidded over and rigged up over location on 23 Feb 2017. Wireline unit rigged up and a CBL log carried out. The well was then perforated using the GR-CCL correlation log from 305 - 311 mRT. Wireline unit and flushby unit rigged down.

Developing: On 24 Feb 2017 flushby unit skidded back over well and rigged up its workfloor, flow cross and annular and ran 2-3/8" workstring into the well. Trip in and unload well at 312m. Circulated well while monitoring returns until fluid charachteristics stable and sufficient volume produced. On 25 Feb 2017 once approval given to cease developing well, pull out of hole workstring. Rig down and release flushby unit and moved to Plumb Rd 2. Install wellhead and close valve.

		SURFACE					
	DETAILS	CEMEN	ITING DETA	ILS:			
Size:		The 7in surface casing was cemented on 19th Febr					
Weight:		12.6bbls of lead cement at 12.5ppg, Pumped 7.1bb					
Grade:		water at 3bbls/min, bumped plug with 180psi increasing to 1500psi and held pressure for 5min. Continuous					
Depth Set (m):	155.2	returns during job, and cement returns after 14.8bbl	s into displac	cement. 5	.2bbls ce	ment to surfac	e. Bleed
		INTERMEDIATE					
CASING	DETAILS		ITING DETA				
	4-1/2"	The 4-1/2in production casing was cemented on 21					
	11.6 ppf	pumped, followed by 16.9bbls of 12.5ppg lead slurr bbls of water, bumped plug with 440psi and increas					
Grade:	K55	cement to surface. Bleed back 0.2bbls. Floats holdi		si. Contini	uous retui	ris during job,	7.0 DDIS
Depth Set (m):	336.0		rig				
		PRODUCTION LINER					
	DETAILS	CEMEN	ITING DETA	JLS:			
Size:		_					
Weight:		-∤					
Grade:		_					
Depth Set (m):		AD AND ON MENT DI LICO					
Plug	Top (mMD)	ABANDONMENT PLUGS					
Plug	TOP (MINID)		Comment				
FOR	MATION	FORMATION INTERVAL	GUI	N:		CHARGE	
	MATION	(mMDRT) {Perforations}	GU SIZE	N: TYPE	SPF	CHARGE TYPE	S: WT(g)
	MATION Sandstone	(mMDRT) {Perforations} 56 - 310,3			SPF		
Pilliga S		(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m			SPF 3-3/8"		
Pilliga S	Sandstone	(mMDRT) {Perforations} 56 - 310,3	SIZE	TYPE		TYPE	WT(g)
Pilliga S	Sandstone	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m	SIZE	TYPE		TYPE	WT(g)
Pilliga S	Sandstone	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m	SIZE	TYPE		TYPE	WT(g)
Pilliga S	Sandstone	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m	SIZE	TYPE		TYPE	WT(g)
Pilliga S	Sandstone	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m	SIZE	TYPE		TYPE	WT(g)
Pilliga S Purlawaug	Sandstone gh Formation	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m	SIZE	TYPE		TYPE	WT(g)
Pilliga S Purlawaug	Sandstone gh Formation	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m	SIZE	TYPE		TYPE	WT(g)
Pilliga S Purlawaug	Sandstone gh Formation SSURE ERATURE	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m	SIZE	TYPE		TYPE	WT(g)
Pilliga S Purlawaug PRE	Sandstone gh Formation SSURE ERATURE S:	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m (Reference depth - Plumb Rd 1 OH log)}	SIZE	TYPE		TYPE	WT(g)
Pilliga S Purlawaug PRE TEMPE TAGGED DEPTHS	Sandstone gh Formation SSURE ERATURE S:	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m (Reference depth - Plumb Rd 1 OH log)}	SIZE	TYPE		TYPE	WT(g)
Pilliga S Purlawaug PRE TEMPE TAGGED DEPTHS ANNULUS FLUID:	SSURE ERATURE S: IS IN	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m (Reference depth - Plumb Rd 1 OH log)}	SIZE	TYPE		TYPE	WT(g)
Pilliga S Purlawaug PRE TEMPE TAGGED DEPTH: ANNULUS FLUID. INDICATED STRII	Sandstone gh Formation SSURE ERATURE S: USB WEIGHT: USB WEIGHT:	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m (Reference depth - Plumb Rd 1 OH log)}	SIZE	TYPE		TYPE	WT(g)
Pilliga S Purlawaug PRE TEMPE TAGGED DEPTHS ANNULUS FLUID INDICATED STRII CALCULATED ST	Sandstone gh Formation SSURE ERATURE S: USB WEIGHT: USB WEIGHT:	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m (Reference depth - Plumb Rd 1 OH log)}	SIZE	TYPE		TYPE	WT(g)
Pilliga S Purlawaug PRE TEMPE TAGGED DEPTHIS ANNULUS FLUID INDICATED STRIF CALCULATED ST LANDED WEIGHT REMARKS:	Sandstone gh Formation SSURE ERATURE S: : : : : : : : : : : : : : : : : : :	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m (Reference depth - Plumb Rd 1 OH log)} 23 Feb 2017, CBL tag HUD 316.3m Open Casing - Produced Water	SIZE	TYPE		TYPE	WT(g)
Priliga S Purlawaug PRE TEMPE TAGGED DEPTH: ANNULUS FLUID. INDICATED STRII CALCULATED SIRII LANDED WEIGHT REMARKS: NOT 70	Sandstone gh Formation SSURE ERATURE S: USB WEIGHT: USB WEIGHT:	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m (Reference depth - Plumb Rd 1 OH log)} 23 Feb 2017, CBL tag HUD 316.3m Open Casing - Produced Water WELLSITE SUPERVISOR: Scott Hobday	SIZE	TYPE		TYPE	WT(g)
Priliga S Purlawaug PRE TEMPE TAGGED DEPTH: ANNULUS FLUID: INDICATED STRII CALCULATED ST LANDED WEIGHT REMARKS: NOT T. PROPOSED:	Sandstone gh Formation SSURE ERATURE S: : : : : : : : : : : : : : : : : : :	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m (Reference depth - Plumb Rd 1 OH log)} 23 Feb 2017, CBL tag HUD 316.3m Open Casing - Produced Water WELLSITE SUPERVISOR: Scott Hobday LAST WORKOVER	3-3/8"	TYPE	3-3/8"	TYPE 60° Phasing	WT(g)
Priliga S Purlawaug PRE TEMPE TAGGED DEPTH: ANNULUS FLUID. INDICATED STRII CALCULATED SIRII LANDED WEIGHT REMARKS: NOT 70	SSURE ERATURE S: ING WEIGHT: RING WEIGHT: F: O SCALE	(mMDRT) {Perforations} 56 - 310.3 310.3 - 336 (TD) {Perforated 305m - 311m (Reference depth - Plumb Rd 1 OH log)} 23 Feb 2017, CBL tag HUD 316.3m Open Casing - Produced Water WELLSITE SUPERVISOR: Scott Hobday	SIZE	TYPE	3-3/8"	TYPE	WT(g)





Appendix 3 – Geologist Daily Reports



DAILY GEOLOGICAL REPORT

Date:07 February 2017Rig:DrillmecG55Report Number:1Bit Diameter:12-1/4"

Report Period: 06:00 - 06:00 Hours **Last Casing:** 244 mm (9-5/8") @ 14.9 mMDRT

Spud Date: 1545 hrs 06 Feb. 2017

Days From Spud: 0.3 Progress: 16.2m

Depth @ 0600 Hrs: 16.2 mMDRT Mud Weight:

12.4 mMDGL **Mud Type**: WBM **Last Report Depth**: 0mMDRT

Ground Level: TBAm Last Survey: N/A

RT: 3.8 m Deviation: N/A

OPERATIONS SUMMARY

24 HOUR SUMMARY: Completed rig up. Made up 12-1/4" BHA and spud well at 1545hrs 06 February

2017. Drilled ahead to 16.2m. Circulated hole clean. Ran and cemented 9-

5/8" conductor casing.

CURRENT OPERATION @ Preparing to drill ahead in 8-1/2" surface hole

06:00 HRS (07-Feb-2017):

GEOLOGICAL SUMMARY

LITHOLOGY

INTERVAL: 0-10 mMDRT (3.8-6.2mMDGL)

SANDSTONE.

Dark yellowish orange to light brown, predominantly coarse to very coarse with common medium grained quartz grains, moderately sorted, sub-angular to sub-rounded, no cement, rare reddish brown silty matrix, occurring as loose disaggregated quartz grains, fair to good inferred porosity.

PROVISIONAL FORMATION TOPS*

	Actua	al Depths	Picks Based On
Formation Name	MDRT (m)	MDGL (m)	
Pilliga Sandstone	10	6.2	Cuttings
Purlawaugh Fm			
Deriah Fm			
Napperby Fm			
Intrusives			
Digby Fm			
Black Jack Group			
Total Depth			



DAILY GEOLOGICAL REPORT

Date: 08 February 2017 Rig: DrillmecG55

 Report Number:
 2
 Bit Diameter:
 8-1/2"

 Report Period:
 06:00 - 06:00 Hours
 Last Casing:
 178 mm (7") @ 156.02 mMDRT

Spud Date: 1545 hrs 06 Feb. 2017

Days From Spud: 1.3 Progress: 141.8m

 Depth @ 0600 Hrs:
 158 mMDRT
 Mud Weight:
 8.6ppg

 154.2 mMDGL
 Mud Type:
 WBM

154.2 mMDGL **Mud Type:** WBM **Last Report Depth:** 16.2mMDRT **Avg. ROP** 30 – 40 m/hr

Ground Level: Est. 258.2m AHD Last Survey: Miss run

RT: 3.8 m Deviation: N/A

OPERATIONS SUMMARY

24 HOUR SUMMARY: Drilled out of 9-5/8" casing. Drilled ahead in 8-1/2" from 16.2m to section TD at

158m. Circulate hole clean, dropped survey, pull out of hole.

CURRENT OPERATION @ 06:00 HRS (08-Feb-2017):

Land 7" casing at 156.02m MDRT and circulating prior to pumping cement

GEOLOGICAL SUMMARY

LITHOLOGY

INTERVAL: 10 - 30 mMDRT (6.2 – 26.2mMDGL)

Interbedded SANDSTONE and SILTY CLAYSTONE.

Grayish red, predominantly fine to medium grained with common coarse and minor very coarse quartz grains, moderately to poorly sorted, sub-angular to sub-rounded, no cement, non-calcareous, abundant reddish brown and off white argillaceous matrix, occurring as predominantly loose disaggregated grains, rare yellowish gray aggregates with abundant off-white argillaceous matrix, hard to very hard aggregates, poor to very poor visual porosity.

Rare SILTY CLAYSTONE: moderate to dark reddish brown, floating poorly sorted quartz grains, rare lithics, blocky, hard to very hard

INTERVAL: 30 - 50 mMDRT (26.2 – 46.2mMDGL)

Interbedded ARGILLACEOUS SANDSTONE and SILTY CLAYSTONE.

ARGILLACEOUS SANDSTONE: Light brown to dark reddish brown, predominantly fine-medium grained with common coarse, minor very coarse quartz grains and trace quartz pebbles, poorly sorted, sub-angular to sub-rounded, no cement, non-calcareous, abundant reddish brown and light gray argillaceous matrix, grading to claystone, dispersive, amorphous.

Trace SILTY CLAYSTONE: dark reddish brown, floating poorly sorted quartz grains, blocky, hard to very hard.

INTERVAL: 50 - 70 mMDRT (46.2 – 66.2mMDGL)

SANDSTONE

Light brown to dark reddish brown to pale yellowish orange, medium-coarse grained with minor very coarse grained quartz grains and trace quartz pebbles, moderately-poorly sorted, sub-angular to sub-rounded, no



cement, non-calcareous, localised vari-coloured argillaceous matrix increasing with depth, trace lithics, occurring as predominantly loose disaggregated grains, good visual porosity.

INTERVAL: 70 - 80 mMDRT (66.2 – 76.2mMDGL)

ARENACEOUS CLAYSTONE

Medium gray to moderate yellowish brown, arenaceous, with floating medium grained quartz grains, dispersive to soft, amorphous

INTERVAL: 80 - 140 mMDRT (76.2 – 136.2mMDGL)

SANDSTONE with minor interbedded ARGILLACEOUS SANDSTONE, SANDSTONE, SILTSTONE & CLAYSTONE.

SANDSTONE: light olive gray, very fine to fine grained quartz aggregates, well sorted, sub-rounded, siliceous cement, trace white argillaceous matrix, slightly calcareous, very hard, nil to poor visual porosity. Loose quartz grains, predominantly medium grained with common coarse, and rare very coarse quartz grains and quartz pebbles, moderately sorted, sub-angular to sub-rounded, no cement, non-calcareous, rare to minor dark yellowish orange argillaceous matrix, fair to good inferred porosity.

SILTSTONE: moderate to dark reddish brown, blocky to sub-fissile, very hard

CLAYSTONE: medium grey to light olive gray, soft, amorphous.

ARGILLACEOUS SANDSTONE: dark yellowish orange to moderate yellowish brown, predominantly medium grained with common coarse, and rare very coarse quartz grains, moderately sorted, sub-angular to sub-rounded, no cement, non-calcareous, abundant dark yellowish orange argillaceous matrix grading to claystone in part.

ARENACEOUS CLAYSTONE: medium gray to moderate yellowish brown, arenaceous, with floating medium grained quartz grains, dispersive to soft, amorphous.

INTERVAL: 140 - 158 mMDRT (136.2 – 154.2mMDGL)

SANDSTONE

SANDSTONE: Light olive gray to moderate yellowish brown, predominantly medium to coarse grained quartz grains, trace quartz pebbles, moderately sorted, sub-angular to sub-rounded, no cement, trace to rare white argillaceous matrix, occurring as loose guartz, good visual porosity

PROVISIONAL FORMATION TOPS*

	Actua	al Depths	Picks Based On
	MDRT	MDGL	
Formation Name	(m)	(m)	
Pilliga Sandstone	54	50.2	Cuttings
Purlawaugh Fm			
Deriah Fm			
Napperby Fm			
Intrusive	es		
Digby Fm			
Black Jack Group			
Total Depth			

REMARKS

Pilliga formation top changed to reflect interpreted depth based on cuttings

WELLSITE GEOLOGISTS

Andrea Strand/Adam Cruickshank



DAILY GEOLOGICAL REPORT

Date: 09 February 2017 Rig: DrillmecG55

Report Number: 3 Bit Diameter: 8-1/2"

Report Period: 06:00 - 06:00 Hours **Last Casing:** 178 mm (7") @ 156.02 mMDRT

Spud Date: 1545 hrs 06 Feb. 2017

Days From Spud: 2.3 **Progress:** 0m

 Depth @ 0600 Hrs:
 158 mMDRT
 Mud Weight:
 8.6ppg

 154.2 mMDGL
 Mud Type:
 WBM

Last Report Depth:158mMDRTAvg. ROPN/A

Ground Level: Est. 258.2m AHD **Last Survey:** Miss run **RT:** 3.8 m **Deviation:** N/A

OPERATIONS SUMMARY

24 HOUR SUMMARY: Ran 7" casing to 156.02m. Rig up and cement as per program. Wait on

cement.

CURRENT OPERATION @

Pressure testing BOP

06:00 HRS (09-Feb-2017):

GEOLOGICAL SUMMARY

LITHOLOGY

No new lithology

PROVISIONAL FORMATION TOPS*

	Actual Depths		Picks Based On
Formation Name	MDRT (m)	MDGL (m)	
Pilliga Sandstone	54	50.2	Cuttings
Purlawaugh Fm			
Deriah Fm			
Napperby Fm			
Intrusives			
Digby Fm			
Black Jack Group			
Total Depth			

REMARKS

Pilliga formation top changed to reflect interpreted depth based on cuttings

WELLSITE GEOLOGISTS

Andrea Strand/Adam Cruickshank



DAILY GEOLOGICAL REPORT

Date: 10 February 2017 Rig: DrillmecG55

Report Number: 4 Bit Diameter: 6-1/8"

Report Period: 06:00 - 06:00 Hours **Last Casing:** 178 mm (7") @ 156.02 mMDRT

Spud Date: 1545 hrs 06 Feb. 2017

Days From Spud: 3.3 Progress: 24m

 Depth @ 0600 Hrs:
 182m mMDRT
 Mud Weight:
 9.0ppg

 178.2 mMDGL
 Mud Type:
 WBM

Last Report Depth: 158mMDRT Avg. ROP N/A

Ground Level: Est. 258.2m AHD **Last Survey:** 130m **RT:** 3.8 m **Deviation:** 1/4Deg

OPERATIONS SUMMARY

24 HOUR SUMMARY: Rigged up and pressure tested well head, BOPs and choke mainfold.

Prepared BHA and TIH. Ran wire line survey – 1/4Deg @ 130m.

CURRENT OPERATION @ 06:00 HRS (10-Feb-2017):

Drilling ahead in 6-1/8" hole

06:00 HRS (10-Feb-2017):

GEOLOGICAL SUMMARY

LITHOLOGY

INTERVAL: 158 - 180 mMDRT (154.2 – 176.2mMDGL)

SANDSTONE

Light olive grey, translucent grains, upper fine to very coarse quartz grains, predominantly medium to coarse, minor gravel sized quartz grains, very poor to poor sorting, predominantly sub-angular, minor sub-rounded, minor dark yellowish orange stained quartz grains, minor dark lithics, common off white argillaceous material dispersed throughout sample - likely matrix in origin, rare black lustrous lignitic coal fragments with conchoidal fracture, dominantly disaggregated, trace aggregate with strong siliceous cementation and minor off white argillaceous matrix, fair to good inferred porosity. Minor cement contamination in sample.

PROVISIONAL FORMATION TOPS*

	Actua	l Depths	Picks Based On
	MDRT	MDGL	
Formation Name	(m)	(m)	
Pilliga Sandstone	54	50.2	Cuttings
Purlawaugh Fm			
Deriah Fm			
Napperby Fm			
Intrusives			
Digby Fm			
Black Jack Group			
Total Depth			



REMARKS

WELLSITE GEOLOGISTS

Andrea Strand/Adam Cruickshank



DAILY GEOLOGICAL REPORT

Date: 11 February 2017 Rig: DrillmecG55

Report Number: 5 Bit Diameter: 6-1/8"

Report Period: 06:00 - 06:00 Hours **Last Casing:** 178 mm (7") @ 156.02 mMDRT

Spud Date: 1545 hrs 06 Feb. 2017 **Days From Spud:** 4.3 **Progress:** 288.0 m

 Depth @ 0600 Hrs:
 470.0 mMDRT
 Mud Weight:
 9.7 ppg

 466.2 mMDGL
 Mud Type:
 WBM

Last Report Depth: 182.0 mMDRT Avg. ROP N/A

Ground Level: Est. 258.2 mAHD **Last Survey:** 244.0 m **RT:** 3.8 m **Deviation:** 1/2 Deg

OPERATIONS SUMMARY

24 HOUR SUMMARY: Drilled 6-1/8" hole from 182.0 m to 470.0 mMDRT.

CURRENT OPERATION @ 06:00 HRS (11-Feb-2017):

Drilling ahead 6-1/8" hole at 470.0 mMDRT.

GEOLOGICAL SUMMARY

LITHOLOGY

INTERVAL: 180 - 190 mMDRT (176.2 – 186.2mMDGL)

SANDY CLAYSTONE.

SANDY CLAYSTONE: Light olive gray, arenaceous, with minor floating predominantly medium grained and rare coarse to very coarse quartz grains, dispersive, common to abundant carbonaceous specks, amorphous.

INTERVAL: 190 - 310 mMDRT (186.2 – 306.2 mMDGL)

MASSIVE SANDSTONE with minor SILTSTONE, CLAYSTONE & COAL interbeds.

SANDSTONE: Light olive grey, translucent grains, fine to very coarse quartz grains, predominantly fine to medium, rare gravel sized quartz grains, moderate to poor sorting, predominantly sub-angular, minor sub-rounded, slightly calcareous, minor to common white to off white argillaceous material dispersed throughout sample - likely matrix in origin, rare dark lithics, rare to minor carbonaceous specks, occurring as disaggregated loose quartz grains, fair to good inferred porosity.

INTERVAL: 310 - 335 mMDRT (306.2 – 331.2mMDGL)

SANDY CLAYSTONE with minor SILTSTONE, SANDSTONE and COAL interbeds:

CLAYSTONE: light olive gray, slightly arenaceous, with minor floating predominantly fine-medium grained and trace coarse quartz grains, dispersive, common carbonaceous specks, amorphous.

ARENACEOUS SILTSTONE: medium olive grey to medium dark grey, common to abundant arenaceous material and grading to a SILTY SANDSTONE in part, common to locally abundant thin coal laminations, hard to very hard, blocky to sub-blocky, minor sub-fissile.

COAL: black, sub-vitreous, generally occurring in thin laminations with SILTSTONE, moderately hard to hard, fissile, occasionally hackly.

SANDSTONE: light olive grey, very fine to medium quartz grained aggregates, predominantly fine to medium grains, rare to minor loose coarse grains, generally well sorted, sub-angular to sub-rounded,



common strong siliceous cement, rare weak calcareous cement, minor off white to light olive grey argillaceous matrix, predominantly occurring as loose disaggregated grains, very hard where aggregates, poor visual porosity.

INTERVAL: 335 - 345 mMDRT (331.2 – 341.2 mMDGL)

INTERBEDDED SILTSTONE and CLAYSTONE

SILTSTONE: Olive gray to medium dark gray, slightly carbonaceous, firm to moderately hard, blocky CLAYSTONE: light olive gray, slightly arenaceous, with rare floating quartz grains, dispersive, common carbonaceous specks, amorphous.

INTERVAL: 345 - 355 mMDRT (341.2 – 351.2 mMDGL)

Interbedded CLAYSTONE, SILTSTONE, SANDSTONE and COAL

ARENACEOUS SILTSTONE: medium olive grey to medium dark grey, common to abundant arenaceous material and grading to a SILTY SANDSTONE in part, common to locally abundant thin coal laminations, hard to very hard, blocky to sub-blocky, minor sub-fissile.

COAL: black, sub-vitreous, generally occurring in thin laminations with SILTSTONE, moderately hard to hard, fissile, occasionally hackly.

SANDSTONE: light olive grey, very fine to medium quartz grained aggregates, predominantly fine to medium grains, rare to minor loose coarse grains, generally well sorted, sub-angular to sub rounded, common strong siliceous cement, rare weak calcareous cement, minor off white to light olive grey argillaceous matrix, predominantly occurring as loose disaggregated grains, very hard where aggregates, poor visual porosity.

CLAYSTONE: light grey, pulverised, sticky, amorphous/ dispersive.

INTERVAL: 355 - 365 mMDRT (351.2 – 361.2 mMDGL)

MASSIVE SANDSTONE: Light olive grey, commonly frosted grains, fine to very coarse quartz grains, minor fractured gravel sized particles, predominantly medium to coarse grains, poor to very poorly sorted, angular to sub-angular and commonly due to bit fracturing, minor sub-rounding, common moderately strong siliceous cement in rare aggregates, trace weak pyritic cement, common to abundant off white argillaceous matrix (washing out of sample), minor to common lithics, rare dark volcanic fragments, generally disaggregated, rare very hard aggregates, fair to good inferred porosity.

INTERVAL: 365 - 380 mMDRT (361.2 – 376.2 mMDGL)

SANDSTONE grading with depth to CLAYSTONE & SILTSTONE.

SANDSTONE: Light olive grey, commonly frosted grains, fine to very coarse quartz grains, minor fractured gravel sized particles, predominantly medium to coarse grains, poor to very poorly sorted, angular to sub-angular and commonly due to bit fracturing, minor sub-rounding, common moderately strong siliceous cement in rare aggregates, trace weak pyritic cement, common to abundant off white argillaceous matrix (washing out of sample), minor to common lithics, generally disaggregated, rare very hard aggregates, fair to good inferred porosity.

CLAYSTONE: off white, sticky and amorphous, likely sourced from SANDSTONE matrix or as interbedded laminations.

SILTSTONE: medium dark grey to olive black, arenaceous in part, locally common carbonaceous micro-laminations and specks, very hard, sub-blocky to blocky, sub-fissile in part.

INTERVAL: 380 - 470 mMDRT (376.2 – 466.2 mMDGL)

Interbedded SILTSTONE & SANDSTONE with thin COAL stringers

SANDSTONE: off white to light grey, very fine to coarse grains, well sorted aggregates with either predominantly medium to coarse grains or predominantly fine quartz grains, sub-rounded to sub-angular grains, common strong silicic cement and minor calcareous cement, common to locally abundant off white



argillaceous matrix, locally common carbonaceous material, minor lithics, very hard aggregates, poor to fair visible porosity.

SILTSTONE: medium dark grey, minor brownish black, common to locally abundant very fine to fine quartz grains and grading to a SILTY SST in part where brownish black, common to locally abundant carbonaceous material, very hard, sub-blocky to sub-fissile.

CLAYSTONE: pulverised and likely SST matrix sourced.

PROVISIONAL FIELD FORMATION TOPS*

	Actua	I Depths	Picks Based On
	MDRT	MDGL	
Formation Name	(m)	(m)	
Pilliga Sandstone	54	50.2	Cuttings
Purlawaugh Fm	310	306.2	Cuttings/ROP
Deriah Fm	365	361.2	Cuttings / ROP
Napperby Fm	380	376.2	Cuttings
Intrusives			
Digby Fm			
Black Jack Group			
Total Depth			

REMARKS

None

WELLSITE GEOLOGISTS

Andrea Strand/Adam Cruickshank



DAILY GEOLOGICAL REPORT

Date: 12 February 2017 Rig: DrillmecG55

Report Number: 6 Bit Diameter: 6-1/8"

Report Period: 06:00 - 06:00 Hours **Last Casing:** 178 mm (7") @ 156.02 mMDRT

Spud Date: 1545 hrs 06 Feb. 2017 **Days From Spud:** 5.3 **Progress:** 172.0 m

 Depth @ 0600 Hrs:
 642.0 mMDRT
 Mud Weight:
 9.8 ppg

 638.2 mMDGL
 Mud Type:
 WBM

Last Report Depth: 470.0 mMDRT Avg. ROP N/A

Ground Level: Est. 258.2 mAHD Last Survey: 548 mMDRT

RT: 3.8 m **Deviation**: 3.0Deg

OPERATIONS SUMMARY

24 HOUR SUMMARY: Drilled 6-1/8" hole from 470.0m to well TD at 642 mMDRT.

Circulated and conditioned well. Rig repair.

CURRENT OPERATION @ 06:00 HRS (11-Feb-2017):

Continuing with rig repair/maintenance

GEOLOGICAL SUMMARY

LITHOLOGY

INTERVAL: 470.0 – 515 mMDRT (466.2 – 511.2 mMDGL)

SANDY SILTSTONE with minor interbedded SANDSTONE.

SANDSTONE: light olive grey, off white, very fine to fine grained, well sorted, generally sub-angular, common strong siliceous cement, rare weak calcareous material, common off white argillaceous matrix, common to abundant light olive grey silty matrix and commonly grades to / interbedded with SANDY SILTSTONE: olive grey, medium dark grey, common carbonaceous and micaceous specks, quartzite micro-laminations in part, minor lithics, firm to very hard aggregates, sub-fissile to blocky

INTERVAL: 515 - 525 mMDRT (511.2 – 521.2 mMDGL)

SILTSTONE: olive black to greyish black to black, commonly argillaceous, arenaceous in part with common floating quartz grains, common carbonaceous material, moderately hard to hard, blocky to subfissile.

INTERVAL: 525 - 535 mMDRT (521.2 – 531.2 mMDGL)

Interbedded SANDSTONE with minor SANDY SILTSTONE.

SANDSTONE: off-white to medium light gray, predominantly medium to coarse-grained, trace very coarse quartz grains, translucent and opaque quartz, moderately sorted, sub-angular, common to abundant, argillaceous matrix, strongly calcareous, occurring predominantly as loose quartz grains, poor to fair inferred porosity.

SANDY SILTSTONE: olive grey, medium dark grey, common carbonaceous and micaceous specks, firm to very hard aggregates, sub fissile to blocky.



INTERVAL: 535.0 - 578.0 mMDRT (531.2 – 574.2 mMDGL)

Intrusive VOLCANICS

VOLCANICS: predominantly occurring as loose dark greenish gray, porphyritic, rare olivine phenocrysts, trace biotite, common to abundant calcite - likely as fracture fill, tight, conchoidal fracture. Trace SILTSTONE: olive grey, medium dark grey, common carbonaceous and micaceous specks, firm to very hard aggregates, sub-fissile to blocky.

Trace SANDSTONE: off white/off-white, fine-medium grained, well sorted, sub-angular to sub-rounded, minor to common argillaceous matrix, slightly calcareous, fair inferred porosity. Trace pale yellow, opaque, gravel sized quartz grains some with adjacent calcite, possible vein material. Trace reddish brown coarse to very coarse grained aggregates, well sorted, sub-angular, common pale yellowish brown to reddish brown argillaceous matrix, non-calcareous, very hard, poor visual porosity. Trace gravel sized quartz grains with rare to minor yellowish reddish brown argillaceous matrix

INTERVAL: 578.0 - 610.0 mMDRT (574.2 – 606.2 mMDGL)

CONGLOMERATIC sequence.

CONGLOMERATE: occurring as varicolored chips (dominantly milky white and orange/reddish brown) of quartzite with conchoidal fracture. White to off white quartzite, with very fine grained disseminated pyrite. Light gray quartzite.

SANDSTONE: as above slightly to moderately calcareous, common white-off white argillaceous matrix. Trace VOLCANICS: as above (possible cavings)

Trace ARENACEOUS SILTSTONE: olive grey to dark yellowish brown, common carbonaceous and micaceous specks, firm to very hard aggregates, sub-fissile to blocky. (possible cavings).

INTERVAL: 610.0 - 642.0 mMDRT (606.2 – 638.2 mMDGL)

Interbedded SILTSTONE, SANDSTONE, COAL and TUFF.

COAL: olive black, greyish black, locally sub-vitreous in laminations, common silty / earthy and grading to a CARBONACEOUS SILTSTONE, hard to very hard, sub-conchoidal where vitreous, hackley in part, generally sub-blocky to sub-fissile.

TUFF: off white to greenish grey, waxy / plastic, firm to hard, delaminating, blocky.

SILTSTONE: greyish black, commonly arenaceous material, common thin carbonaceous microlaminations, hard to very hard, sub-blocky.

SANDSTONE: off white to light olive grey, fine to medium grained, predominantly fine quartz grained, sub-angular, minor sub-rounded, common strong siliceous cement, trace calcareous material, common to abundant off white argillaceous matrix, locally common thin carbonaceous / coaly microlaminations and silty layering, very hard aggregates, very poor visual porosity.

PROVISIONAL FIELD FORMATION TOPS*

	Actua	I Depths	Picks Based On
	MDRT	MDGL	
Formation Name	(m)	(m)	
Pilliga Sandstone	54	50.2	Cuttings
Purlawaugh Fm	310	306.2	Cuttings/ROP
Deriah Fm	365	361.2	Cuttings / ROP
Napperby Fm	380	376.2	Cuttings
Intrusives	535	531.2	Cuttings
Digby Fm	578	574.2	Cuttings/ROP
Black Jack Group	610	606.2	Cuttings
Total Depth	642	638.2	



REMARKS

The Plumb Road-1 well reached a Total Depth of 642.0 mMDRT (638.2 mMDGL) at 2100 hrs $11^{\rm th}$ February 2017.

WELLSITE GEOLOGISTS

Andrea Strand/Adam Cruickshank



Well Completion Report



Appendix 4 – Bore Log Details





PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm				
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717				
START DATE: 06/02/2017	WORK STATUS: New Bore	WORK STATUS: New Bore				
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIF	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m				
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings	SAMPLE TYPES: Drill Cuttings				
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand	CHECKED BY:				

	MATERIAL DESCRIPTION				BORE CONSTRUCTION					
DEPTH (mMDRT)	GEOLOGICAL DESCRIPTION	SAMPLE DEPTH (mMDRT)	Avg. ROP (m/hr)	FORMATION TOPS (mMDRT)	DEPTH (mMDRT)	GRAPHIC LOG	GDS CODE	CONSTRUCTION		
2— 4— 6— 8—	SANDSTONE: Dark yellowish orange to light brown, pred. coarse to very coarse with common medium grained quartz grains, moderately sorted, sub-angular to sub-rounded, no cement, rare reddish brown silty matrix, occurring as loose disaggregated quartz grains				2—		SDSN	Plumb Road-1 spud 1545hrs 06 Feb 2017		
12— 14— 16— 18— 20— 22— 24— 26— 28—	SANDSTONE: Grayish red, predominantly fine to medium grained with common coarse and minor very coarse quartz grains, moderately to poorly sorted, sub-angular to sub-rounded, no cement, non-calcareous, abundant reddish brown and off white argillaceous matrix, occuring as predominantly loose disaggregated grains, rare yellowish gray aggregates with abundant off-white argilleous matrix, hard to very hard aggregates, poor to very poor visual porosity. Rare SILTY CLAYSTONE: moderate to dark reddish brown, floating poorly sorted quartz grains, rare lithics, blocky, hard to very hard			UNDIFFERENTIATED SEDIMENTS	12 — 14 — 16 — 18 — 20 — 22 — 24 — 26 — 28 — 28 — 28 — 26 — 28 — 28 — 28		SDSN	9 5/8" K55 36 lb/ft csg @ 14.9m MDRT 12-1/4" hole @ 16.2m MDRT		
30 - 32 - 34 - 36 - 38 - 40 - 42 - 44 - 46 - 48 - 48 - 48 - 48 - 48 - 48	ARGILLACEOUS SANDSTONE: Light brown to dark reddish brown, predominantly fine-medium grained with common coarse, minor very coarse quartz grains and trace quartz pebbles, poorly sorted, sub-angular to sub-rounded, no cement, non-calcareous, abundant reddish brown and light gray argillaceous matrix, grading to claystone, dispersive, amorphous. Trace SILTY CLAYSTONE: dark reddish brown, floating poorly sorted quartz grains, blocky, hard to very hard., argillaceous		33 m/hr			IOND	30 — 32 — 34 — 36 — 36 — 40 — 44 — 44 — 46 — 48 — 48 — 48 — 48 — 5 — 5 — 5 — 5 — 5 — 5 — 5 — 5 — 5 —		SDSN	
CO	MMENT: All depths referenced to Rotary Tab	le (mMD	RT).	Depth	to Gr	ound Le	evel (mMD0	GL) = (mMDRT - 3.8) PAGE 1 OF 13		







PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm				
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717				
START DATE: 06/02/2017	WORK STATUS: New Bore					
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPTI	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m				
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings	SAMPLE TYPES: Drill Cuttings				
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand	CHECKED BY:				

	MATERIAL DESCRIPTION					BORE CONSTRUCTION		
DEPTH (mMDRT)	GEOLOGICAL DESCRIPTION	SAMPLE DEPTH (mMDRT)	Avg. ROP (m/hr)	FORMATION TOPS (mMDRT)	DEPTH (mMDRT)	GRAPHIC LOG	GDS CODE	CONSTRUCTION
52 — 54 — 56 — 62 — 64 — 66 — 68 —	SANDSTONE, Light brown to dark reddish brown to pale yellowish orange, medium-coarse grained with minor very coarse grained quartz gename and trace quartz pebbles, moderately-poorly sorted, sub-angular to sub-rounded, no cement, non-calcareous, localised vari-coloured argillaceous matrix increasing with depth, trace lithics, occuring as predominantly loose disaggregated grains, good visual porosity			PILLIGA SANDSTONE 99	52 — 54 — 54 — 56 — 62 — 64 — 66 — 68 — 68 — 68 — 68 — 68 — 68		SDSN	
70 — 72 — 74 — 76 —	SANDY CLAYSTONE medium gray to moderate yellowish brown, arenaceous, with floating medium grained quartz grains, dispersive to soft, amorphous, sandy		36 m/hr		70		CLSN	
80 — 82 — 84 — 86 — 88 — 90 — 92 — 94 — 96 — 98 —	ARGILLACEOUS SANDSTONE dark yellowish orange to moderate yellowish brown, predominantly fine-medium grained with common coarse, and rare very coarse quartz grains, moderately sorted, sub-angular to sub-rounded, no cement, non-calcareous, abundant dark yellowish orange argillaceous matrix, dispersive, grading to claystone in part, occuring as predominantly loose disaggregated grains, poor visual porosity. increasing w/ depth SANDSTONE: medium dark gray, very fine to fine grained quartz aggregates, well sorted, sub-rounded, siliceous cement, trace white argillaceous matrix, slightly calcareous, very hard, nil to poor visual porosity. CLAYSTONE medium to medium dark grey, soft, amorphous Trace SiLTSTONE: moderate to dark reddish brown, floating poorly sorted quartz grains, blocky to subfissile, hard to very hard, argillaceous				80		SDSN	GL) = (mMDRT - 3.8) PAGE 2 OF 13







PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm			
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717			
START DATE: 06/02/2017	WORK STATUS: New Bore				
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m				
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings				
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand	CHECKED BY:			

	MATERIAL DESCRIPTION						BORE CONSTRUCTION		
DEPTH (mMDRT)	GEOLOGICAL DESCRIPTION	SAMPLE DEPTH (mMDRT)	Avg. ROP (m/hr)	FORMATION TOPS (mMDRT)	DEPTH (mMDRT)	GRAPHIC LOG	GDS CODE	CONSTRUCTION	
102	SANDSTONE with minor interbedded ARGILLACEOUS SANDSTONE, SILTSTONE & CLAYSTONE. SANDSTONE: light olive gray, very fine to fine grained quartz aggregates, well sorted, sub-rounded, siliceous cement, trace				102		SDSN		
114 — 116 — 118 — 120 — 122 — 124 — 126 — 130 — 132 — 134 — 136 — 136 —	aggregates, well sorted, sub-rounded, siliceous cement, trace white argillaceous matrix, slightly calcareous, very hard, nil to poor visual porosity. Loose quartz grains, predominantly medium grained with common coarse, and rare very coarse quartz grains and quartz pebbles, moderately sorted, sub-angular to sub-rounded, no cement, non-calcareous, rare to minor dark yellowish orange argillaceous matrix, fair to good inferred porosity. SILTSTONE: moderate to dark reddish brown, blocky to sub-fissile, very hard CLAYSTONE: medium grey to light olive gray, soft, amorphous. ARGILLACEOUS SANDSTONE: dark yellowish orange to moderate yellowish brown, predominantly medium grained with common coarse, and rare very coarse quartz grains, moderately sorted, sub-angular to sub-rounded, no cement, non-calcareous, abundant dark yellowish orange argillaceous matrix grading to claystone in part. ARENACEOUS CLAYSTONE: medium gray to moderate yellowish brown, arenaceous, with floating medium grained quartz grains, dispersive to soft, amorphous		45 m/hr		114 — 116 — 118 — 120 — 122 — 124 — 126 — 130 — 132 — 134 — 136 — 136 —		SDSN		
140 —	SANDSTONE, Light olive gray to moderate yellowish brown, predomiantly medium to coarse grained quartz grains, trace quatrz pebbles, moderately sorted, sub-angular to sub-rounded, no cement, trace to rare white argillaceous matrix, occuring as loose quartz, good visual porosity		26 m/hr		140 —		SDSN		





PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm				
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717				
START DATE: 06/02/2017	WORK STATUS: New Bore					
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPT	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m				
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings	SAMPLE TYPES: Drill Cuttings				
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand	CHECKED BY:				

	MATERIAL DESCRIPTION						BORE CONSTRUCTION		
DEPTH (mMDRT)	GEOLOGICAL DESCRIPTION	SAMPLE DEPTH (mMDRT)	Avg. ROP (m/hr)	FORMATION TOPS (mMDRT)	DEPTH (mMDRT)	GRAPHIC LOG	GDS CODE	CONSTRUCTION	
152 — 	SANDSTONE, Light olive gray to moderate yellowish brown, predomiantly medium to coarse grained quartz grains, trace quatrz pebbles, moderately sorted, sub-angular to sub-rounded, no cement, trace to rare white argillaceous matrix, occuring as loose quartz, good visual porosity				152 — 154 — 156 —		SDSN	7" N80 23 lb/ft csg @ 156.02m MDRT 8-1/2" hole @	
160 — 162 — 162 — 164 — 166 — 170 — 172 — 174 — 176 — 1778	SANDSTONE, Light olive grey, translucent grains, upper fine to very coarse quartz grains, predominantly medium to coarse, minor gravel sized quartz grains, very poor to poor sorting, predominantly sub-angular, minor sub-rounded, minor dark yellowish orange stained quartz grains, minor dark lithics, common off white argillaceous material dispersed throughout sample - likely matrix in origin, rare black lustrous lignitic coal fragments with conchoidal fracture, dominantly disaggregated, trace aggregate with strong siliceous cementation and minor off white argillaceous matrix, fair to good inferred porosity. Minor cement contamination in sample.		26 m/hr		160 — 162 — 164 — 166 — 170 — 174 — 176 — 176 —		SDSN	158m MDRT	
182 — 	SANDY CLAYSTONE: Light olive gray, arenaceous, with minor floating predominantly medium grained and rare coarse to very coarse quartz grains, dispersive, common to abundant carbonaceous specks, amorphous., sandy MASSIVE SANDSTONE with minor SILTSTONE, CLAYSTONE & COAL interbode.		16 m/hr		180 —		CLSN		
192 — 	& COAL Interbeds. SANDSTONE: Light olive grey, translucent grains, fine to very coarse quartz grains, predominantly fine to medium, rare gravel sized quartz grains, predominantly fine to medium, rare gravel sized quartz grains, moderate to poor sorting, predominantly sub-angular, minor sub-rounded, slightly calcareous, minor to common white to off white argillaceous material dispersed throughout sample - likely matrix in origin, rare dark lithics, rare to minor carbonaceous specks, occurring as disaggregated loose quartz grains, fair to good inferred porosity. CLAYSTONE: dark yellowish brown, common carbonaceous specks, soft, amorphous SILTSTONE: dusky yellowish brown to olive gray, slightly carbonaceous, trace mica, hard to very hard, sub fissile to fissile.		44 m/hr		192 — 		SDSN	GL) = (mMDRT - 3.8) PAGE 4 OF 13	





PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm				
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717				
START DATE: 06/02/2017	WORK STATUS: New Bore					
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m					
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings					
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand CHECKED BY:					

	MATERIAL DESCRIPTION						BORE CONSTRUCTION		
DEPTH (mMDRT)	GEOLOGICAL DESCRIPTION	SAMPLE DEPTH (mMDRT)	Avg. ROP (m/hr)	FORMATION TOPS (mMDRT)	DEPTH (mMDRT)	GRAPHIC LOG	GDS CODE	CONSTRUCTION	
	MASSIVE SANDSTONE with minor SILTSTONE, CLAYSTONE				=			N N	
202	& COAL interbeds. SANDSTONE: Light olive grey, translucent grains, fine to very coarse quartz grains, predominantly fine to medium, rare gravel sized quartz grains, moderate to poor sorting, predominantly sub-angular, minor sub-rounded, slightly calcareous, minor to common white to off white argillaceous material dispersed throughout sample - likely matrix in origin, rare dark lithics, rare				202	 : 			
204 —	sub-angular, minor sub-rounded, slightly calcareous, minor to common white to off white argillaceous material dispersed throughout sample - likely matrix in origin, rare dark lithics, rare to minor carbonaceous specks, occurring as disaggregated loose quartz grains, fair to good inferred porosity.				204 —				
208	CLAYSTONE: dark yellowish brown, common carbonaceous specks, soft, amorphous				208	· · · · · · · · · · · · · · · · · · ·			
210	SILTSTONE: dusky yellowish brown to olive gray, slightly carbonaceous, trace mica, hard to very hard, sub fissile to fissile.		-		210				
212					212				
214					214				
216					216				
218					218				
220					220				
222					222				
224			44 m/hr		224		SDSN		
226 —			4		226—				
228 —					228-				
230 —					230—				
234					234				
236					236—				
238					238	:			
240					240	: 			
242					242				
244					244				
246					246				
248					248			N N	
CON	□ MMENT: All depths referenced to Rotary Tab	le (mMI	DRT).	Depti	to G	round L	evel (mMD0	GL) = (mMDRT - 3.8) PAGE 5 OF 13	





PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm				
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717				
START DATE: 06/02/2017	WORK STATUS: New Bore	WORK STATUS: New Bore				
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIP	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m				
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings	SAMPLE TYPES: Drill Cuttings				
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand	CHECKED BY:				

	MATERIAL DESCRIPTION						BORE CONSTRUCTION		
DEPTH (mMDRT)	GEOLOGICAL DESCRIPTION	SAMPLE DEPTH (mMDRT)	Avg. ROP (m/hr)	FORMATION TOPS (mMDRT)	DEPTH (mMDRT)	GRAPHIC LOG	GDS CODE	CONSTRUCTION	
	MASSIVE SANDSTONE with minor SILTSTONE, CLAYSTONE				-			N N	
252 — 254 —	& COAL interbeds. SANDSTONE: Light olive grey, translucent grains, fine to very coarse quartz grains, predominantly fine to medium, rare gravel sized quartz grains, moderate to poor sorting, predominantly sub-angular, minor sub-rounded, slightly calcareous, minor to common white to off white argillaceous material dispersed throughout sample - likely matrix in origin, rare dark lithics, rare				252— 252— 254—				
256	loose quartz grains, fair to good inferred porosity.				256—				
258	CLAYSTONE: dark yellowish brown, common carbonaceous specks, soft, amorphous SILTSTONE: dusky yellowish brown to olive gray, slightly carbonaceous, trace mica, hard to very hard, sub fissile to fissile.				258 —				
260	carbonaceous, trace mica, hard to very hard, sub fissile to fissile.				260			1 1	
262 —					262 —			1 8	
266					266			1 1	
268					268				
270					270				
272 —					272— - - - - 274—				
276			44 m/hr		276—		SDSN		
278					278	::::::::			
280					280	:::::::::::::::::::::::::::::::::::::::			
282					282	:::::::::::::::::::::::::::::::::::::::			
284 —					284—				
288					288				
290					290				
292					292				
294 —					294 — - - 296 —				
298					298				
	AMENIT				_	:::::::			
COI	MMENT: All depths referenced to Rotary Tab	le (mMD	RT).	Depth	to Gr	ound Le	evel (mMDG	GL) = (mMDRT - 3.8) PAGE 6 OF 13	





PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm				
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717				
START DATE: 06/02/2017	WORK STATUS: New Bore					
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPT	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m				
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings	SAMPLE TYPES: Drill Cuttings				
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand	CHECKED BY:				

	MATERIAL DESCRIPTI	BORE CONSTRUCTION						
DEPTH (mMDRT)	GEOLOGICAL DESCRIPTION	SAMPLE DEPTH (mMDRT)	Avg. ROP (m/hr)	FORMATION TOPS (mMDRT)	DEPTH (mMDRT)	GRAPHIC LOG	GDS CODE	CONSTRUCTION
302	MASSIVE SANDSTONE with minor SILTSTONE, CLAYSTONE & COAL interbeds. SANDSTONE: Light olive grey, translucent grains, fine to very				302))
304 —	coarse quartz grains, predominantly fine to medium, rare gravel sized quartz grains, moderate to poor sorting, predominantly sub-angular, minor sub-rounded, slightly calcareous, minor to common white to off white argillaceous material dispersed throughout sample - likely matrix in origin, rare dark lithics, rare to minor carbonaceous specks, occurring as disaggregated loose quartz grains, fair to good inferred porosity.		44 m/hr		304 —		SDSN	
308	CLAYSTONE: dark yellowish brown, common carbonaceous specks, soft, amorphous SILTSTONE: dusky yellowish brown to olive gray, slightly				308 —			
310 —	carbonaceous, trace mica, hard to very hard, sub fissile to fissile. SANDY CLAYSTONE: light clive gray, arenaceous, with minor to common floating predominantly fine-medium grained & trace coarse quartz grains, dispersive, common to abundant carbonaceous specks, amorphous. Interpreted as			310.3m	310	× — × = × = × = × = × = × = × = × = × =		
314	interbedded sandstone and claystone Trace COAL: black, sub-vitreous, generally occurring in thin laminations with SILTSTONE, moderately hard to hard, fissile, occasionally hackly			ORMATI	314	× × × × ×		
316	Trace SANDY SILTSTONE: medium olive grey to medium dark grey, common to abundant arenaceous material and grading to a SILTY SANDSTONE in part, common to locally abundant thin coal laminations, hard to very hard, blocky to			PURLAWAUGH FORMATION	316	× × × × × × × × × × × × × × × × × × ×		
320	sub-blocky, minor sub-fissile.			PURLAW	320	^ 'x ^- ; x x ; x x ; x x ;		
322					322		CLSN SSLS	
326					326 —	× · × ; × · × ; × · × ;		
328			m/hr		328 —	× — × ; × — × ; × — × ;		
330 —			21 m		330 —	× × × ;		
334					334	· —× · · · × · · · × · · · × · · · · · ·		
336 —	INTERBEDDED SILTSTONE and CLAYSTONE SILTSTONE: Olive gray to medium dark gray, slightly carbonaceous, firm to moderately hard, blocky				336 —	× × × × × × × × ×		
340	CLAYSTONE: light olive gray, slightly arenaceous, with rare floating quartz grains, dispersive, common carbonaceous specks, amorphous.				340	× × × × × × × × ×	SLSN CLSN	
342					342	× × × × × × × × ×		
344 —					344 —	× — × ; – ′× — ; × _ · × ;	CLSN	
348					348 —	×	SSLS SDSN	
	MMENT: All denths referenced to Betom: Teh	L	I			<u> </u>		CL) = (mMDDT 2.8) DACE 7 OF 12





PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm				
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717				
START DATE: 06/02/2017	WORK STATUS: New Bore	WORK STATUS: New Bore				
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIF	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m				
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings	SAMPLE TYPES: Drill Cuttings				
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand	CHECKED BY:				

	MATERIAL DESCRIPTION						BORE CONSTRUCTION		
DEPTH (mMDRT)	GEOLOGICAL DESCRIPTION	SAMPLE DEPTH (mMDRT)	Avg. ROP (m/hr)	FORMATION TOPS (mMDRT)	DEPTH (mMDRT)	GRAPHIC LOG	GDS CODE	CONSTRUCTION	
352 — 354 —	Interbedded CLAYSTONE, SILTSTONE, SANDSTONE and COAL SANDY SILTSTONE: medium olive grey to medium dark grey, common to abundant arenaceous material and grading to a SILTY SANDSTONE in part, common to locally abundant thin coal laminations, hard to very hard, blocky to sub-blocky, minor sub-fissile. COAL: black, sub-vitreous, generally occurring in thin laminations				352— 354—	X	CLSN SSLS SDSN		
356 — 358 — 360 —	with SILTSTONE, moderately hard to hard, fissile, occasionally hackly. SANDSTONE: light olive grey, very fine to medium quartz grained aggregates, predominantly fine to medium grains, rare to minor loose coarse grains, generally well sorted, sub-angular to sub rounded, common strong siliceous cement, rare weak calcareous cement, minor off white to light olive grey argillaceous matrix, predominantly occurring as loose disaggregated grains, very hard where aggregates, poor visual porosity.		21 m/hr		356— 358— 360—		SDSN		
362	CLAYSTONE: light grey, pulverised, sticky, amorphous/ dispersive. SANDSTONE, Light olive grey, commonly frosted grains, fine to very coarse quartz grains, minor fractured gravel sized particles, predominantly medium to coarse grains, poor to very poorly sorted, angular to sub-angular and commonly due to bit fracturing, minor sub-rounding, common moderately strong siliceous cement in rare aggregates, trace weak pyritic cement,				362—				
368 — 370 — 372 — 374 — 376 — 378 —	common to abundant off white argillaceous matrix (washing out of sample), minor to common lithics, rare dark volcanic fragments, generally disaggregated, rare very hard aggregates, fair to good inferred porosity. SANDSTONE grading with depth to CLAYSTONE & SILTSTONE SANDSTONE: Light olive grey, commonly frosted grains, fine to very coarse quartz grains, minor fractured gravel sized particles, predominantly medium to coarse grains, poor to very poorly sorted, angular to sub-angular and commonly due to bit fracturing, minor sub-rounding, common moderately strong siliceous cement in rare aggregates, trace weak pyritic cement, common to abundant off white argillaceous matrix (washing out of sample), minor to common lithics, generally disaggregated, rare very hard aggregates, fair to good inferred porosity. CLAYSTONE: off white, sticky and amorphous, likely sourced from SANDSTONE matrix or as interbedded laminations. SILTSTONE: medium dark grey to olive black, arenaceous in part, locally common carbonaceous micro-laminations and specks, very hard, sub-blocky to blocky, sub-fissile in part.		13 m/hr	DERIAH FORMATION	366 — 370 — 372 — 374 — 376 — 378 —		SDSN SLSN CLSN		
382 — 384 — 386 —	Interbedded SILTSTONE & SANDSTONE with thin COAL stringers. Increasing SILTSTONE with depth. SILTSTONE: medium dark grey, minor brownish black, common to locally abundant very fine to fine quartz grains and grading to a SILTY SST in part where brownish black, common to locally abundant carbonaceous material, very hard, sub-blocky to sub-fissile. SANDSTONE: off white to light grey, very fine to coarse grains, well sorted aggregates with either predominantly medium to coarse grains or predominantly fine quartz grains, sub-rounded to sub-angular grains, common strong silica cement and minor calcareous cement, common to locally abundant off white				380 —				
390 — 392 — 394 — 396 —	argillaceous matrix, locally common carbonaceous material, minor lithics, very hard aggregates, poor to fair visible porosity. CLAYSTONE: pulverised and likely SST matrix sourced.		22 m/hr	NAPPERBY FORMATION 826	390 — 392 — 394 — 396 — 398 —		SLSN SDSN		





PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm				
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717				
START DATE: 06/02/2017	WORK STATUS: New Bore	WORK STATUS: New Bore				
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPTION	N: Rotary Table (RT) = 3.8m				
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings					
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand	CHECKED BY:				

	MATERIAL DESCRIPTION						BORE CONSTRUCTION		
DEPTH (mMDRT)	GEOLOGICAL DESCRIPTION	SAMPLE DEPTH (mMDRT)	Avg. ROP (m/hr)	FORMATION TOPS (mMDRT)	DEPTH (mMDRT)	GRAPHIC LOG	GDS CODE	CONSTRUCTION	
	Interbedded SILTSTONE & SANDSTONE with thin COAL stringers. Increasing SILTSTONE with depth.					× ′ . ′ . ′			
402 —	SILTSTONE: medium dark grey, minor brownish black, common to locally abundant very fine to fine quartz grains and grading to a SILTY SST in part where brownish black, common to locally abundant carbonaceous material, very hard, sub-blocky to				402	`x ` . ` . ` ' . ' . × . ' 'x ` . ` . `			
404 —	sub-fissile.				404 —	· . · . × . · · × · . · . ·			
406 —	SANDSTONE: off white to light grey, very fine to coarse grains, well sorted aggregates with either predominantly medium to coarse grains or predominantly fine quartz grains, sub-rounded to sub-angular grains, common strong silica cement and minor calcareous cement, common to locally abundant off white				406				
408	to sub-angular grains, common strong silica cement and minor calcareous cement, common to locally abundant off white argillaceous matrix, locally common carbonaceous material, minor lithics, very hard aggregates, poor to fair visible porosity.				408	× · . · . · . · · · · · · · · · · · · ·			
410 —	CLAYSTONE: pulverised and likely SST matrix sourced.				410	· . · . · . · . · . · . · . · . · . · .			
412					412	`.`.×.` `×`.`.			
414 —					414	· · · · · · · · · · · · · · · · · · ·			
416 —					416	× · . · . · . · · · · · · · · · · · · ·			
418 —					418	· · · × · · · · · · · · · · · · · · · ·			
420 —					420	` . ` .× . ` `× ` . ` . ` ` . ` .× . `			
422					422	`x ' . ' . ' ' . ' . X . '			
424 —			/hr		424	^ · · × · · × · · · ·			
426 —			22 m/hr		426	`.`×.` `x`.`.	SLSN SDSN		
428 —					428	× · . · . · . · · · · · · · · · · · · ·			
430 —					430	`.`.×.` `×``.			
432 —					432	` . ` .× . ` `× ` . ` . ` ` . ` .× . `			
434 —					434	× ' . ' . ' ' . ' .× . ' ·× ' . ' . '			
436 —					436	`.`.×.` `×`.`.`			
438 —					438	× · · · · ·			
440 —					440	× · · · · · · · · · · · · · · · · · · ·			
442					442	· . · × . · × ·			
444					444	· · · × · · · · · · · · · · · · · · · ·			
446					446	`x ` . ` . ` . ` . ` . ` . ` . ` . ` . `		A 1	
448					448	^			
СО	│ MMENT∶ All depths referenced to Rotary Tab	l ole (mMI	DRT).	Depti	n to G		evel (mMD0	GL) = (mMDRT - 3.8) PAGE 9 OF 13	





		I			
PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm			
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717			
START DATE: 06/02/2017	WORK STATUS: New Bore				
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m				
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings				
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand	CHECKED BY:			

	MATERIAL DESCRIPTI	BORE CONSTRUCTION						
DEPTH (mMDRT)	GEOLOGICAL DESCRIPTION	SAMPLE DEPTH (mMDRT)	Avg. ROP (m/hr)	FORMATION TOPS (mMDRT)	DEPTH (mMDRT)	GRAPHIC LOG	GDS CODE	CONSTRUCTION
452 — 454 — 456 — 458 — 460 — 462 — 464 — 466 — 468 — 472 —	Interbedded SILTSTONE & SANDSTONE with thin COAL stringers. Increasing SILTSTONE with depth. SILTSTONE: medium dark grey, minor brownish black, common to locally abundant very fine to fine quartz grains and grading to a SILTY SST in part where brownish black, common to locally abundant carbonaceous material, very hard, sub-blocky to sub-fissile. SANDSTONE: off white to light grey, very fine to coarse grains, well sorted aggregates with either predominantly medium to coarse grains or predominantly fine quartz grains, sub-rounded to sub-angular grains, common strong silica cement and minor calcareous cement, common to locally abundant off white argillaceous matrix, locally common carbonaceous material, minor lithics, very hard aggregates, poor to fair visible porosity. CLAYSTONE: pulverised and likely SST matrix sourced.				452 — 454 — 456 — 458 — 460 — 464 — 466 — 468 — 470 —		SLSN SDSN	
474 — 476 — 478 — 480 — 482 — 484 — 486 — 486 — 490 —	SANDY SILTSTONE with minor interbedded SANDSTONE. Increasing SILTSTONE with depth. SANDY SILTSTONE: olive grey, medium dark grey, common carbonaceous and micaceous specks, quartzite micro-laminations in part, minor lithics, firm to very hard aggregates, sub fissile to blocky SANDSTONE: light olive grey, off white, very fine to fine grained, well sorted, generally sub-angular, common strong siliceous cement, rare weak calcareous material, common off white argillaceous matrix, common to abundant light olive grey silty matrix and commonly grades to / interbedded with SANDY SILTSTONE		22 m/hr		474 — 476 — 480 — 484 — 486 — 490 — 492 — 492 —	x x x x x x x x x x x x x x x x x x x	SSLS	
494 —	MMENIT: All depths referenced to Potany Tah				494	x		21\= (mMDPT - 3.8) DACE 10 OE 12





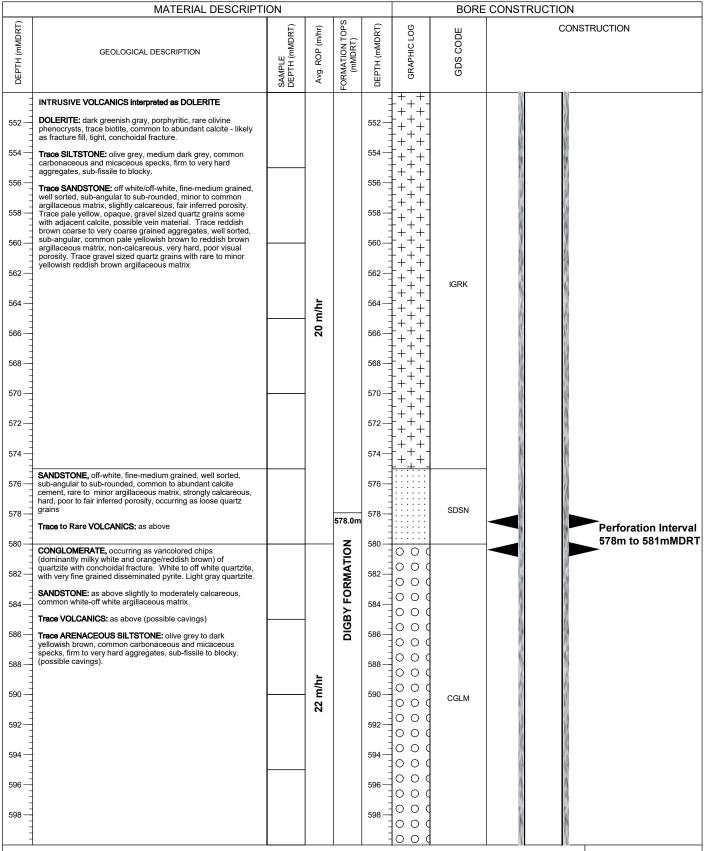
PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm			
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717			
START DATE: 06/02/2017	WORK STATUS: New Bore				
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m				
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings				
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand	CHECKED BY:			

	MATERIAL DESCRIPTION					BORE CONSTRUCTION		
DEPTH (mMDRT)	GEOLOGICAL DESCRIPTION	SAMPLE DEPTH (mMDRT)	Avg. ROP (m/hr)	FORMATION TOPS (mMDRT)	DEPTH (mMDRT)	GRAPHIC LOG	GDS CODE	CONSTRUCTION
502 — 504 — 506 — 508 — 510 — 512 — 514 —	SANDY SILTSTONE with minor interbedded SANDSTONE. Increasing SILTSTONE with depth. SANDY SILTSTONE: olive grey, medium dark grey, common carbonaceous and micaceous specks, quartzite micro-laminations in part, minor lithics , firm to very hard aggregates, sub fissile to blocky SANDSTONE: light olive grey, off white, very fine to fine grained, well sorted, generally sub-angular, common strong siliceous cement, rare weak calcareous material, common off white argillaceous matrix, common to abundant light olive grey silty matrix and commonly grades to / interbedded with SANDY SILTSTONE SILTSTONE: olive black to greyish black to black, commonly		22 m/hr		502 — 504 — 506 — 508 — 510 — 512 — 514 —	× × × × × × × × × × × × × × × × × × ×	SSLS	
516 — 518 — 520 — 522 — 524 —	argillaceous, arenaceous in part with common floating quartz grains, common carbonaceous material, moderately hard to hard, blocky to sub-fissile				516 —	× × × × × × × × × × × × × × × × × × ×	SLSN	
528 — 530 — 532 — 532 —	SANDY SILTSTONE: olive grey, medium dark grey, common carbonaceous and micaceous specks, firm to very hard aggregates, sub fissile to blocky. SANDSTONE: off-white to medium light gray, predominantly medium to coarse-grained, trace very coarse quartz grains, translucent and opaque quartz, moderately sorted, subangular, common to abundant, argillaceous matrix, strongly calcareous, occurring predominantly as loose quartz grains, poor to fair inferred porosity.		20 m/hr	533.6m	526 — 528 — 530 — 532 — 534 —	× × × × × × × × × × × × × × × × × × ×	SSLS	
538 — 540 — 542 — 544 — 546 — 548 —	INTRUSIVE VOLCANICS interpreted as DOLERITE DOLERITE: dark greenish gray, porphyritic, rare olivine phenocrysts, trace biotite, common to abundant calcite - likely as fracture fill, tight, conchoidal fracture. Trace SILTSTONE: olive grey, medium dark grey, common carbonaceous and micaceous specks, firm to very hard aggregates, sub-fissile to blocky. Trace SANDSTONE: off white/off-white, fine-medium grained, well sorted, sub-angular to sub-rounded, minor to common argillaceous matrix, slightly calcareous, fair inferred porosity. Trace pale yellow, opaque, gravel sized quartz grains some with adjacent calcite, possible vein material. Trace reddish brown coarse to very coarse grained aggregates, well sorted, sub-angular, common pale yellowish brown to reddish brown argillaceous matrix, non-calcareous, very hard, poor visual porosity. Trace gravel sized quartz grains with rare to minor yellowish reddish brown argillaceous matrix			INTRUSIVE	536 — 538 — 540 — 542 — 544 — 546 — 548 —	- * + * - - + + + -	IGRK	
	AMENT: All depths referenced to Potany Tah				_	+++		GL) = (mMDPT 3.9) DACE 11 OF 12





PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm	
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717	
START DATE: 06/02/2017	WORK STATUS: New Bore		
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m		
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings		
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand	CHECKED BY:	







PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm	
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717	
START DATE: 06/02/2017	WORK STATUS: New Bore		
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m		
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings		
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand	CHECKED BY:	

MATERIAL DESCRIPTION						BORE CONSTRUCTION		
DEPTH (mMDRT)	GEOLOGICAL DESCRIPTION	SAMPLE DEPTH (mMDRT)	Avg. ROP (m/hr)	FORMATION TOPS (mMDRT)	DEPTH (mMDRT)	GRAPHIC LOG	GDS CODE	CONSTRUCTION
602 —	CONGLOMERATE, occurring as varicolored chips (dominantly milky white and orange/reddish brown) of quartzite with conchoidal fracture. White to off white quartzite, with very fine grained disseminated pyrite. Light gray quartzite. SANDSTONE: as above slightly to moderately calcareous, common white-off white argillaceous matrix. Trace VOLCANICS: as above (possible cavings) Trace ARENACEOUS SILTSTONE: olive grey to dark yellowish brown, common carbonaceous and micaceous specks, firm to very hard aggregates, sub-fissile to blocky. (possible cavings). Interbedded COAL, SILTSTONE, TUFF and SANDSTONE.		22 m/hr		602 —	××× ××× ××× ××× ××× ××× ××× ××× ××× ××	CGLM	
612 — 614 — 616 — 618 — 620 — 622 — 624 — 626 — 630 — 632 — 634 — 636 — 636 — 640 — 642 — 644 — 646 —	COAL: olive black, greyish black, locally sub-vitreous in laminations, common silty / earthy and grading to a CARBONACEOUS SILTSTONE, hard to very hard, sub-conchoidal where vitreous, hackley in part, generally sub-blocky to sub-fissile. TUFF: off white to greenish grey, waxy / plastic, firm to hard, delaminating, blocky. SILTSTONE: greyish black, commonly arenaceous material, common thin carbonaceous micro-laminations, hard to very hard, sub-blocky. SANDSTONE: off white to light olive grey, fine to medium grained, predominantly fine quartz grained, sub-angular, minor sub-rounded, common thong siliceous cement, trace calcareous material, common to abundant off white argillaceous matrix, locally common thin carbonaceous / coally microlaminations and silty layering, very hard aggregates, very poor visual porosity. Bottom of hole at 642.00 mMDRT Plumb Road-1 reached a Total Depth (TD) of 642m MDRT at 2100hrs 11 Feb 2017		17 m/hr	BLACK JACK GROUP	612— 614— 616— 618— 620— 622— 624— 626— 630— 632— 634— 636— 636— 640— 642— 644—	**************************************	SLSN COAL TUFF SDSN	4-1/2" K55 11.6 lb/ft csg @ 641m MDRT 6-1/8" hole @ 642m MDRT Wireline Logging at TD Run 1: GDRC (GR Dual Density, Caliper, Resistivity) Run 2: NRG (Neutron, GR, Resistivity) Run 3: MPR (64"Res, Lat Res, Single Point Res, Fluid Res, SP, Temp, GR, Mag Dev) Formation tops picked from wireling data
648	AMENT: All depths referenced to Potany Tab				648			Formation tops picked from wireline data and correlated to the Bohena-4 and Bohena-5 offset wells.



Well Completion Report

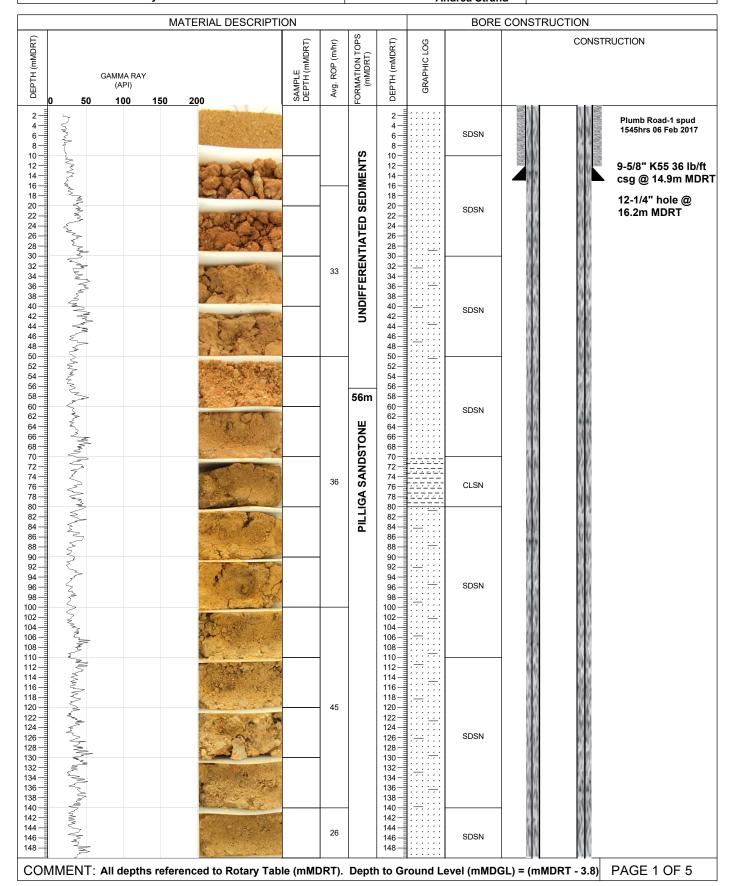


Appendix 5 – Photo Log Details





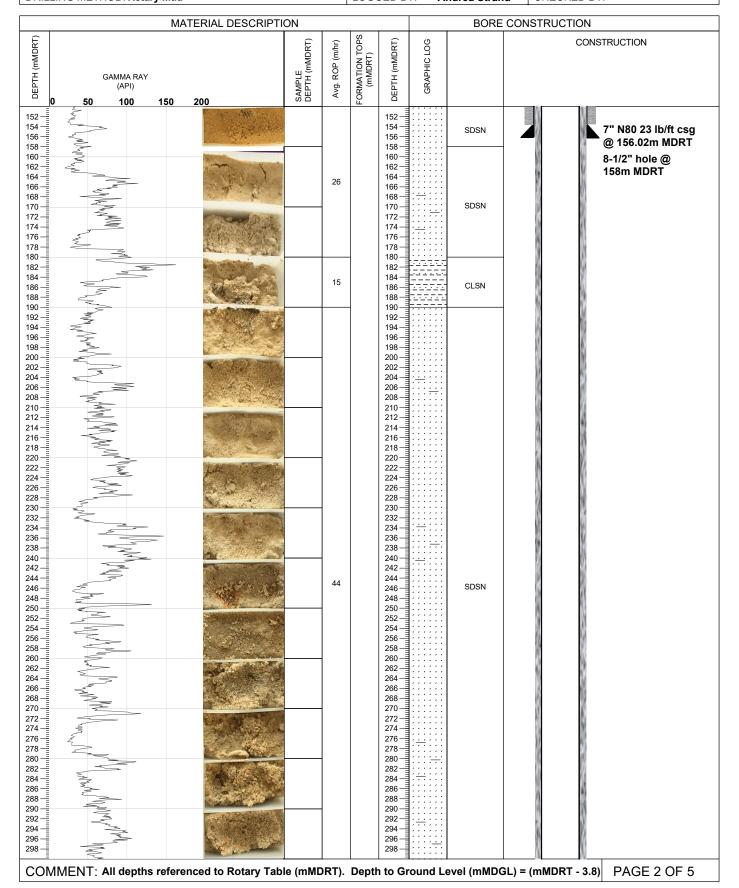
PROJECT: Plumb Road-1	WORK TYPE: Well ELEVATION: Est. 258.2 AHDm			
LOCATION: Pilliga State Forest	NORTHING: 750122 EASTING: 6618717			
START DATE: 6/02/2017	WORK STATUS: New Bore			
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m		
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings			
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand CHECKED BY:			







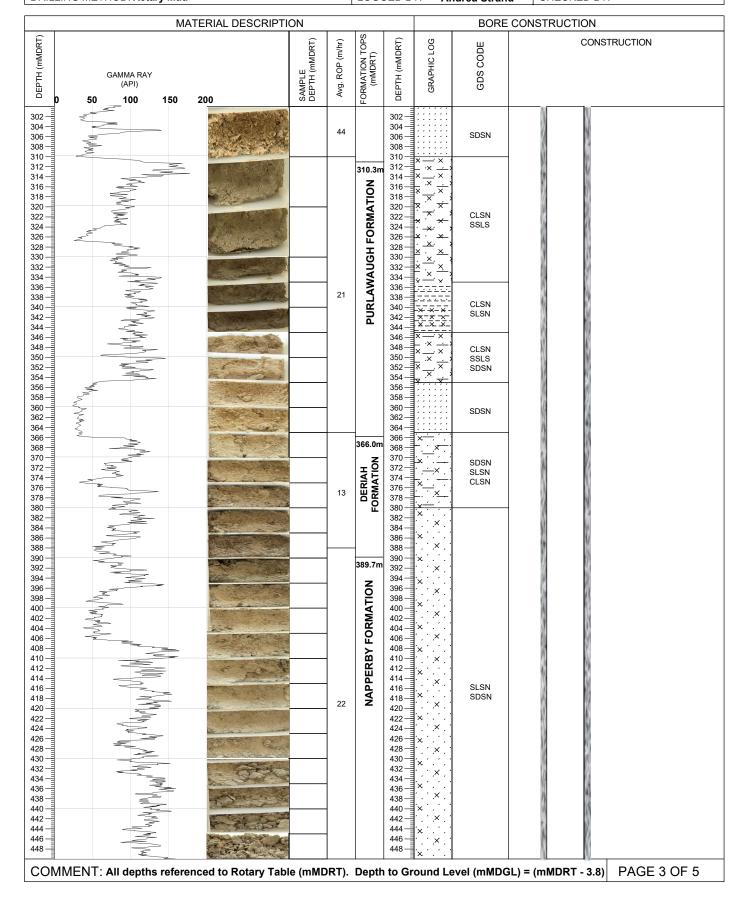
PROJECT: Plumb Road-1	WORK TYPE: Well ELEVATION: Est. 258.2 A	-IDm		
LOCATION: Pilliga State Forest	NORTHING: 750122 EASTING: 6618717			
START DATE: 6/02/2017	WORK STATUS: New Bore			
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m		
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings			
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand CHECKED BY:			







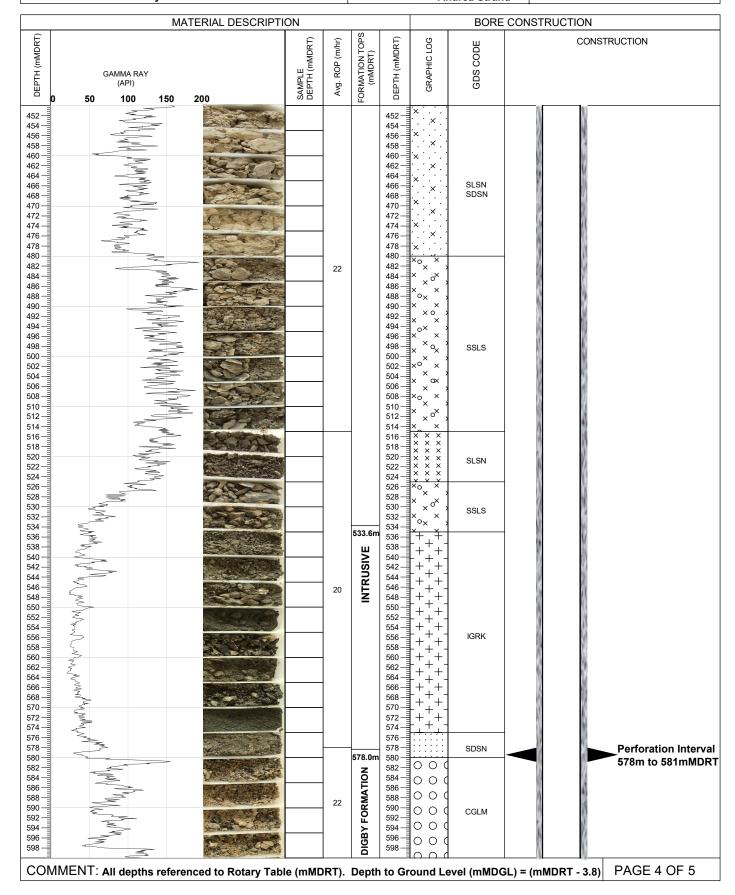
PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717
START DATE: 6/02/2017	WORK STATUS: New Bore	
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPTION	N: Rotary Table (RT) = 3.8m
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings	
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand	CHECKED BY:







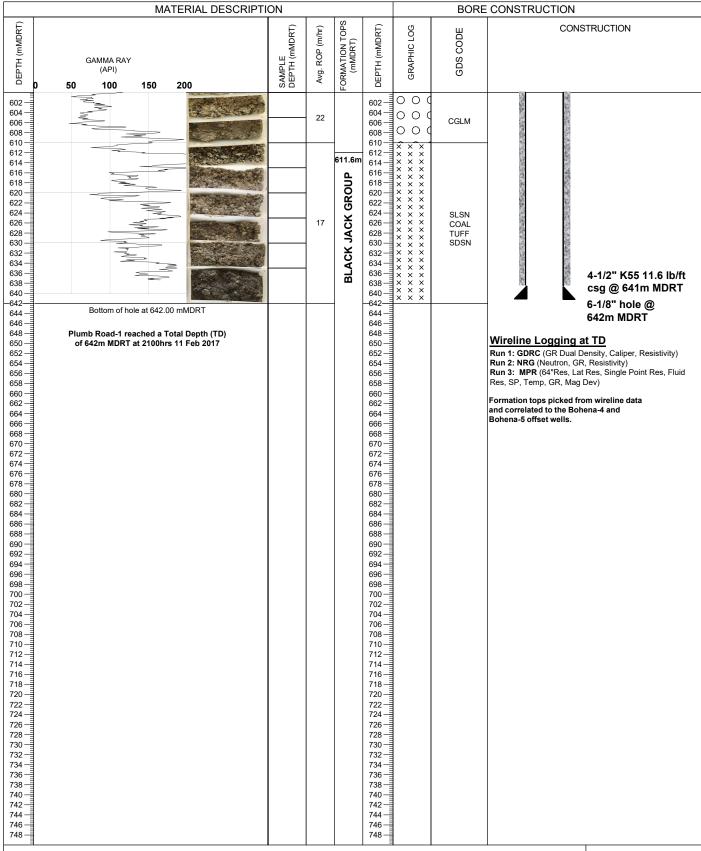
PROJECT: Plumb Road-1	WORK TYPE: Well ELEVATION: Est. 258.2 AHD)m		
LOCATION: Pilliga State Forest	NORTHING: 750122 EASTING: 6618717			
START DATE: 6/02/2017	WORK STATUS: New Bore			
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m		
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings			
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand CHECKED BY:			







PROJECT: Plumb Road-1	WORK TYPE: Well	ELEVATION: Est. 258.2 AHDm		
LOCATION: Pilliga State Forest	NORTHING: 750122	EASTING: 6618717		
START DATE: 6/02/2017	WORK STATUS: New Bore			
COMPLETION DATE: 11/02/2017	REFERENCE POINT DESCRIPTION	REFERENCE POINT DESCRIPTION: Rotary Table (RT) = 3.8m		
DRILL TYPE: Rotary Mud	SAMPLE TYPES: Drill Cuttings			
DRILLING METHOD: Rotary Mud	LOGGED BY: Andrea Strand	CHECKED BY:		





Well Completion Report



Appendix 6 – Formation Sample Photos





Water Monitoring Bore Hole

Chip Tray Photographs





Surface Hole (8-1/2") – 0m to 158m MDRT 10m sample interval







Production Hole (6-1/8") – 160m to 345m MDRT 10m sample interval to 330m then 5m sample interval







Production Hole (6-1/8") – 345m to 445m MDRT 5m sample interval







Production Hole (6-1/8") – 445m to 515m MDRT 5m sample interval







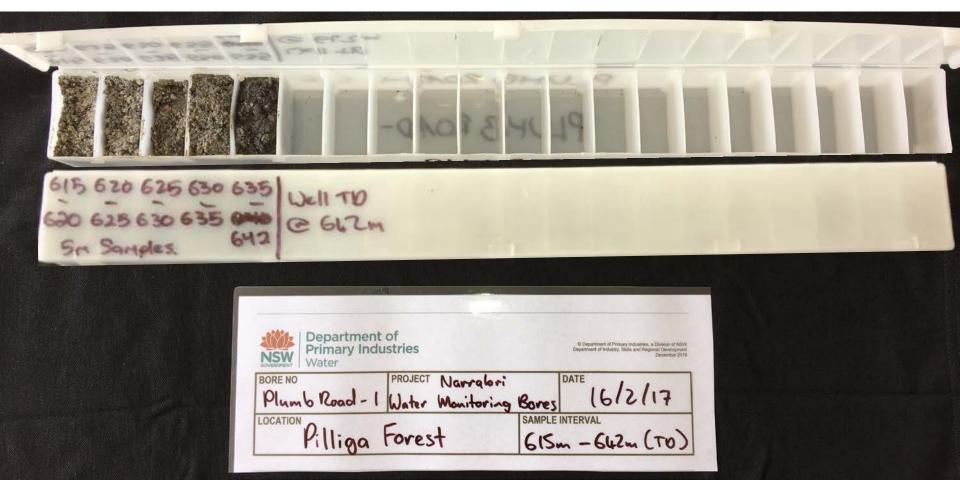
Production Hole (6-1/8") – 515m to 615m MDRT 5m sample interval







Production Hole (6-1/8") – 615m to 642m MDRT 5m sample interval





Well Completion Report



Appendix 7 – Wireline Logs



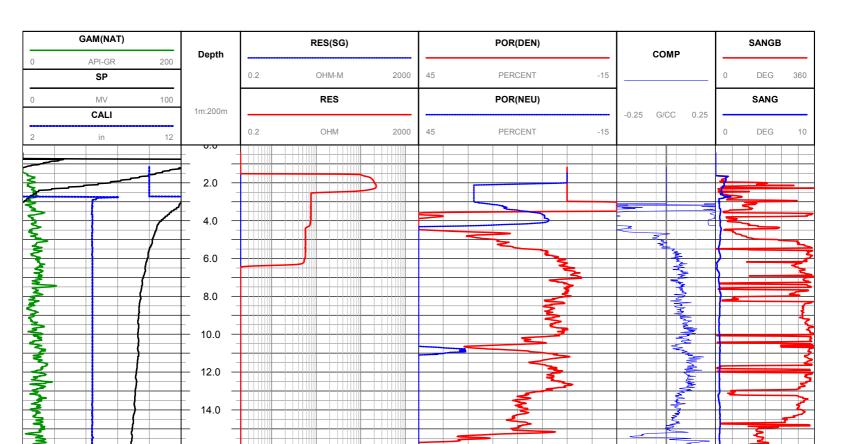
COMPOSITE PLOT

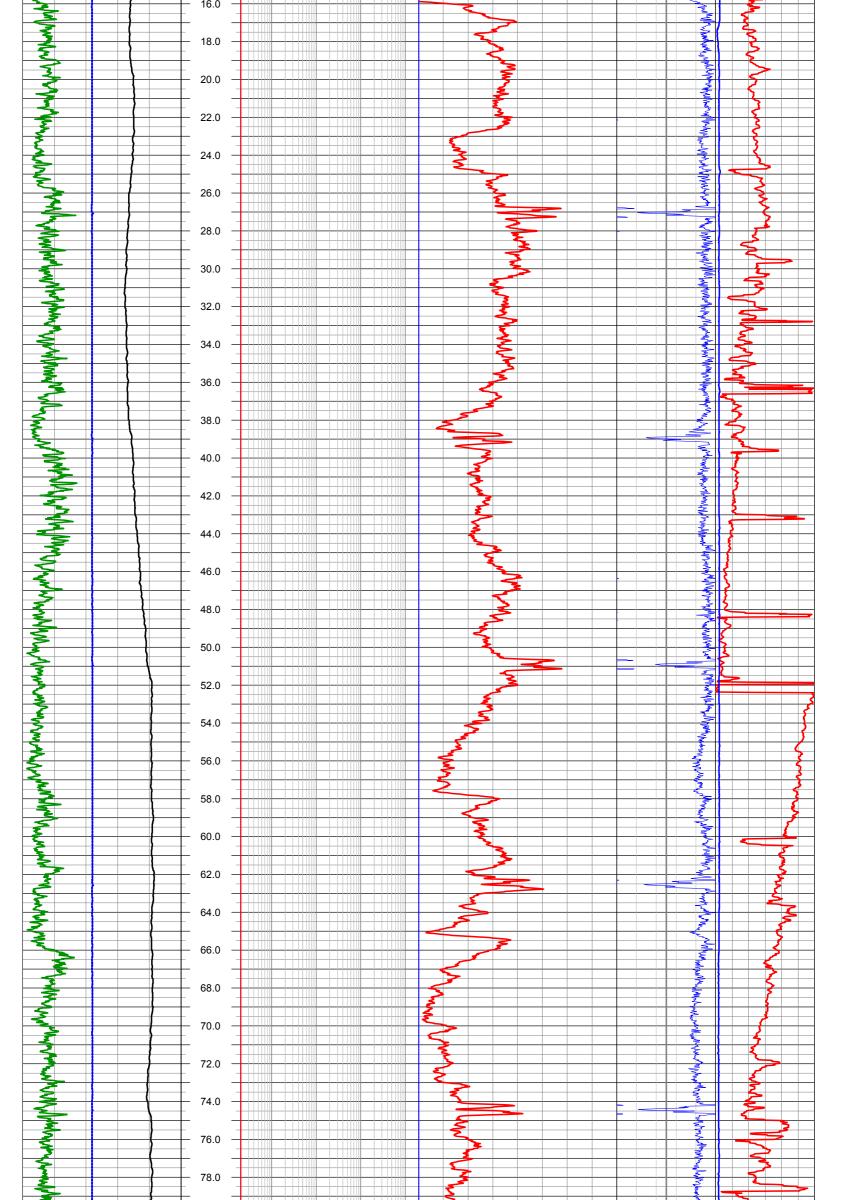
PLUMB-ROAD-1

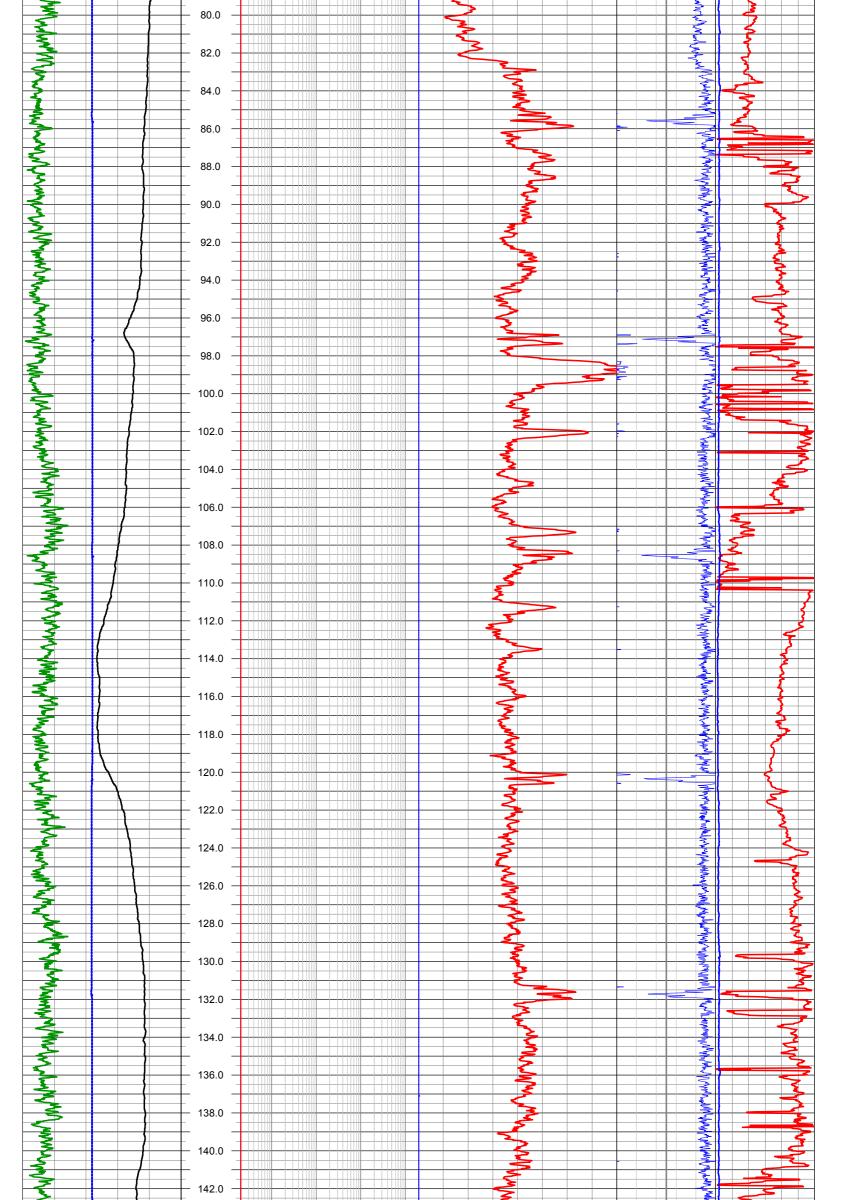
COMPANY WELL	INGAUGE PLUMB-RC	AD-1			RRABRI UMB-ROAD-1	STATE	_
ON: PLUMB-ROAD-1 NARRABRI NSW PLUMB-ROAD-1	PERM LOG N	ANENT DAT ANENT DAT IEASURED F ING MEASUF	JM ELEVATION RT	DN RT	ELEV KB DF GL	ATIONS:	REMARKS: 1. CS137
LOCATION: PLUMB-R FIELD: NARRABRI STATE: NSW WELL: PLUMB-ROAD COMPANY: INGAUGE	LICENSE	SECTION	TOWNSHIP RANGE		1. 3.	SERVICES: 2.	2. CZ3956
DATE	02/13/17				RECORDED BY	DMB	
TIME	12:27:				WITNESSED BY		
RUN NUMBER	1				LOGGING UNIT	V035	
DEPTH-DRILLER	642				RIG NUMBER		
DEPTH-LOGGER	636.70				TOOL TYPE		
BIT SIZE	15.5				TOOL SERIAL NO		
CASING TYPE	STEEL				LATITUDE		
CASING OD	17.01				LONGITUDE		
CASING BOTTOM	156.02				SAMPLE INT.	.01	
FLUID TYPE	0				LOG DIRECTION	U	
TRUCK CAL NO.	0.09792				FEET OR METER	M	
WATER LEVEL					SOURCE TYPE		SOURCE ID

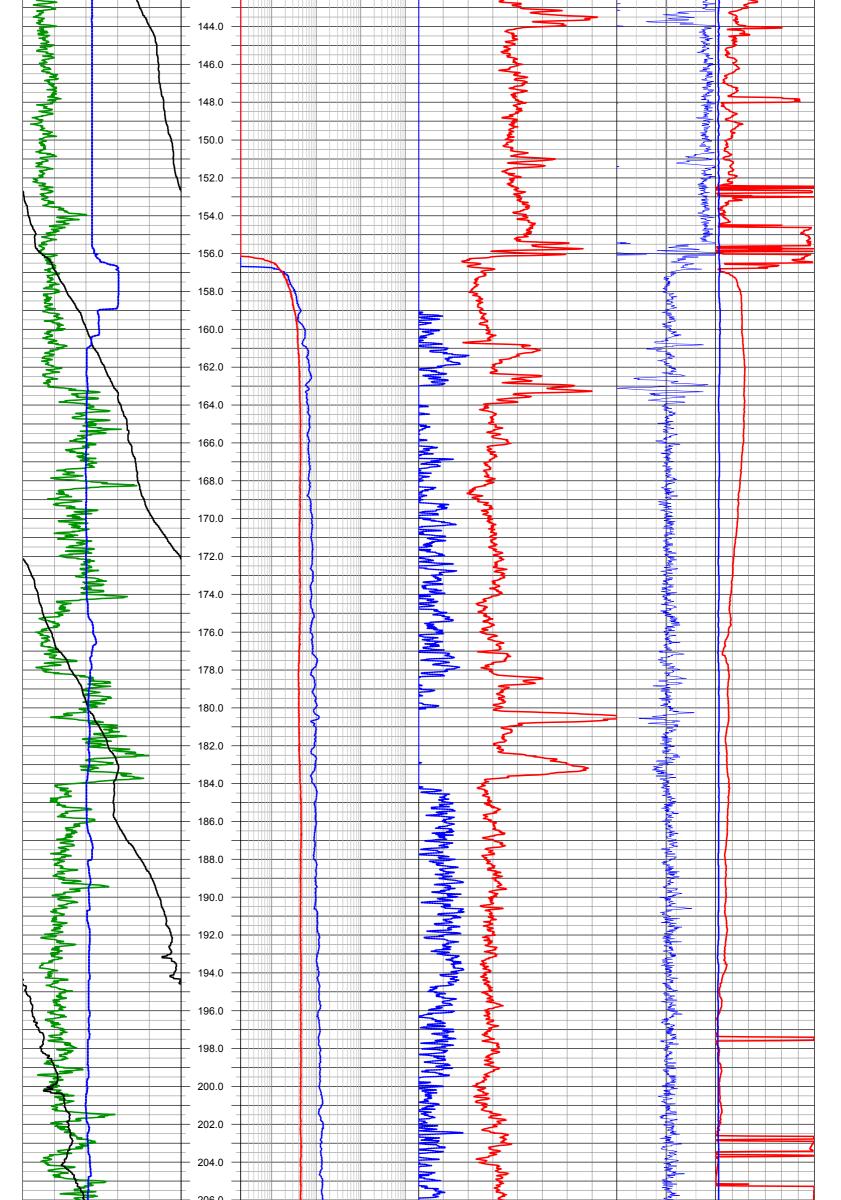
IMPORTANT NOTE

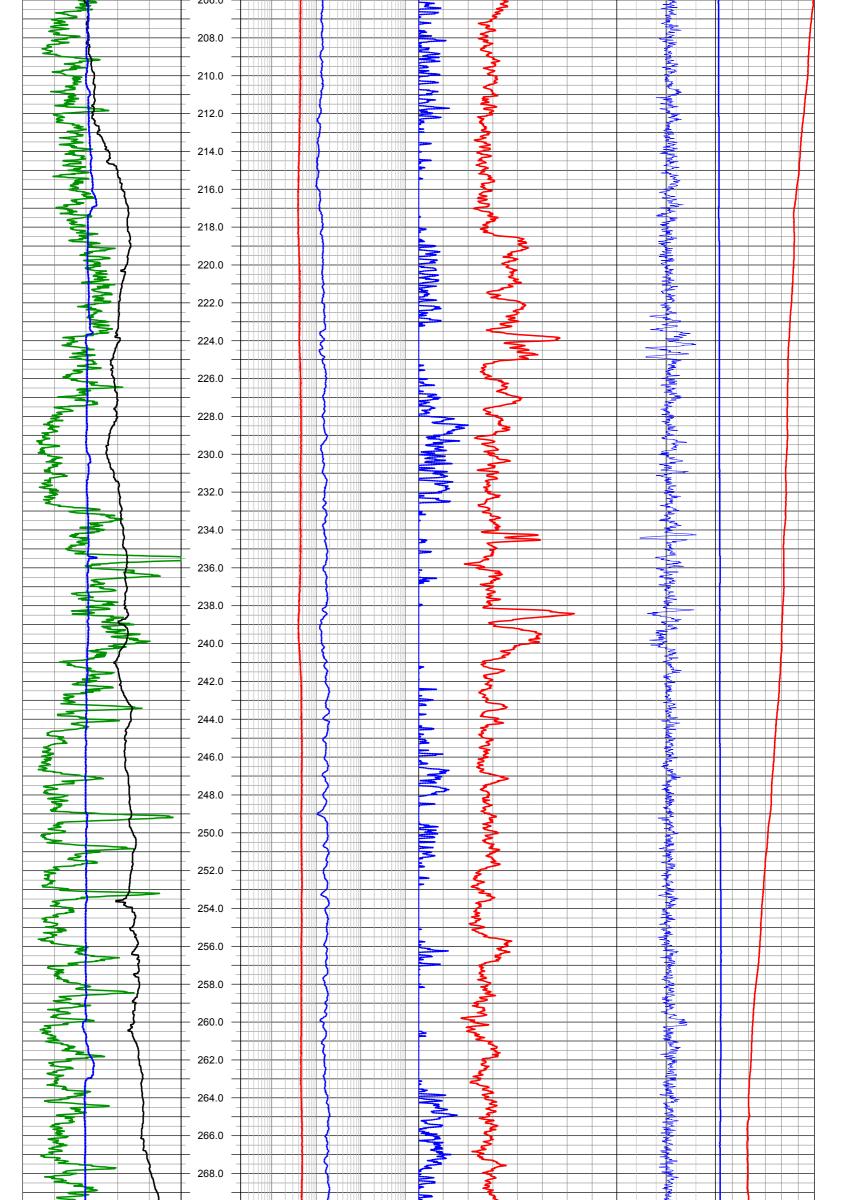
The following interpretations are opinions based upon inferences from borehole logs, Kinetic Logging Services Pty Ltd cannot and does not guarantee the correctness or accuracy of any interpretations. Therefore Kinetic Logging Services Pty Ltd shall not be liable or responsible for any loss, damage, cost or expense incurred or sustained by anyone resulting from any interpretations.

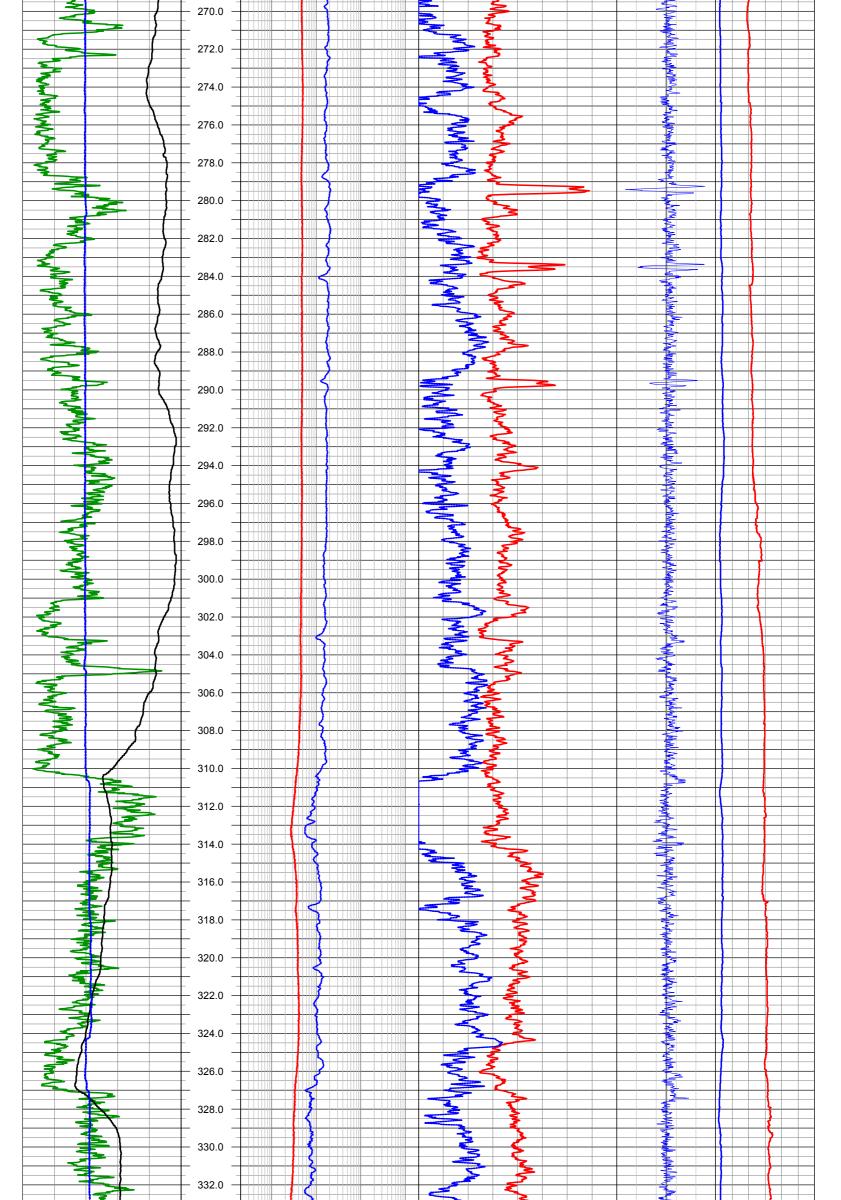


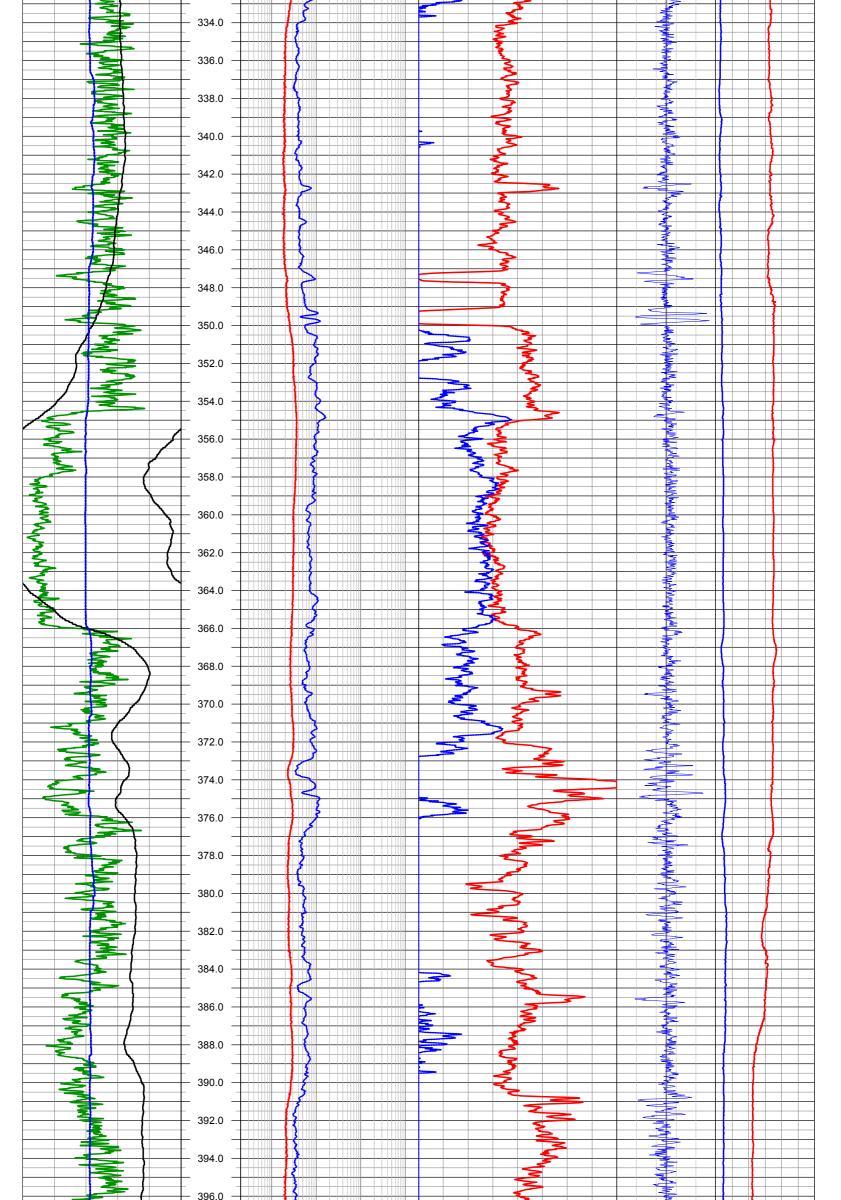


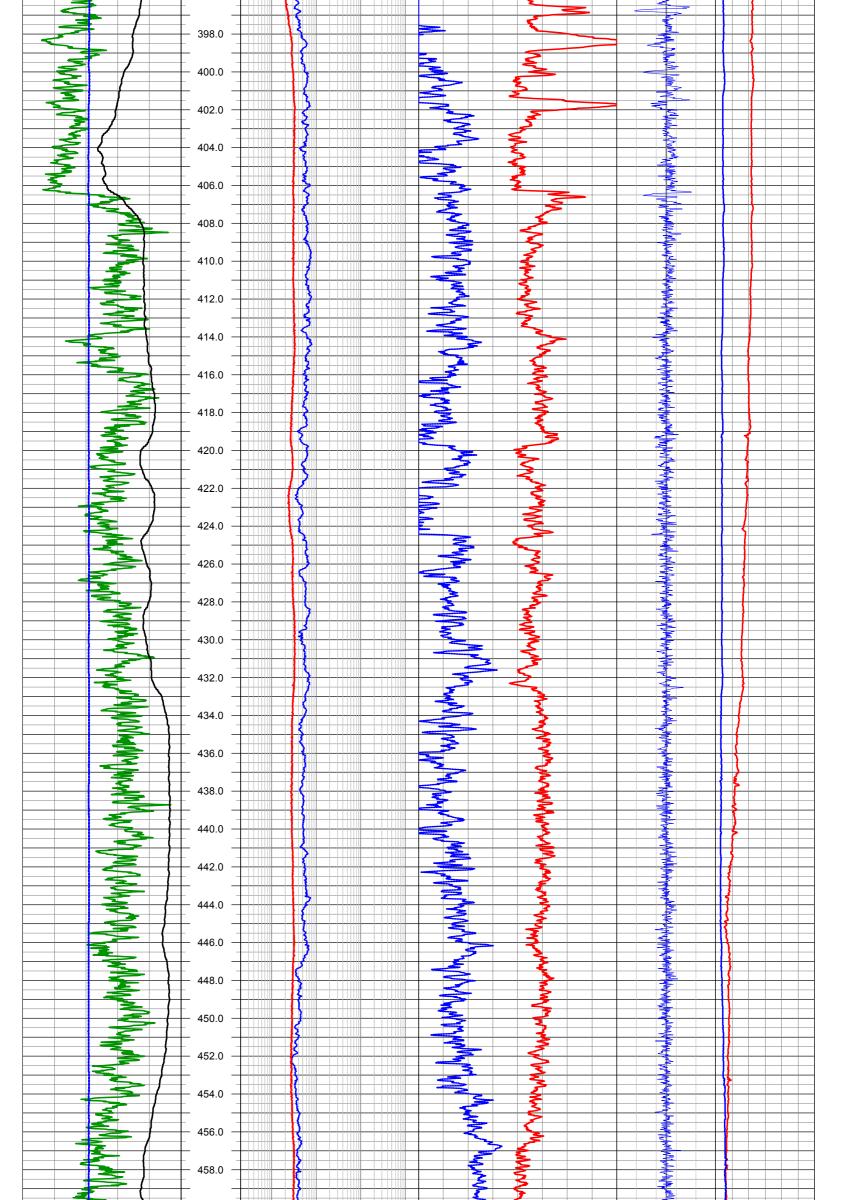


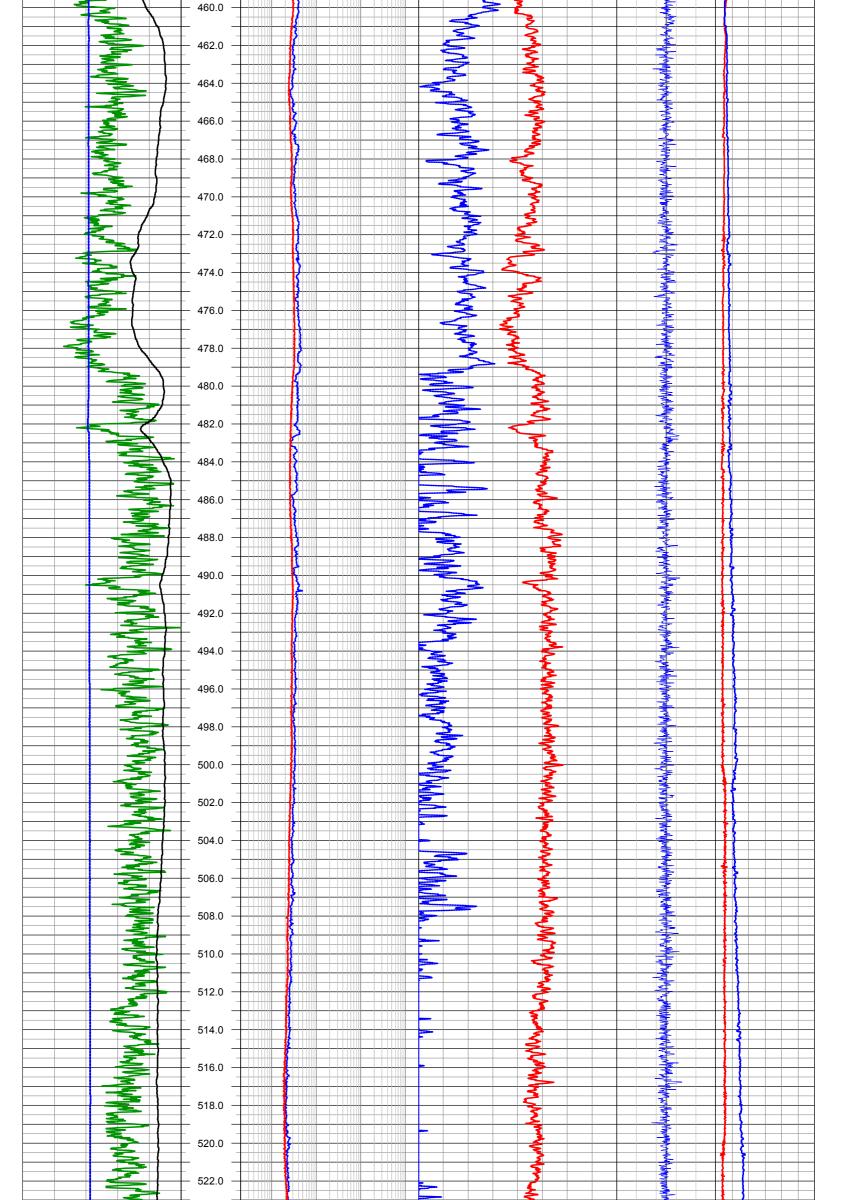


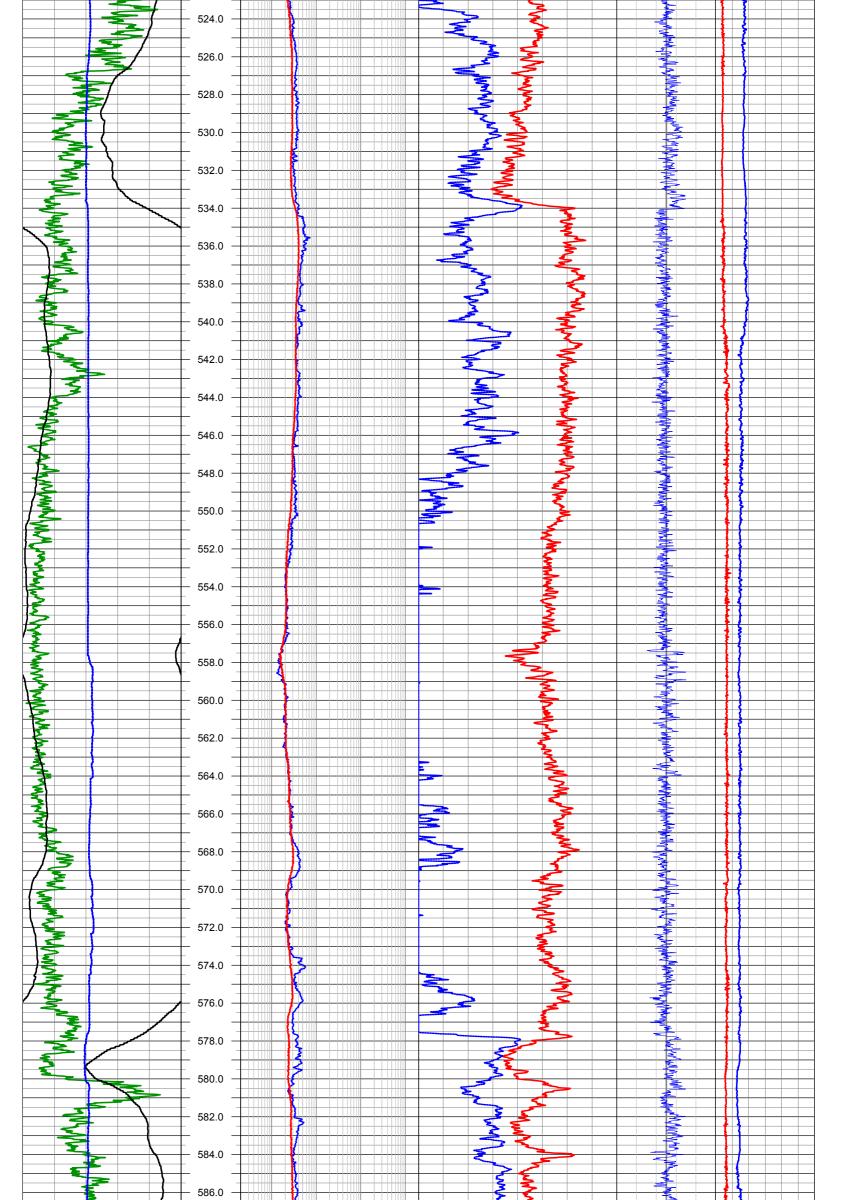


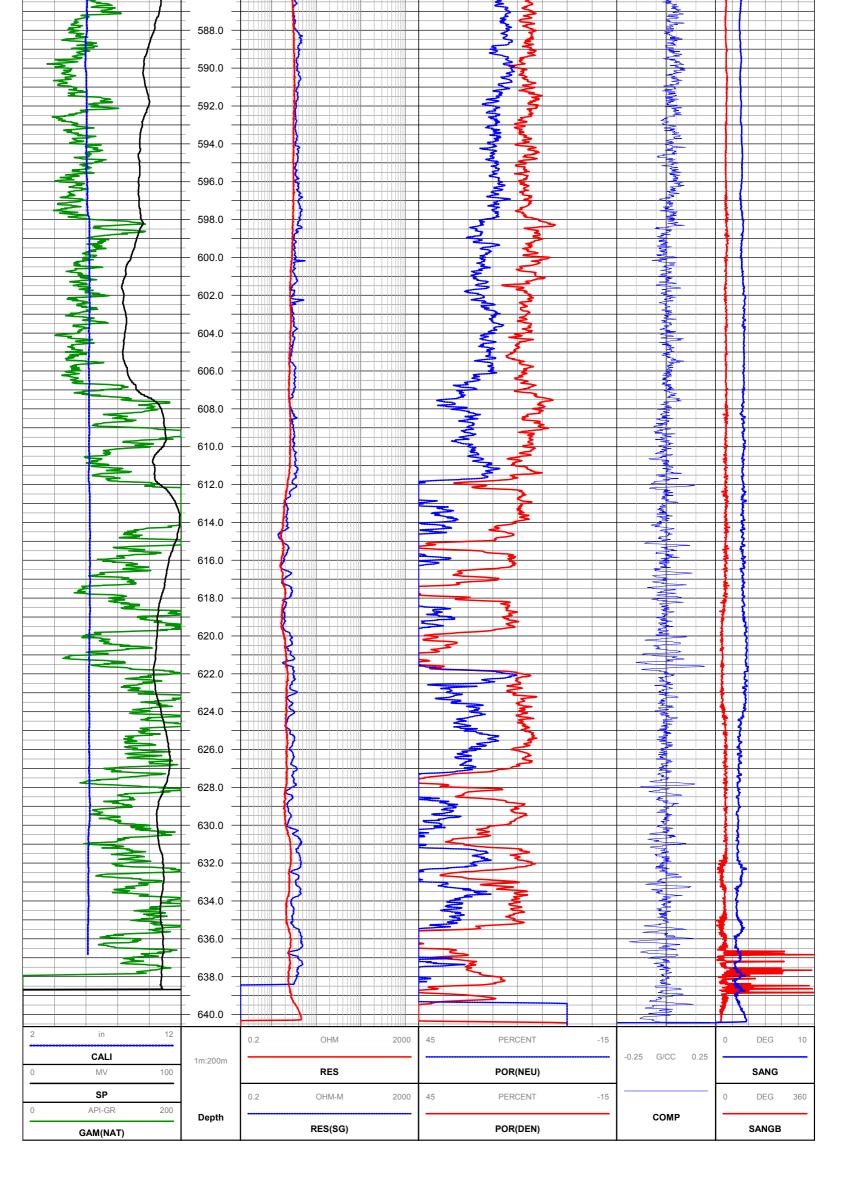














Well Completion Report



Appendix 8 – Daily Drilling Reports

	TDC						GAUG	_	RT					AUO Project Managem	
Report Well Na	L-02-17	mb Ro		Tenure Holder: Drilling Company: TD Rig Description: Drill			Basin: ATP: Field:				Da AF	eld Est Co ays from s E days (fi E Cost :	pud:		
GL - AN	ИSL	,,, <u>u</u>	•	Current Depth (MD):	0		Casing		Depth	Si		Weight		Depth GL	Deviatio
GL- Dat ROP:	um			TVD: Progress (MD):											
Format				Proposed TD:											
Object	_			Last BOP Drill:			Last LOT Re	sults:				D - 44			
Accide	OP Test: nt Free D afety Mee nts: No			Last LTI Date: eaker Safety mtg			Cement		Тор			Bottom		-	
		ATION	I @ 06	:00HRS: Mobilise equipm	ent to site.		<u> </u>								I
				NEXT 24HRS: Mobilise to 24:00HRS: Hold Ice								accomodatio	n and :	amonitios on	
locatio			1									accomodatio	ii ana e		
From 9:00	To 12:30	Hours 3.5		eaker / Induction at Narr		FUK I	PERIOD	UU:	UU to	24:	00		Mobili	Time Coo	ie
12:30		4.5		ment in transit to site	JULI INJE								Demo	bilisation	
													Travel Rig Se		
													Other		
													Circula Drillin	ate Hole	
													Run C		
													Ceme		
													Trippi	on Cement ng	
													Loggir		
					OPERATIO	ONS FOR	PERIOD 24:0	ю то	06:00				Stand	ure Test by	
00:00	01:00	1											Safety	/ Meeting	
													Other Wait o	on Dayligh	-
													Well k	Cill	
														Time Rig Time Oth	-
														p/ Nip up	
			Note:												
	otal:	<u> </u>		1-								_	Total		
Pick Up	ing Hour Weight:	s Ioda	ıy:		Rotating Ho Black Off W		ıy:			ating W	<u>Hours:</u> eight:	0			
Slow P	ump Rate	e 1:			low Pump										
Sarety	Topics or	ncia	ents:				COMPANY:		AMC		MUD RE		UD US	AGE	
		F00 = :		1	A111 TOO		MUD BUILT:			bbl	Product	Usage	9	Product	Usage
NUMBE		ECORI	ט:	PUMP No.:	AULICS:	l	MUD LOST: MUD VOL:			bbl bbl				1	
SIZE, ir				PUMP TYPE:			Reading time			וטט					
TYPE				# of CYLINDERS:			DENSITY			ppg coc/ltr				1	
SERIAL TFA	INU.	 	+	STROKE, in LINER, in.			VISCOSITY PV / YP			sec/ltr					+
W.O.B.,	K lb.			S.P.M.			API W/L.			cc/30mi				L	
R.P.M. DEPTH	OUT: m	<u> </u>	-	RATE, GPM PRESSURE, psi.	_		CAKE pH		<u> </u>	32nd/in	Tool	Bottom Ho Lengt		embly (BHA	
DEPTH :	IN, m			AV/DP, ft./min.			GELS:			10s/10r		Lengt		.,,,,,,,,,	
METERA HOURS				AV/DC, ft./min.			CHLOR.		 	mg/L				<u> </u>	
R.O.P.,			+	JET VEL., ft./sec. BIT HHP.			CALCIUM EXC. LM.			mg/L ppb		+		-	
CONDIT	ΓΙΟΝ			PUMP HHP.			SOLIDS			% Vol					
Drill Pip		JLARS	:	E.C.D., ppg. H.S.I.			SAND KCL			%Vol % Wt		1			
Joints C	nsite:			Shaker Screens:			PHPA			/U WIL					
Joints I		<u> </u>		Solids Control:			Pf/Mf			nnh					-
	g hours: II/Torque:	<u> </u>					M.B.T.			ppb	Total				
		•													

I.A.D.C. DULL GRADING: 1

Rig Contact (On Site)

Inside 0

Position
Company Man
Rig Manager

Name Jordan Bunning Andrea Strand

 Outside
 Damage Location Bearings
 Gauge
 Other
 Reason

 0
 NO
 A
 X
 I
 NO
 TD

Name Mobile# Position
Scott Hobday 0431 453 550 Drilling Engineer
Phil Hammatt 0488 484 896 Geologist

Comment

Mobile # 0405 727 677 0427 685 808

TDC **TDC - INGAUGE INGAUÐE** H **DAILY DRILLING REPORT** Field Est Cost: Date: 2-02-17 Tenure Holder: DPT Water **Drilling Company: TDC Drilling** Rig Description: Drillmec G55 Days from spud: Report No: 2 Tenure Type: Forest Permit Well Name: Plumb Road 1 Landowner: Forestry Corporation of NSW Target Basin: AFE days (from spud): AFE Cost : Weight Client Name: DPI Water Current Depth (MD): 0 Size Depth GL Deviation Casing Depth GL- Datum TVD: ROP: Formation : Progress (MD): Proposed TD: Last LOT Results: n/a Objective: Last BOP Test: Last BOP Drill: Bottom Cement Top Accident Free Days : 2 Last LTI Dat Last Safety Meeting : Morning Toolbox mtg Last LTI Date: Accidents: No. CURRENT OPERATION @ 06:00HRS: Preparing to spot Rig sub base on site. PLANNED OPERATIONS FOR NEXT 24HRS: Spot sub-base, carrier and pipe handler and proceed with rig-up. SUMMARY OF PERIOD 00:00 to 24:00HRS: Continue rig-up of site accomodation, Unload wellheads, 4 loads arrived on site. Operation Hours **OPERATIONS FOR PERIOD 00:00 to 24:00 Time Code** From To 6:00 12:30 Hours 6.5 Transport equipment to site Mobilisation 12:30 18:00 5.5 Rig carrier, pipe hander and sub-base arrived on site Demobilisation Unloaded sub-base stairs and miscelaneous equipment Travel Repair axle of trailer damaged in transit. Rig Service 00:00 18:00 Received Generator package, pipe racks and pup joints to site. Other Continue to mobilise and rig up. Circulate Hole Drilling Run Casing Cementing Wait on Ceme Tripping Logging OPERATIONS FOR PERIOD 24:00 TO 06:00 Pressure Test Standby 01:00 00:00 Safety Meeting Other Wait on Dayligh Well Kill Down Time Rig Down Time Oth Rig up/ Nip up

Total Total: Operating Hours Today: Pick Up Weight: Slow Pump Rate 1: Rotating Hours Today: Slack Off Weight: Slow Pump Rate 2: Break Down Hours: 0 Rotating Weight:

Note: Note:

Safety Topics or	Incidents:					MUD RECORD						
						OMPANY:		AMC		MUD US	AGE	
					M	1UD BUILT:		bbl	Product	Usage	Product	Usage
BIT RE	CORD:		HYDRAU	ILICS:	Μ	1UD LOST:		bbl				
NUMBER		PUMP No.:			M	1UD VOL:		bbl				
SIZE, in.		PUMP TYPE	:		R	leading time						
TYPE		# of CYLIN	DERS:		D	ENSITY		ppg				
SERIAL No.		STROKE, ir	1		V	ISCOSITY		sec/ltr				
TFA		LINER, in.				V / YP						
W.O.B.,K lb.		S.P.M.			А	PI W/L.		cc/30n				
R.P.M.		RATE, GPM			C	AKE		32nd/i	n	Bottom Hole Ass	embly (BH	A)
DEPTH OUT, m		PRESSURE	psi.		р	Н			Tool	Length	Type/De	escription
DEPTH IN, m		AV/DP, ft./	min.		G	ELS:		10s/10	r 1	0.27 m	PD	C Bit
METERAGE		AV/DC, ft./	min.		C	HLOR.		mg/L	2	2.28 m	N/B S	tabilizer
HOURS		JET VEL., f	t./sec.		C	ALCIUM		mg/L	3	9.24 m	6 1/	4" DC
R.O.P., m/hr.		BIT HHP.				XC. LM.		ppb	4	2.33 m		g Stab
CONDITION		PUMP HHP.			S	OLIDS		% Vol	5	36.97 m	4 X 6 1	L/4" D/C
TUBUI	ARS:	E.C.D., ppg].		S	AND		%Vol	6	0.52 m		:/0
Drill Pipe:		H.S.I.			K	CL		% Wt	7	36.90 m	4 x 3 1/	2" HWDP
Joints Onsite:		Shaker Scr	eens:		P	HPA						
Joints In hole:		Solids Cont	rol:		P	f/Mf						
Rotating hours:					M	1.B.T.		ppb				
Max Pull/Torque:									Total	88.51 m		
	Bit No	o. Inside	Outside		Location	Bearings	Gauge		Reason	Co	mment	
I.A.D.C. DULL GRAD	0	0	NO	Α	Х	I	NO	TD				
			Nam	e	Mobile#	Po	sition	Nar	ne	Mobile #		
Rig Contact (0	On Site)	Company Man	Scott Ho	bday	0431 453 55	0 Drilling	Engineer	Jordan E			77	
i		Rig Manager	Phil Ham	nmatt	0488 484 89		ologist	Andrea	Strand	0427 685 8	08	





Report No: 3

Tenure: Forest Permit Landowner: Forestry Corporation of NSW

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Depth

Top

Casing

Cement

Last LOT Results: n/a

Field Est Cost: Days from spud : AFE days (from spud):

Well Name: Plumb Road 1

Client Name: DPI Water GL - AMSL

Current Depth (MD): 0

GL- Datum TVD: ROP: Formation

Progress (MD): Proposed TD:

Rig Manager

Phil Hammatt

AFE u... AFE Cost : Weight Depth GL Deviation

Objective: Last BOP Test: Last BOP Drill:

Accident Free Days : 3 Last Safety Meeting: Morning Toolbox mtg Bottom

Size

Accidents: No
CURRENT OPERATION @ 06:00HRS: Continue rig up, Prepare carrier for raising.

PLANNED OPERATIONS FOR NEXT 24HRS: Complete rig up, Raise mast and function.

SUMMARY OF PERIOD 00:00 to 24:00HRS: Continued to unload equipment from trucks, spotted sub-base, carrier and mud tanks. General rig up.

Mole		tion Ho		OPERATIONS FOR PERIOD 00:00 to 24:00	Time Code				
Spotted sub-base, pipe handler. Installed iron roughneck to mast. Unloaded and spotted Geo site office Der						oue			
12:00 6 Pinned carrier support pyramids stands. Installed support ram to sub-base. Spotted carrier onto sub-base Tra Welder completed modifications to pipe handler, spotted shaker tank. Installed Pason screens and rigged up Rig 18:00 6 rig floor. Replaced 2 x alronolitions to mini camp buildings. Received 24,000 litres water for day tank. Oth Held Pre Tour Safety mtg, Rigged up stairs, hand rails, lights and hoses to shaker tank. Spotted suction Circ tank, rigged up suction hose, equalizerline, stairs and lights. Spotted mud pump trailer and rigged up same. Dril carried with the provided pump trailer and rigged up same. Purple of tank, rigged up suction hose, equalizerline, stairs and lights. Spotted mud pump trailer and rigged up same. Purple of tank, rigged up same and rigged up same. Purple of tank, rigged up saction for callibration. Operations for Period 24:00 to 06:00 Pre Cer Operations for Period 24:00 Pre Cer Operati	C	06:00	6		Mobilisation				
12:00 Welder completed modifications to pipe handler, spotted shaker tank. Installed Pason screens and rigged up rig floor. Replaced 2 x airconditions to mini camp buildings. Received 24,000 litres water for day tank. Oth Held Per Cour Safety mtg, Rigged up stairs, hand rails, lights and hoses to shaker tank. Spotted suction Circ tank, rigged up suction hose, equalizerline, stairs and lights. Spotted mud pump trailer and rigged up same. Dril Rur Cer Note: Passon tech arrived on location for callibration. Was Department of the passon tech arrived on location for callibration. Was Department of the passon tech arrived on location for callibration. States of the passon tech Rigges of the passon tech arrived on location for callibration. States of the passon tech Rigges of the passon tech arrived on location for callibration. States of the passon tech Rigges of the passon tech arrived on location for callibration. States of the passon tech arrived on location for callibration. States of the passon tech arrived on location for callibration. States of the passon tech arrived on location for callibration. States of the passon tech arrived on location for callibration. States of the passon tech arrived on location for callibration. States of the passon tech arrived on location for callibration. States of the passon tech arrived on location for callibration. States of the passon tech arrived on location for callibration. States of the passon tech arrived on location for callibration. States of the passon tech arrived on location for callibration. States of the passon tech arrived on location for callibration. States of the passon tech arrived on location for callibration. States of the passon tech arrived on location for callibration and lights. Spotted mud pump trailer and rigged up same. Passon tech arrived on location for callibration and lights. Spotted mud pump trailer and rigged up same. Passon tech arrived on location for callibration and location for callibration and location for callibration and location fo					Demobilisation				
18:00 6 rig floor. Replaced 2 x airconditions to mini camp buildings. Received 24,000 litres water for day tank. 18:00 Held Pre Tour Safety mtg, Rigged up stairs, hand rails, lights and hoses to shaker tank. Spotted suction Circ tank, rigged up suction hose, equalizerline, stairs and lights. Spotted mud pump trailer and rigged up same. Purious Passon tech arrived on location for callibration. Note: Passon tech arrived on location for callibration. Pre OPERATIONS FOR PERIOD 24:00 TO 06:00 PRE OPERATION 24:00 TO 0	1	12:00	6		Travel				
18:00 Held Pre Tour Safety mtg, Rigged up stairs, hand rails, lights and hoses to shaker tank. Spotted suction 24:00 6 tank, rigged up suction hose, equalizerline, stairs and lights. Spotted mud pump trailer and rigged up same. Rur Cer Note: Passon tech arrived on location for callibration. Wa OPERATIONS FOR PERIOD 24:00 TO 06:00 Pre ODERATIONS FOR PERIOD 24:00 TO 06:00 Sta 00:00 06:00 6 Spotted Rig generator trailer, run all electrical cables. Continue with general rig up. OD					Rig Service				
24:00 6 tank, rigged up suction hose, equalizerline, stairs and lights. Spotted mud pump trailer and rigged up same. Rur Cer Note: Passon tech arrived on location for callibration. Wa OPERATIONS FOR PERIOD 24:00 TO 06:00 Pre Sta 00:00 06:00 6 Spotted Rig generator trailer, run all electrical cables. Continue with general rig up. OBO Rig Rig Rig Note: Note:	1	18:00	6		Other				
Rur Cer Note: Passon tech arrived on location for callibration. Trig Log OPERATIONS FOR PERIOD 24:00 TO 06:00 Pre Stat 00:00 06:00 Spotted Rig generator trailer, run all electrical cables. Continue with general rig up. Saf Oth Wa We Doo Rig				Held Pre Tour Safety mtg, Rigged up stairs,hand rails,lights and hoses to shaker tank. Spotted suction	Circulate Hole				
Note: Passon tech arrived on location for callibration. Wa	2	24:00	6	tank, rigged up suction hose, equalizerline, stairs and lights. Spotted mud pump trailer and rigged up same.	Drilling				
Note: Passon tech arrived on location for callibration. Note: Passon tech arrived on location for callibration. Wa					Run Casing				
Trip Log OPERATIONS FOR PERIOD 24:00 TO 06:00 Pre State O0:00 06:00 6 Spotted Rig generator trailer, run all electrical cables. Continue with general rig up. State Oth Wa We Doo Rig					Cementing				
Log				Note: Passon tech arrived on location for callibration.	Wait on Cemen				
OPERATIONS FOR PERIOD 24:00 TO 06:00 Pre Sta 00:00 O6:00 Sta O0:00 Office Wa We Dov Rig Rig Note:					Tripping				
Sta 00:00 06:00 6 Spotted Rig generator trailer, run all electrical cables. Continue with general rig up. Saf Oth Wa We Dov Rig					Logging				
00:00 06:00 6 Spotted Rig generator trailer, run all electrical cables. Continue with general rig up. Oth Wa Dov Dov Rig				OPERATIONS FOR PERIOD 24:00 TO 06:00	Pressure Test				
Oth Wa Wa Doo Doo Rig					Standby				
Wa We Dow Rig	C	06:00	6	Spotted Rig generator trailer, run all electrical cables. Continue with general rig up.	Safety Meeting				
We Down Down Down Rig					Other				
Dov. Dov. Dov. Rig					Wait on Dayligh				
Down Rig					Well Kill				
Rig					Down Time Rig				
Note:					Down Time Oth				
					Rig up/ Nip up				
					1				
					1				
				Note:	1				
				Note:	1				
	ta	al:			Total				

Operating Hours Today: Pick Up Weight: Slow Pump Rate 1: Rotating Hours Today: Slack Off Weight: Break Down Hours: 0 Rotating Weight:

Slow Pump Rate 1:			SIOV	v Pump k	tate 2:								
Safety Topics or Inci	dents:						MUD RECORD						
						COMPANY:		AMC		MUD US	AGE		
						MUD BUILT		bl	ol Product	Usage	Product	Usage	
BIT RECOR	D:		HYDRAU	JLICS:		MUD LOST:		bl	ol				
NUMBER		PUMP No.:				MUD VOL:		bl	ol				
SIZE, in.		PUMP TYPE:				Reading time							
TYPE		# of CYLINE	DERS:			DENSITY		ppg					
SERIAL No.		STROKE, in				VISCOSITY		sec/It	r				
TFA		LINER, in.				PV / YP							
W.O.B.,K lb.		S.P.M.				API W/L.		cc/30	m				
R.P.M.		RATE, GPM				CAKE		32nd,	/in	Bottom Hole Asse	embly (Bi	IA)	
DEPTH OUT, m		PRESSURE,	psi.			pН			Tool	Length	Type/D	escription	
DEPTH IN, m		AV/DP, ft./n	nin.			GELS:		10s/1	.Or 1				
METERAGE		AV/DC, ft./r	nin.			CHLOR.		mg/L	2				
HOURS		JET VEL., ft.	/sec.			CALCIUM		mg/L	3				
R.O.P., m/hr.		BIT HHP.				EXC. LM.		ppb	4				
CONDITION		PUMP HHP.				SOLIDS		% Vo	J 5				
TUBULARS	S:	E.C.D., ppg				SAND		%Vol	6				
Drill Pipe:		H.S.I.				KCL		% Wt	: 7				
Joints Onsite:		Shaker Scre	ens:			PHPA							
Joints In hole:		Solids Contr	ol:			Pf/Mf							
Rotating hours:						M.B.T.		ppb					
Max Pull/Torque:									Total				
	Bit No	. Inside	Outside	Damage	Locatio	n Bearing:	Gauge	Other	Reason	Cor	mment		
I.A.D.C. DULL GRADING:	: 1												
		Position	Nam	ne	Mobile#	Po	osition	Na	ime	Mobile #			
Rig Contact (On Si	ite)	Company Man	Scott Ho		0431 453 5		g Engineer		Bunning	0405 727 67		•	
I	Ī	Dia Managar	Dhil Han		0400 404 0	06 06	alagiot	Andro	Ctrond	0427 695 90	10		

Andrea Strand

0427 685 808

TDC

Date: 4-02-17

ROP:

TDC - INGAUGE DAILY DRILLING REPORT



Depth GL Deviation

Report No: 4
Well Name: Plumb Road 1
Client Name: DPI Water

Tenure Holder: DPI Water Tenure: Forest Permit Landowner: Forestry Corporation of NSW

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Depth

Top

Casing

Cement

Field Est Cost: Days from spud : AFE days (from spud): AFE u... AFE Cost : Weight

Bottom

GL - AMSL GL- Datum

Current Depth (MD): 0 TVD: Progress (MD): Proposed TD:

Last LOT Results: n/a

Size

Formation :
Objective:
Last BOP Test: Last BOP Drill:

Last BOP Test:
Accident Free Days: 4
Last LTI Date:
Last Safety Meeting: Morning Toolbox mtg
Accidents: No
CURRENT OPERATION @ 06:00HRS: Continue general rig up.

PLANNED OPERATIONS FOR NEXT 24HRS: Complete rig up, Drill and install conductor.

SUMMARY OF PERIOD 00:00 to 24:00HRS: Completed spotting remaining loads, raised carrier and mast. Continued with general rig up.

	ation Ho		OPERATIONS FOR PERIOD 00:00 to 24:00	Time Code		
rom		Hours				_
0:00	06:00		Spotted Rig generator trailer, run all electrical cables. Continue with general rig up.	Mobilisation		_
5:00	40.00		Held Pre Tour Safety mtg, Striped down and inspected mud pump liners, Removed swivel joint from Top Head	Demobilisation		_
	12:00	6	Drive stripped down and serviced. Received 5,800 L of diesel. Pason tech continue with rig up.	Travel		_
2:00			Received 1 x trailer of drill pipe.Received 24,000L water for mud tanks, Filled up rig hydraulic tank,	Rig Service		
	18:00	6	Rebuilt swivel joint for Top Head Drive and installed. Raised carrier to first stage onto pyramid stands.	Other		
8:00			Held Pre Tour Safety mtg, Ancored pyramid stands, Raised carrier to final height and lowered onto cannon	Circulate Hole		
			support. Installed dog collars to jack legs. Transferred fresh water from suction tank to mini skips in attaempt	Drilling		
			to seal up gates.Rigged up rig floor stairs and floor support legs. Rotated mast crown block and disconnected	Run Casing		
	24:00	6	hoses. Installed NSW Government banner to the rear of mast before raising.	Cementing		
				Wait on Cement		
			Note: Passon tech arrived on location for callibration.	Tripping		
				Logging		
			OPERATIONS FOR PERIOD 24:00 TO 06:00	Pressure Test		
				Standby		_
0:00			Rigged up rear stairs and handrails to generator trailer, Removed prime mover and installed trailer support stand	Safety Meeting		_
			Rigged up mud pump control lines to rig floor, installed rig bracing chains.Rigged up Iron roughneck hydraulic	Other		_
			lines. Raised mast and pinned same. Installed rotary tourge gauge line. Prepared 12 1/4" BHA for drilling	Wait on Dayligh		_
	06:00	6	conductor.	Well Kill		_
				Down Time Ria		_
				Down Time Oth		_
				Rig up/ Nip up		_
				rag ap, rap ap		_
-		1				-
-		1				-
		+				-
-		1			-	_
-		1			-	_
		 				_
		 				_
		1				_
						_
		1				_
			Note:			_
	_		Note:			_
To	tal:			Total		

Operating Hours Today: Pick Up Weight: Rotating Hours Today: Slack Off Weight: Break Down Hours: 0 Rotating Weight:

Slow Pump Rate 1	1:		Slow	Pump R	ate 2:											
Safety Topics or I	ncidents:		•								MUD R	ECORD				
						COMPA	ANY:		AMC			MUD USAGE				
						MUD I	BUILT:			bbl	Product	Usage	Product	Usage		
BIT REC	CORD:		HYDRAU	JLICS:		MUD I	LOST:			bbl						
NUMBER		PUMP No.:				MUD Y	VOL:			bbl						
SIZE, in.		PUMP TYPE:	:			Readin	ng time									
TYPE		# of CYLINE	DERS:			DENSI	TY			ppg						
SERIAL No.		STROKE, in				VISCO	SITY			sec/ltr						
TFA		LINER, in.				PV / '	YP									
W.O.B.,K lb.		S.P.M.				API W	//L.			cc/30n	ni					
R.P.M.		RATE, GPM				CAKE				32nd/i	n	Bottom Hole Asse	mbly (BH/	١)		
DEPTH OUT, m		PRESSURE,	psi.			рН					Tool	Length	Type/D	escription		
DEPTH IN, m		AV/DP, ft./r	nin.			GELS:				10s/10	r 1					
METERAGE		AV/DC, ft./r	min.			CHLOR	₹.			mg/L	2					
HOURS		JET VEL., ft	./sec.			CALCI	UM			mg/L	3					
R.O.P., m/hr.		BIT HHP.				EXC. L				ppb	4					
CONDITION		PUMP HHP.				SOLID	S			% Vol	5					
TUBUL	ARS:	E.C.D., ppg				SAND				%Vol	6					
Drill Pipe:		H.S.I.				KCL				% Wt	7					
Joints Onsite:		Shaker Scre	eens:			PHPA										
Joints In hole:		Solids Cont	rol:			Pf/Mf										
Rotating hours:						M.B.T.				ppb						
Max Pull/Torque:											Total					
	Bit No	o. Inside	Outside	Damage	Locatio	n Bea	arings	Gauge	Otl	ner	Reason	Con	ıment			
I.A.D.C. DULL GRAD	ING: 1															
	·	Position	Nam	_	Mobile#	¥	Po	sition		Nan	пе	Mobile #				
Rig Contact (C	n Site)	Company Man	Scott Ho		0431 453			Engineer		ordan B		0405 727 677				
		Rig Manager	Phil Han	nmatt	0488 484 8	896	Geo	ologist		Andrea	Strand	0427 685 808	3			

TDC

TDC - INGAUGE DAILY DRILLING REPORT



Date: 5-02-17 Report No: 5 Well Name: Plumb Road 1

Tenure Holder: DPI Water Drilling Company: TDC Drilling Rig Description: Drillmec G55 Landowner: Forestry Corporation of NSW Target Basin:

Casing

Depth

Size

Field Est Cost: Days from spud : AFE days (from spud):

Client Name: DPI Water
GL - AMSL
GL- Datum

Current Depth (MD): 0 TVD:

AFE uu. AFE Cost : Weight Depth GL Deviation

Progress (MD): Proposed TD: ROP: Formation : Objective: Last BOP Test: ast LOT Results: Last BOP Drill: Bottom Cement Top Accident Free Days : 5 Last LTI Date: Last Safety Meeting : Morning Toolbox mtg

Accidents: No
CURRENT OPERATION @ 06:00HRS: Realine mast to hole center.

PLANNED OPERATIONS FOR NEXT 24HRS: Complete rig up, Drill and install conductor. Wait on cement. Make up 8 1/2" BHA.

SUMMARY OF PERIOD 00:00 to 24:00HRS: Continued to rig up, made up Top Head Drive subs and picked up drill collar. Repostion pipe handler

	ation Ho			0	PFRΔT	TON	S FOR	PFRT	OD	00:0	nn t	ი 24:	00		Tim	e Code	,
From 00:00	То	Hours	Diggod	rear stairs ar										cupport stand	Mobilisation		_
00:00				o rear stairs ar o mud pump c											Demobilisation	n	
				sed mast and											Travel	////	
	06:00	6	conducto	r.											Rig Service		
06:00				cellar cover a											Other		
				d instalation o										and gazzle	Circulate Hol	e	
	18:00	12		system. Seale									cip bins.		Drilling Run Casing		+
18:00	18:30	0.5		kly safety mee					Dili	una 5 5	,, 0 - 00	ising.			Cementing	+	
18:30			Installed	drive subs to	Гор Head D	rive, He	ld pre job s	afety m	tg pic	king up	drill co	ollars. Pic	ked up di	rill collar and	Wait on Cem	ent	
				mast, trialled											Tripping		
	24:00		handler a	nd reposition.	Broke out	5ft pup	joint and re	placed v	vith 3	ft pup jo	oint an	id made	up Top He	ead Drive.	Logging Pressure Tes		
	24:00	5.5	Ріскей ир	drill collar an	ı iayed out	, pipe na	andier in co	rrect pos	Sition	. worke	u on n	iua pum	iners.		Standby	_	+
															Safety Meeti	na	
						PERAT	IONS FOR	PERIO	D 24:	00 TO	06:00				Other	.,	
															Wait on Day	igh	
00:00				d working on r											Well Kill		
	06:00	6	hit brook	top and botto er and installe	n jaws on i	ron roug	gnneck,insta	alled bit	break	ker and I	made	up 12 1/	4" bit. Re	moved	Down Time F Down Time (_
	00.00	U	DIL DI EAK	er and modifie	a jawa III III	Jii Tuugi	IIICUK. FILKE	su up o .	±/≒ (arill Colla	ıı anu	maue up	Jaille.		Rig up/ Nip		
															rag up/ rap		
-															-		+
																-	+
																+	
																	-
To	tal:														Total		-
	ing Hours	Toda	v:		Rota	ting Ho	urs Today	·:			Bre	ak Dow	n Hours:	0	. oca.	- 1	1
Pick Up	Weight:		•		Slac	k Off V	Veight:				Rot	ating W	eight:				
	ump Rate				Slov	/ Pump	Rate 2:	_									
Safety	Topics or	Incid	ents:					COMPAN	NIV.		AMC		MUDR	ECORD	DUSAGE		
								MUD B			AMC	bbl	Product	Usage	Proc	uct	Usage
	BIT R	ECORE):	I	HYDRAU	JLICS:		MUD LO				bbl	TTOUUCE	osage	1100	ucc	osage
NUMBER				PUMP No.:		1		MUD V				bbl					
SIZE, in				PUMP TYPE:				Reading									
TYPE				# of CYLINE		3		DENSIT				ppg					
SERIAL TFA	NO.		-	STROKE, in LINER, in.		7		VISCOS PV / Y				sec/ltr					
W.O.B.,	K lh.			S.P.M.	1	/		API W/		1		cc/30m					
R.P.M.				RATE, GPM				CAKE		1		32nd/ir	1	Bottom Hole	Assembly (зна)	
DEPTH (PRESSURE,	psi.			pH				,	Tool	Length			ription
DEPTH I	N, m			AV/DP, ft./r	nin.			GELS:				10s/10i	1				•
METERA	GE			AV/DC, ft./r				CHLOR.				mg/L	2				
HOURS	m/hr		-	JET VEL., ft BIT HHP.	/sec.			EXC. LM		-		mg/L ppb	3 4				
R.O.P., I	ION			PUMP HHP.				SOLIDS		1		% Vol	5		-		
55.1511		ILARS	: -	E.C.D., ppg				SAND				%Vol	6		1		
Drill Pipe				H.S.I.				KCL				% Wt	7				
Joints O	nsite:			Shaker Scre				PHPA								•	
Joints In				Solids Conti	ol:			Pf/Mf									
Rotating	hours: I/Torque:			_				M.B.T.				ppb	Total				
riax ruli	, rorque.		Bit No.	Inside	Outside	Dama	ge Locatio	n Bear	ringe	Gauge	O t	her	Reason		Comment		
I.A.D.C.	DULL GRA	DING:		11.3146	Judiuc	Zamay	- Locatio	Seal	g3	Jauge					Comment		
L																	
				Position	Nam		Mobile			sition		Nam			bile#		
Ri	g Contact	(On Sit	e)	Company Man	Scott Ho		0431 453			Enginee	er .	Jordan B			727 677	_	
				Rig Manager	Phil Han	nmatt	0488 484	გ96	Geo	ologist		Andrea S	trand	0427	685 808		





Depth GL Deviation

Date: 6-02-17 Report No: 6

Tenure Holder: DPI Water **Tenure: Forest Permit**

Current Depth (MD): 0

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Field Est Cost: Days from spud: AFE days (from spud):

Well Name: Plumb Road 1 Client Name: DPI Water

Landowner: Forestry Corporation of NSW

Casing

AFE Cost : Weight

GL- Datum ROP: Formation TVD: Progress (MD): Proposed TD:

Last BOP Drill:

Position

Company Man

Rig Manager

Rig Contact (On Site)

Name

Scott Hobday

Phil Hammatt

K55 12.0 mGL 9 5/8"

Depth

ast LOT Results: n/a

Cement Тор

Bottom

Size

Last BOP Test:

GL - AMSL

Objective:

Accident Free Days : 6 Last LTI Date: Last Safety Meeting: Morning Toolbox mtg

Surface 12m

CURRENT OPERATION @ 06:00HRS: Making up 8 1/2" BHA.

PLANNED OPERATIONS FOR NEXT 24HRS: Wait on cement, Make up 8 1/2" BHA. Drill surface hole to +/- 160m. Circulate hole clean. TOOH

SUMMARY OF PERIOD 00:00 to 24:00HRS: Completed rig up. Drilled 12 1/4" hole and cemented conductor. Waited on cement. Prepared 8 1/2" BHA.

Oper	ration Ho	urs		Time Code		
From	To	Hours	OPERATIONS FOR PERIOD 00:00 to 24:00		Time Co	ue
00:00			Continued working on mud pump realine liners and bird cage. Made up 12 1/4" BHA, Picked up bit	breaker and Mob	bilisation	
			removed top and bottom jaws on iron roughneck, installed bit breaker and made up 12 1/4" bit. Re	moved Der	mobilisation	
	06:00	6	bit breaker and installed jaws in iron roughneck. Picked up 6 1/4" drill collar and made up same.	Tra	ivel	
06:00			Held Pre Tour Safety mtg, Removed dog collars from levelling jacks and removed tie down chains,	levelled Rig	Service	
			mast and resecured. Replaced seized valve on stand pipe disharge line. Layed out 6 1/4" drill colla	r. Rigged up Oth	ner	
	12:00	6	and circulated through system, functioned sand gazzler.	Circ	culate Hole	
12:00			Continued to circulate through system varying pump speeds. Repaired leaking 3" valve on mud pu	mp discharge Dril	lling	
	15:00	3	line,stripped down and removed debrie from mixing hopper.		n Casing	
15:00	15:45	0.75	Made up 12 1/4" BHA and bit.	Cen	menting	
15:45	17:00	1.25	Drilled 12 1/4" hole to 16.2m RKB.	Wai	it on Cement	
17:00	18:00	1	TOOH to surface laying out drill collars and bit.	Trip	pping	
18:00			Held Pre Tour Safety mtg, Picked up 1 joint 9 5/8" casing and TIH. Circulate and wash casing to be	ttom. Mix Log	gging	
	21:30	3.5	and pump cement. Conductor shoe at 12m from ground level.	Pre	ssure Test	
21:30	24:00	2.5	Waited on cement. Measure and strap 8 1/2" BHA. Changed out liners from 5" to 5 1/2".	Sta	indby	
				Saf	fety Meeting	
				Oth	ner	
				Wai	it on Dayligh	
			OPERATIONS FOR PERIOD 24:00 TO 06:00	Wel	ll Kill	
				Dov	wn Time Rig	
00:00			Waited on cement. Continued to change out pump liners from 5" to 5 1/2". Prepared and loaded ra	cks with Dov	wn Time Oth	
			8 1/2" BHA straped and clean same. Picked up and broke out cross over sub from 6 1/4" drill colla	r. Rig	g up/ Nip up	
	06:00	6	In progress picking up 8 1/2" BHA and bit. Prepared drilling fluid. Loaded 13 x 7" casing onto racks	S		
				ĺ	İ	
		İ				
To	otal:	İ		Tota	al	
Operati	ing Hours	s Toda	y: Rotating Hours Today: Break Down Hour	s: 0		•
	Moiobte		Clark Off Weight: Detains Weight:			

Pick Up Weight: Slack Off Weight: Rotating Weight: Slow Pump Rate 1: Slow Pump Rate 2:

Safety Topics or Incidents:						MUD RECORD								
						COMPANY:		AMC			MUD L	JSAGE		
						MUD BUILT:			bbl	Product	Usage	Product	Usage	
BIT R	ECORD:		HYDRAU	LICS:		MUD LOST:			bbl					
NUMBER	1	PUMP No.:		1		MUD VOL:			bbl					
SIZE, in.	8 1/2"	PUMP TYPE:	F	F-500		Reading time								
TYPE	S519	# of CYLINDER	RS:	3		DENSITY			ppg					
SERIAL No.	222906	STROKE, in		8		VISCOSITY			sec/ltr					
TFA		LINER, in.		5 1/2"		PV / YP								
W.O.B.,K lb.		S.P.M.				API W/L.			cc/30n	ni				
R.P.M.		RATE, GPM				CAKE			32nd/i	n E	Bottom Hole As	ssembly (BH	A)	
DEPTH OUT, m		PRESSURE, psi	i.			pН				Tool	Length	Type/Des	scription	
DEPTH IN, m		AV/DP, ft./min.				GELS:			10s/10)n 1				
METERAGE		AV/DC, ft./min	١.			CHLOR.			mg/L	2				
HOURS		JET VEL., ft./se	ec.			CALCIUM			mg/L	3				
R.O.P., m/hr.		BIT HHP.				EXC. LM.			ppb	4				
CONDITION		PUMP HHP.				SOLIDS			% Vol	5				
TUBL	JLARS:	E.C.D., ppg.				SAND			%Vol	6				
Drill Pipe:	3 1/2"	H.S.I.				KCL			% Wt	7				
Joints Onsite:	65	Shaker Screens	s:			PHPA								
Joints In hole:		Solids Control:				Pf/Mf								
Rotating hours:						M.B.T.			ppb					
Max Pull/Torque:										Total				
	Bit No.	Inside (Outside	Damage	Location	n Bearings	Gauge	Oth	ier	Reason		Comment		
I.A.D.C. DULL GRA	DING: 1													

Mobile#

0431 453 550

0488 484 896

Position

Drilling Eng

Geologist

Name

Jordan Bunning

Andrea Strand

Mobile #

0405 727 677

0427 685 808





Date: 7-02-17 Report No: 7 Well Name: Plumb Road 1 Tenure Holder: DPI Water Landowner: Forestry Corporation of NSW

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Field Est Cost: Days from spud : AFE days (from spud):

Client Name: DPI Water Current Depth (MD): 158m RKB GL - AMSL GL- Datum ROP: 30m/hr Formation :

TVD: 158m Progress (MD): Proposed TD:

Depth K55 12.0 mGL 9 5/8"

Size

AFE Cost : Weight Depth GL Deviation

Objective: Last BOP Test: Last BOP Drill: Accident Free Days : 7 Last LTI Date:
Last Safety Meeting : Morning Toolbox mtg

ast LOT Results Bottom Cement Top Surface 12m

Casing

Accidents : No
CURRENT OPERATION @ 06:00HRS:

PLANNED OPERATIONS FOR NEXT 24HRS:
SUMMARY OF PERIOD 00:00 to 24:00HRS: Waited on cement. Made up 8 1/2" BHA. Drilled 8 1/2" surface hole from 16.2m to 158m. Circulated hole.

TOOH from 158m to surface.

Oper	ation Ho	urs	ODERATIONS FOR REPTOR 20-20 to 24-20		
From	То	Hours	OPERATIONS FOR PERIOD 00:00 to 24:00	Time Cod	e
00:00			Waited on cement. Continued to change out pump liners from 5" to 5 1/2". Prepared and loaded racks with	Mobilisation	
			8 1/2" BHA straped and clean same. Picked up and broke out cross over sub from 6 1/4" drill collar.	Demobilisation	
	06:00	6	In progress picking up 8 1/2" BHA and bit. Prepared drilling fluid. Loaded 13 x 7" casing onto racks.	Travel	
06:00	09:00		Picked up and made up 8 1/2" BHA.	Rig Service	
09:00	12:00	3	Drilled 8 1/2" surface hole from 16.2m to 49m.	Other	
12:00	15:00	3	Drilled 8 1/2" surface hole from 49m to 86m	Circulate Hole	1.00
15:00			Drilled 8 1/2" surface hole from 86m to 130m. Halliburton arrived on location at 17:00hrs and spotted	Drilling	11.25
	18:00	3	equipment	Run Casing	
18:00	20:15	2.25	Drilled 8 1/2" surface hole from 130m to 158m.	Cementing	
20:15	21:15	1	Circulated hole clean while receprocating drill string.	Wait on Cemen	6.00
21:15	21:30	0.25	Flow checked, Laid out 1 joint and dropped survey.	Tripping	
21:30	24:00	2.5	TOOH from 158m to surface, Recovered survey, broke out and laid out bit.	Logging	
				Pressure Test	
				Standby	
				Safety Meeting	
				Other	
				Wait on Dayligh	
			OPERATIONS FOR PERIOD 24:00 TO 06:00	Well Kill	
				Down Time Rig	
00:00	00:45	0.75	Held Pre Job Safety mtg, Rigged up to run 7" casing.	Down Time Oth	
00:45	05:00	4.25	Made up float and shoe track, checked floats. TIH with 7" casing to setting depth at 156.02m	Rig up/ Nip up	
05:00	06:00	6	Circulated hole clean, Rigged up Halliburton.		
			Note: 1 x male activist arrived at site approx 10:15 and left at 10:45am. Walked around the fence line		
			taking photos.		
			Note: Prime 7 news arrived at location at 11:30, recording footage. Left loaction at 11:45am.		
			Note: Received 4 x 6m skip bins on the 4-2-17. Received 4 x 6m skip bins on the 7-2-17.		
			Total skip bins on site = 8		
				Takal	
	tal: ing Hour		v: Rotating Hours Today: Break Down Hours: 0	Total	24.0

Operating Hours To Pick Up Weight: Slow Pump Rate 1 Slack Off Weight: Slow Pump Rate 2: Rotating Weight: 16k

Slow Pullip Rate	ow Pullip Rate 2:									
Safety Topics o	r Incidents:						MUD R	ECORD		
				COMPANY:	Α	MC		MUD USA	GE	
				MUD BUILT:	150	bbl		Product	Usage	
BIT R	ECORD:	HYDR	RAULICS:	MUD LOST:	5	bbl		Soda Ash	1	
NUMBER	1	PUMP No.:	1	MUD VOL:		bbl		Potassium Chloride	44	
SIZE, in.	8 1/2"	PUMP TYPE:	F-500	Reading time				Ausdex	5	
TYPE	S519	# of CYLINDERS:	3	DENSITY	8.6	ppg		Sodium Chloride	10	
SERIAL No.	222906	STROKE, in	8	VISCOSITY	36	sec/ltr		Bore Seal	6	
TFA	0.773	LINER, in.	5 1/2"	PV / YP				Biocide	1	
W.O.B.,K lb.	5	S.P.M.	130	API W/L.		cc/30mi				
R.P.M.	100-120	RATE, GPM	300	CAKE		32nd/in		Bottom Hole Asser	nbly (BHA)	
DEPTH OUT, m	158	PRESSURE, psi.	200	pН			Tool	Length	Type/Desc	cription
DEPTH IN, m	16.2	AV/DP, ft./min.		GELS:		10s/10r	1	0.21 m	8 1/2" PDC Bit	t
METERAGE	141.8	AV/DC, ft./min.		CHLOR.		mg/L	2	1.26 m	8 1/2" NBS W	/ float
HOURS	11.25	JET VEL., ft./sec.		CALCIUM		mg/L	3	9.20 m	6 1/4" DC	
R.O.P., m/hr.	30-40	BIT HHP.		EXC. LM.		ppb	4	1.87 m	8 1/2" String :	
CONDITION		PUMP HHP.		SOLIDS		% Vol	5	37.34 m	4 x 6 1/4" DC	
TUB	ULARS:	E.C.D., ppg.		SAND		%Vol	6	0.76 m	X/O	
Drill Pipe:	3 1/2"	H.S.I.		KCL	2.5	% Wt	7	91.66 m	10 x 4 3/4" Do	С
Joints Onsite:	65	Shaker Screens:		PHPA			8	18.51 m	2 x 3 1/2" HW	/DP
Joints In hole:		Solids Control:	•	Pf/Mf						
Rotating hours:			·	M.B.T.		ppb				
Max Pull/Torque:							Total	160.81 m		

Bit No. Inside Outside Damage Location Bearings Gauge Other Reason Comment I.A.D.C. DULL GRADING: ΙN Position Name Mobile # 0405 727 677 Name Company Man Rig Manager Scott Hobday Phil Hammatt Rig Contact (On Site) Jordan Bunning





Date: 8-02-17 Report No: 8 Well Name: Plumb Road 1 Client Name: DPI Water

Accidents : No

Tenure Holder: DPI Water Tenure: Forest Permit Landowner: Forestry Corporation of NSW Target Basin:

Drilling Company: TDC Drilling Rig Description: Drillmec G55

Field Est Cost: Days from spud : AFE days (from spud):

AFE Cost : Weight GL - AMSL Current Depth (MD): 158m RKB Casing Depth Size Depth GL Deviation 12.0 mGL 9 5/8 7" GL- Datum TVD: 158m Progress (MD): N80 152.22 mGL 23 lb/ft ROP: Proposed TD: 630m Formation: Last LOT Results: n/a Objective: Last BOP Test: Last BOP Drill: Cement Top Bottom Accident Free Days: 8 Last LTI Date: Last Safety Meeting: Morning Toolbox mtg Surface 12m

CURRENT OPERATION @ 06:00HRS: Pressure testing BOP's.

PLANNED OPERATIONS FOR NEXT 24HRS: Pressure test BOP's, make 6 1/8" BHA. Drill out flow shoe track. Perform FIT.

SUMMARY OF PERIOD 00:00 to 24:00HRS: TIH with 7" casing to setting depth at 156.02m. Circulated, Rigged up Halliburton and cemented as per progame.

Waited on cement. Layed out landing joint.

	0:00 00:45 0.		OPERATIONS FOR PERIOD 00:00 to 24:00	Time C	ode
		Hours		Mobilisation	
			Held Pre Job Safety mtg, Rigged up to run 7" casing. Made up float and shoe track, checked floats. TIH with 7" casing to setting depth at 156.02m	Demobilisation	
5:00	06:00		Circulated hole clean, Rigged up Halliburton.	Travel	
5:00	07:15		Held Pre Job Safety mtg with Halliburton and crew, Rigged up Halliburton cement head and lines.		
7:15	07:15			Rig Service Other	
/:15			Pumped 5bbls fresh water spacer, Pressure tested surface lines to 2500psi, Pump 15bbls fresh water spacer.		
			Mixed and pump 12.6bbls of lead cement at 12.5ppg, Mixed and pumped 7.1bbls of tail cement at 15.6ppg.	Circulate Hole	
			Displaced with 19bbls fresh water at 3bbls/min, bumped plug with 150psi increasing to 1500psi 5min.	Drilling	
	20.20		Bleed back 0.3bbls. Cement returns after 16bbls into displacement. 3bbls cement to surface.	Run Casing	
	08:30		Cement in place at 08:25 hrs.	Cementing	
8:30	14:30		Waited on cement. Spotted Koomey unit and prepared equipment for nipple up.	Wait on Cement	
4:30	15:00		Slacked off 7" casing. Broke out landing joint and layed out same.	Tripping	
5:00	17:00		2 crew members short due to illness, Rig maintenance on Top Head Drive and mixing pump. Housekeeping.	Logging	
7:00	18:00		Broke out casing drive sub ,changed out X/O , installed A-section and tourque to spec.	Pressure Test	
8:00	18:30		Pre Tour Safety mtg, Layed out spud masher and $1 imes joint drill pipe.$	Standby	
8:30	21:00		Nippled up 7 1/16" 5000psi BOP stack and choke line.	Safety Meeting	
1:00			Spotted choke manifold, rigged up Koomey unit, hydraulic lines and kill line. Unable to run Koomey unit	Other	
	24:00	3	from rig generator, Power up Koomey unit from mini camp. Pressure up Koomey unit and function BOP's.	Wait on Dayligh	
			OPERATIONS FOR PERIOD 24:00 TO 06:00	Well Kill	
				Down Time Rig	
0:00			Rigged up pressure testing unit. Pressure tested A-section, casing against blind rams 500psi 5min (ok). Changed	Down Time Oth	
			out 2 x swivel joints on hard line. Tighten bolts on BOP flange. Rigged up bell nipple and flow line. Made up	Rig up/ Nip up	
			test plug, Attempted to pressure test pipe rams and annular no go. Pulled out test plug and inspect.		
	06:00	6	Rerun test plug. Opened doors on BOP and inspected pipe rams.		
			Note: Received 4 x 6m skip bins on the 4-2-17. Received 4 x 6m skip bins on the 7-2-17.		
			, ,		
			Total skip bins on site = 8	+	-
	tal:			Total	2
10	tai.			iotai	

Operating Hours Today: **Rotating Hours Today:** Break Down Hours: 0 Pick Up Weight: Slack Off Weight: **Rotating Weight:** Slow Pump Rate 1: Slow Pump Rate 2:

Safety Topics or Incidents:							MUD RECORD								
							COMPANY:		AMC				MUD USA	GE	
							MUD BUILT:		150	bb	ol		Product	Usage	
BIT R	ECORD:			HYDRA	ULICS:		MUD LOST:		5	bb	ol		Soda Ash		
NUMBER	1	2	PUMP No.:		1		MUD VOL:			bb	ol	Po	otassium Chloride		
SIZE, in.	8 1/2"	6 1/8"	PUMP TYPE:		F-500		Reading time						Ausdex		
TYPE	S519	DP408F	# of CYLIND	ERS:	3		DENSITY	8.6		ppg			Sodium Chloride		
SERIAL No.	222906	7907092	STROKE, in		8		VISCOSITY	36		sec/lt	r		Bore Seal		
TFA	0.773	0.371	LINER, in.		5 1/2"		PV / YP						Biocide		
W.O.B.,K lb.	5		S.P.M.				API W/L.			cc/30	mi				
R.P.M.	100-120		RATE, GPM				CAKE			32nd/	/in	В	ottom Hole Assei	mbly (BHA))
DEPTH OUT, m	158		PRESSURE,	psi.			pН				Too	ol	Length	Type/De	scription
DEPTH IN, m	16.2		AV/DP, ft./m	nin.			GELS:			10s/1	.0r 1			6 1/8" PDC E	Bit
METERAGE	141.8		AV/DC, ft./n	nin.			CHLOR.			mg/L	2			6 1/8" NBS V	V/ float
HOURS	11.25		JET VEL., ft.	/sec.			CALCIUM			mg/L	3			4 3/4" DC	
R.O.P., m/hr.	30-40		BIT HHP.				EXC. LM.			ppb	4			6 1/8" String	Stab
CONDITION			PUMP HHP.				SOLIDS			% Vo	I 5			9 x 4 3/4" D	С
TUBL	JLARS:		E.C.D., ppg.				SAND			%Vol	6			3 x 3 1/2" H	WDP
Drill Pipe:	3 1	L/2"	H.S.I.				KCL	2.5		% Wt	: 7				
Joints Onsite:		55	Shaker Scre	ens:			PHPA				8				
Joints In hole:			Solids Contr	ol:			Pf/Mf								
Rotating hours:							M.B.T.			ppb					
Max Pull/Torque:											Tot	al			
_	E	it No.	Inside	Outside	Damage	Locatio	n Bearings	Gaug	e 0	ther	Reaso	n	Com	ment	
I.A.D.C. DULL GRA	DING:														

	_	Bit No	Inside	Outside	Damage	Location	Bearings	Gauge	Other	Reason	Comment	
	I.A.D.C. DULL GRADING:											
ı	•	1	1	1	CT	N	Χ	IN		TD		
			Position	Nam	е	Mobile#	Po	sition	N	lame	Mobile #	
	Rig Contact (On Site	e)	Company Man Scott Hobo		bday 0431 453 550	Drilling	Drilling Engineer		n Bunning	0405 727 677		
ı			Rig Manager	Phil Han	nmatt	0488 484 896	Geo	logist	Andre	ea Strand	0427 685 808	





Date: 9-02-17 Report No: 9 Well Name: Plumb Road 1 Client Name: DPI Water

Formation :

Tenure Holder: DPI Water Tenure: Forest Permit Landowner: Forestry Corporation of NSW

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Field Est Cost: Days from spud : AFE days (from spud):

23 lb/ft

Depth Size

Current Depth (MD): 158m RKB GL- Datum TVD: 158m ROP:

Progress (MD): Proposed TD: 630m

Casing 9 5/8' 7" 12.0 mGL N80 152.22 mGL Last LOT Results:

AFE Cost : Weight Depth RKB Deviation

130m 1/4 Deg

Objective: Last BOP Test: 9-2-17 Last BOP Drill: 9-2-17 Day and Night cre

Accident Free Days: 9 Last LTI Date: Last Safety Meeting: Morning Toolbox mtg

Cement Top Bottom Conductor Surface 12m 7" Casing Surface 156.02m

Accidents: No
CURRENT OPERATION @ 06:00HRS: Drilling 6 1/8" hole

PLANNED OPERATIONS FOR NEXT 24HRS: Drill 6 1/8" to ID +/- 630m

SUMMARY OF PERIOD 00:00 to 24:00HRS: Rigged up and pressure tested well head , BOPs and choke mainfold. Prepared BHA and TIH. Ran wire line survey.

	ation Ho		OPERATIONS FOR PERIOD 00:00 to 24:00	Time Code		
From	То	Hours				
00:00			Rigged up pressure testing unit. Pressure tested A-section, casing against blind rams 500psi 5min (ok). Changed	Mobilisation		
			out 2 x swivel joints on hard line. Tighten bolts on BOP flange. Rigged up bell nipple and flow line. Made up	Demobilisation		
			test plug, Attempted to pressure test pipe rams and annular no go. Pulled out test plug and inspect.	Travel		
	06:00		Rerun test plug. Opened doors on BOP and inspected pipe rams.	Rig Service		
06:00	07:30		Held Pre Tour Safety mtg, closed doors on BOP and rigged up to pressure test.	Other		
07:30	10:30		Pressure tested Blind rams, pipe rams , annular choke manifold 200 psi low 5min 1500 psi high 10min.	Circulate Hole		
10:30	12:00		Rigged up and pressure tested TIW and Inside BOP.Installed survey line on drum.	Drilling		
12:00	13:00	1	Broke out test plug and ran wear bushing, Installed Pason flow show.	Run Casing		
13:00	14:00	1	Loaded racks with 10 x 4 3/4" drill collars, 3 x 3 1/2" HWDP. Prepared 6 1/8" BHA.	Cementing		
14:00	17:15	3.25	Made up 6 1/8" BHA and TIH to 67m	Wait on Cement		
17:15	17:45		Held BOP drill and breifing with crew.	Tripping		
17:45	18:00	0.25	Pre Tour Safety mtg.	Logging		
18:00	19:00		Changed out pipe handler jaws. Unable to grip pipe.	Pressure Test		
19:00	20:30	1.5	Continued to TIH to top of cement at 139m	Standby		
20:30	20:45	0.25	Held BOP drill and breifing with crew.	Safety Meeting		
20:45	22:15	1.5	Pulled back to 132m .Rig up and run wire line survey, Survey barrel hung up in HWDP.	Other		
22:15	23:00	0.75	TOOH to HWDP, Trim down rubber centralizer on survey barrel. TIH to	Wait on Dayligh		
23:00	23:30	0.5	TIH to 132m	Well Kill		
23:30	24:00	0.5	Rigged up and run wire line survey.	Down Time Rig		
				Down Time Oth		
			OPERATIONS FOR PERIOD 24:00 TO 06:00	Rig up/ Nip up		
00:00	00:30	0.5	Rigged down wire line survey equipment, Survey 1/4 degree.			
00:30	2:45	2.25	TIH to 139m, Drilled out float, shoe track and rat hole to 158m. Displaced well to 9ppg mud.			
02:45	03:15	0.5	Drilled 3m new hole from 158m to 161m. Circulated hole clean.			
03:15	04:00	0.75	Rigged up pressure testing unit and peformed FIT to 430psi EMW 25ppg.			
04:00	06:00	2	Drilled 6 1/8" hole from 161m to 182m.			
			Note: Received 4 x 6m skip bins on the 4-2-17. Received 4 x 6m skip bins on the 7-2-17.			
			Total skip bins on site = 8			
	ital:			Total	-	
	ing Hour	<u> </u>	Rotating Hours Today:	Total	24	

Operating Hours Today: **Rotating Hours Today: Break Down Hours: 0** Pick Up Weight: Slack Off Weight: **Rotating Weight:** Slow Pump Rate 1: Slow Pump Rate 2:

Safety Topics of			MUD RECORD											
Pre Tour Safety m	ntg						COMPANY:		AMC			MUD USA	GE	
							MUD BUILT:	1	.50	bb	ol	Product	Usage	
BIT R	ECORD:			HYDRAU	JLICS:		MUD LOST:		5	bb	ol	Soda Ash		
NUMBER	1	2	PUMP No.:		1		MUD VOL:			bb	ol	Potassium Chloride	21	
SIZE, in.	8 1/2"	6 1/8"	PUMP TYPE:		F-500		Reading time					Ausdex	12	
TYPE	S519	DP408F	# of CYLINDE	RS:	3		DENSITY	9		ppg		Sodium Chloride	48	
SERIAL No.	222906	7907092	STROKE, in		8		VISCOSITY	36		sec/lt	r	Bore Seal		
TFA	0.773	0.371	LINER, in.		5 1/2"		PV / YP					Biocide	1	
W.O.B.,K lb.	5	6	S.P.M.		110		API W/L.			cc/30	mi	Bircarbantae	3	
R.P.M.	100-120	100-120	RATE, GPM		250		CAKE			32nd/	in	Bottom Hole Asse	mbly (BHA)	
DEPTH OUT, m	158		PRESSURE, p	si.	240		pН	8.8			Tool	Length	Type/Des	cription
DEPTH IN, m	16.2	158	AV/DP, ft./mi	n.			GELS:			10s/1	0r 1	0.22 m	6 1/8" PDC Bi	t
METERAGE	141.8		AV/DC, ft./m	in.			CHLOR.	32000		mg/L	2	1.83 m	6 1/8" NBS W	// float
HOURS	11.25		JET VEL., ft./	sec.			CALCIUM			mg/L	3	9.10 m	4 3/4" DC	
R.O.P., m/hr.	30-40		BIT HHP.				EXC. LM.			ppb	4	1.37 m	6 1/8" String	Stab
CONDITION			PUMP HHP.				SOLIDS			% Vo	5	82.57 m	9 x 4 3/4" DC	
TUBL	JLARS:		E.C.D., ppg.				SAND			%Vol	6	27.75 m	3 x 3 1/2" HV	/DP
Drill Pipe:	3 1	1/2"	H.S.I.				KCL	2.5		% Wt	7			
Joints Onsite:	(65	Shaker Scree	ns:			PHPA				8			
Joints In hole:			Solids Contro	l:			Pf/Mf							
Rotating hours:							M.B.T.			ppb				
Max Pull/Torque:											Total	122.84 m		
		Bit No.	Inside	Outside	Damage	Locatio	n Bearings	Gauge	Ot	her	Reason	Con	nment	
I.A.D.C. DULL GRA	DING:													
i		-	1											

Max Pull/Torque:										Total	122.84 m	
	Bit No.	. Inside	Outside	Damage	Location	Bearings	Gauge	Oth	ner	Reason	Com	ment
I.A.D.C. DULL GRADING:												
	1	1	1	CT	N	X	IN			TD		
		Position	Nam	е	Mobile#	Po	sition		Na	ıme	Mobile #	
Rig Contact (On Sit	e)	Company Man	Scott Ho	bday	0431 453 550) Drilling	Enginee	J	ordan	Bunning	0405 727 677	
		Rig Manager	Phil Ham	nmatt	0488 484 896	Geo	ologist	-	Andrea	Strand	0427 685 808	
	1 e)	Company Man	Scott Ho	bday	0431 453 550	Drilling	sition Enginee		ordan	Bunning	0405 727 677	





Date: 10-02-17 Report No: 10 Well Name: Plumb Road 1 Client Name: DPI Water

Objective:

Tenure Holder: DPI Water Tenure: Forest Permit Landowner: Forestry Corporation of NSW

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin: Field Est Cost: Days from spud : AFE days (from spud):

GL - AMSL Current Depth (MD): 396m RKB
GL- Datum TVD: 396m
ROP: 15-25m/hr Progress (MD): 238
Formation :Napperby Proposed TD: 630m

 Casing
 Depth
 Size

 K55
 12.0 mGL
 9 5/8"

 N80
 152.22 mGL
 7"

 Last LOT Results:

AFE days (from spud)
AFE Cost :
Weight ______De

 Weight
 Depth RKB Deviation

 130m
 1/4 Deg

 23 lb/ft
 248m
 1/4 Deg

 344m
 1/2 Deg

Last BOP Test: 9-2-17 Last BOP Drill: 9-2-17 Day and Night crew Cement
Accident Free Days: 9 Last LTI Date: Conductor

Last Safety Meeting: Morning Toolbox mtg

Accidents: No

 Cement
 Top
 Bottom

 Conductor
 Surface
 12m

 7" Casing
 Surface
 156.02m

CURRENT OPERATION @ 06:00HRS: Drilling 6 1/8" hole at 470m

PLANNED OPERATIONS FOR NEXT 24HRS: Drill 6 1/8" hole to 1D +/- 630m. Perform wiper trip and 100H

SUMMARY OF PERIOD 00:00 to 24:00HRS: Drilled out float shoe track and 3m new hole. Conducted FIT to 430psi 25ppg EMW. Drilled ahead 6 1/8" hole to 396m

Oper		ODEDATIONS FOR DEDIOD 00:00 to 24:00	Time C	'ode	
From					oue
00:00	00:30		Rigged down wire line survey equipment, Survey 1/4 degree.	Mobilisation	
00:30	2:45		TIH to 139m, Drilled out float, shoe track and rat hole to 158m. Displaced well to 9ppg mud.	Demobilisation	
02:45	03:15	0.5	Drilled 3m new hole from 158m to 161m. Circulated hole clean.	Travel	
03:15	04:00	0.75	Rigged up pressure testing unit and peformed FIT to 430psi EMW 25ppg.	Rig Service	
04:00	06:00	2	Drilled 6 1/8" hole from 161m to 182m. Recorded SCR's.	Other	
06:00	09:00	3	Drilled 6 1/8" hole from 182m to 226m.	Circulate Hole	
09:00	11:00	2	Drilled 6 1/8" hole from 226m to 256m.	Drilling	
11:00	12:00	1	Circulated hole clean, rigged up and run wire line survey at 248m RKB, 1/4 degree.	Run Casing	
12:00	15:00	3	Drilled 6 1/8" hole from 256m to 316m.	Cementing	
15:00	17:15	2.25	Drilled 6 1/8" hole from 316m to 345m.	Wait on Cement	
17:15	18:00	0.75	Layed out damaged drill pipe.	Tripping	
18:00	18:45	0.75	Rigged up and ran wire line survey at 344m RKB , 1/2 degree.	Logging	
18:45	22:00	3.25	Drilled 6 1/8" hole from 345m to 370m.	Pressure Test	
22:00	24:00	2	Drilled 6 1/8" hole from 370m to 396m.	Standby	
				Safety Meeting	
				Other	
			OPERATIONS FOR PERIOD 24:00 TO 06:00	Wait on Dayligh	
00:00	04:00	4	Drilled 6 1/8" hole from 396m to 450m. Recorderd SCR's.	Well Kill	
04:00	04:45	0.75	Rigged up and ran wire line survey at 441m RKB , Miss run.	Down Time Rig	
04:45	06:00	1.25	Drilled 6 1/8" hole from 450m to 470m.	Down Time Oth	
				Rig up/ Nip up	
			Formation Tops - Field Pics Only		
			Piliga sandstone 54m,		
			Purlawaugh Fm 310m		
			Deriah Fm 365m		
			Napperby 380 m		
			Note: Received 4 x 6m skip bins on the 4-2-17. Received 4 x 6m skip bins on the 7-2-17.		
			Received 2 x 6m skip bins on the 10-2-17		
			Total skip bins on site = 10		
To	tal:			Total	24.0
	ina Hour	_ T.d.	Potating Hours Today: Break Down Hours: 0	Total	24.0

 Operating Hours Today:
 Rotating Hours Today:
 Break Down Hours: 0

 Pick Up Weight: 38k
 Slack Off Weight: 34k
 Rotating Weight: 37k

 Slow Pump Rate 1:
 174 psi
 Slow Pump Rate 2:
 242psi

Name

Scott Hobday

Phil Hammatt

Position

Company Man

Rig Manager

Rig Contact (On Site)

Safety Topics of	r Inciden	ıts:					MUD RECORD							
Pre Tour Safety n	ntg						COMPANY:		AMC			MUD USA	GE	
							MUD BUILT:	1	.50	bb	1	Product	Usage	
BIT R	ECORD:			HYDRAU	JLICS:		MUD LOST:		5	bb	1	Soda Ash		
NUMBER	1	2	PUMP No.:		1		MUD VOL:			bb	!	Potassium Chloride	32	
SIZE, in.	8 1/2"	6 1/8"	PUMP TYPE:		F-500		Reading time	18:00				Ausdex	6	
TYPE	S519	DP408F	# of CYLINDE	RS:	3		DENSITY	9.7		ppg		Sodium Chloride	138	
SERIAL No.	222906	7907092	STROKE, in		8		VISCOSITY	36		sec/lti	-	Bore Seal	2	
TFA	0.773	0.371	LINER, in.		5 1/2"		PV / YP					Biocide		
W.O.B.,K lb.	5	43077	S.P.M.		150		API W/L.			cc/30i	ni	Bircarbantae		
R.P.M.	100-120	100-135	RATE, GPM		250		CAKE			32nd/	in	Bottom Hole Asse	mbly (BHA)	
DEPTH OUT, m	158		PRESSURE, p	si.	540		pН	8.8			Tool	Length	Type/De:	scription
DEPTH IN, m	16.2	158	AV/DP, ft./mi	n.			GELS:			10s/1	Or 1	0.22 m	6 1/8" PDC B	it
METERAGE	141.8		AV/DC, ft./mi	in.			CHLOR.	32000		mg/L	2	1.83 m	6 1/8" NBS V	// float
HOURS	11.25		JET VEL., ft./s	sec.			CALCIUM			mg/L	3	9.10 m	4 3/4" DC	
R.O.P., m/hr.	30-40		BIT HHP.				EXC. LM.			ppb	4	1.37 m	6 1/8" String	Stab
CONDITION			PUMP HHP.				SOLIDS			% Vol	5	82.57 m	9 x 4 3/4" D0	2
TUBL	JLARS:		E.C.D., ppg.				SAND			%Vol	6	27.75 m	3 x 3 1/2" HV	WDP
Drill Pipe:	3 1	L/2"	H.S.I.				KCL	2.5		% Wt	7			
Joints Onsite:	(55	Shaker Scree	ns:			PHPA				8			
Joints In hole:			Solids Contro	l:			Pf/Mf							
Rotating hours:			_				M.B.T.			ppb				
Max Pull/Torque:	420	00lbs									Total	122.84 m		
	Е	Bit No.	Inside	Outside	Damage	Locatio	n Bearings	Gauge	Ot	her	Reason	Con	nment	
I.A.D.C. DULL GRA	DING:													

Mobile#

0431 453 550

0488 484 896

IN

Jordan Bunning

Andrea Strand

Mobile #

0405 727 677

0427 685 808

Position

Drilling Engineer

Geologist





Date: 11-02-17 Report No: 11 Well Name: Plumb Road 1 Client Name: DPI Water

Tenure Holder: DPI Water Tenure: Forest Permit Landowner: Forestry Corporation of NSW

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Field Est Cost: Days from spud :

156.02m

Current Depth (MD): 642m RKB GL - AMSL

Casing K55 N80

AFE days (from spud): AFE Cost : Weight

Size Depth RKB Deviation Depth 9 5/8" 12.0 mGL 130m GL- Datum TVD: 642m 1/4 Deg 23 lb/ft 248m 1/4 Deg ROP: Formation : Progress (MD): 484m 152.22 mGL Proposed TD: 630m 344m 1/2 Deg 548m Objective: Last LOT Results: 3 Deg Last BOP Test: 9-2-17 Last BOP Drill: 9-2-17 Day and Night crev Тор Cement Bottom Accident Free Days: 11 Last LTI Date: Conductor Surface 12m

7" Casing

Surface

Last Safety Meeting: Morning Toolbox mtg Accidents : No

CURRENT OPERATION @ 06:00HRS: Replace sheared bolts on end cap hydraulic motor.

Position

Company Man

Rig Manager

Scott Hobday

Phil Hammatt

Rig Contact (On Site)

PLANNED OPERATIONS FOR NEXT 24HRS: TOOH, Run wire line logs. Rig up and run 4 1/2" casing.

SUMMARY OF PERIOD 00:00 to 24:00HRS: Drilled ahead 6 1/8" hole to TD at 642m. Circulated hole clean. TOOH from 642m

	ation Ho		OPERATIONS FOR PERIOD 00:00 to 24:00	Time Cod	e
From		Hours			
00:00	04:00		Drilled 6 1/8" hole from 396m to 450m. Recorderd SCR's.	Mobilisation	
04:00	04:45		Rigged up and ran wire line survey at 441m RKB , Miss run.	Demobilisation	
04:45	06:00		Drilled 6 1/8" hole from 450m to 470m.	Travel	
06:00	09:00		Drilled 6 1/8" hole from 470m to 516m.	Rig Service	
09:00	12:45		Drilled 6 1/8" hole from 516m to 557m.	Other	
12:45	13:00	0.25	Circulated hole clean while receprocating drill string.	Circulate Hole	
13:00	14:00	1	Rigged up and ran wire line survey at 548m RKB , 3 deg	Drilling	
14:00	17:00	3	Drilled 6 1/8" hole from 557m to 590m.	Run Casing	
17:00	21:00	4	Drilled 6 1/8" hole from 590m to 642m TD.	Cementing	
21:00	22:00	1	Circulated hole clean while receprocating drill string.	Wait on Cement	
22:00	24:00	2	Rig repair, removed and changed out upper and lower dies on iron roughneck. Due to pipe slipping.	Tripping	
				Logging	
			OPERATIONS FOR PERIOD 24:00 TO 06:00	Pressure Test	
00:00	02:00	2	Rig repair, unable to obtain clamping force on pipe handler, change out jaws and dies.	Standby	
02:00	05:30	3.5	Flow checked, TOOH from 642m RKB to 325m. Max overpull 10k.	Safety Meeting	
05:30	06:00	0.5	Rig repair , replaced sheared bolts on hydraulic end cap on spool motor. In progress.	Other	
				Wait on Dayligh	
				Well Kill	
				Down Time Rig	
				Down Time Oth	
				Rig up/ Nip up	
			Formation Tops - Field Pics Only		
			Piliga sandstone 54m,		
			Purlawaugh Fm 310m		
			Deriah Fm 365m		
			Napperby 380 m		
			Note: Received 4 x 6m skip bins on the 4-2-17. Received 4 x 6m skip bins on the 7-2-17.		
			Received 2 x 6m skip bins on the 11-2-17		
			Total skip bins on site = 12		
					İ
To	tal:	24		Total	24.0

Break Down Hours: 0 Operating Hours Today: Rotating Hours Today: Slack Off Weight: 34k Pick Up Weight: 38k Rotating Weight: 37k Slow Pump Rate 1: 174 psi Slow Pump Rate 2: 242psi

Safety Topics or							MUD	IUD RECORD						
Pre Tour Safety m	ntg					COMPANY:		AMC			MUD USA			
						MUD BUILT:	1	.50	bbl		Product	Usage		
BIT R	ECORD:		HYD	RAULICS:		MUD LOST:		5	bbl		Soda Ash			
NUMBER	1	2	PUMP No.:	1		MUD VOL:			bbl		Potassium Chloride	13		
SIZE, in.	8 1/2"	6 1/8"	PUMP TYPE:	F-500		Reading time	18:00				Ausdex	5		
TYPE	S519	DP408F	# of CYLINDERS:	3		DENSITY	9.8		ppg		Sodium Chloride			
SERIAL No.	222906	7907092	STROKE, in	8		VISCOSITY	36		sec/ltr		Bore Seal	6		
TFA	0.773	0.371	LINER, in.	5 1/2"		PV / YP					Biocide			
W.O.B.,K lb.	5	10	S.P.M.	150		API W/L.			cc/30m		Bircarbantae			
R.P.M.	100-120	100-135	RATE, GPM	250		CAKE			32nd/i	n	Bottom Hole Asse	mbly (BHA))	
DEPTH OUT, m	158	642	PRESSURE, psi.	540		pН	8.8			Tool	Length	Type/De	scription	
DEPTH IN, m	16.2	158	AV/DP, ft./min.			GELS:			10s/10	r 1	0.22 m	6 1/8" PDC E	sit	
METERAGE	141.8		AV/DC, ft./min.			CHLOR.	32000		mg/L	2	1.83 m	6 1/8" NBS V	V/ float	
HOURS	11.25		JET VEL., ft./sec.			CALCIUM			mg/L	3	9.10 m	4 3/4" DC		
R.O.P., m/hr.	30-40		BIT HHP.			EXC. LM.			ppb	4	1.37 m	6 1/8" String	Stab	
CONDITION			PUMP HHP.			SOLIDS			% Vol	5	82.57 m	9 x 4 3/4" D	2	
TUBL	JLARS:		E.C.D., ppg.			SAND			%Vol	6	27.75 m	3 x 3 1/2" H	WDP	
Drill Pipe:	3 1	L/2"	H.S.I.			KCL	3.5		% Wt	7				
Joints Onsite:	(55	Shaker Screens:			PHPA				8				
Joints In hole:			Solids Control:			Pf/Mf								
Rotating hours:						M.B.T.			ppb					
Max Pull/Torque:	420	00lbs								Total	122.84 m			
		Bit No.	Inside Outs	ide Damag	e Locatio	n Bearings	Gauge	Ot	her	Reason	Con	nment	•	
I.A.D.C. DULL GRA	DING:													

Position

Drilling Engineer

Geologist

Jordan Bunning

Andrea Strand

Mobile #

0405 727 677

0427 685 808

Mobile#

0431 453 550

0488 484 896





Date: 12-02-17 Report No: 12 Well Name: Plumb Road 1 Client Name: DPI Water

Tenure Holder: DPI Water Tenure: Forest Permit Landowner: Forestry Corporation of NSW

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Field Est Cost: Days from spud : AFE days (from spud):

Bottom

156.02m

GL - AMSL Current Depth (MD): 642m RKB Casing Depth Size GL- Datum 12.0 mGL

TVD: 642m Progress (MD): N80 Proposed TD: 630m

AFE Cost : Weight Depth RKB Deviation 9 5/8 130m 1/4 Deg 152.22 mGL 23 lb/ft 344m 1/2 Deg 548m 3 Deg

Objective: Last LOT Results: Last BOP Test: 9-2-17 Last BOP Drill: 9-2-17 Day and Night cre-Cement

Тор Accident Free Days: 11 Last LTI Date: Surface Conductor Last Safety Meeting: Morning Toolbox mtg 7" Casing Surface

Accidents: No

ROP: Formation:

CURRENT OPERATION @ 06:00HRS: Wait on approval to return to location

Position

Company Man

Rig Contact (On Site)

Name

Scott Hobday

Phil Hammatt

PLANNED OPERATIONS FOR NEXT 24HRS: Wait on approval to return to location. TOOH, Run wire line logs. Rig up and run 4 1/2" casing.

SUMMARY OF PERIOD 00:00 to 24:00HRS: TOOH, Received notification from the Forestry Corporation to evacuate location due to the extreme hot weather.

	ation Ho		OPERATIONS FOR PERIOD 00:00 to 24:00	Time C	ode
From 00:00	To 02:00	Hours 2	Rig repair, unable to obtain clamping force on pipe handler, change out jaws and dies.	Mobilisation	
02:00	05:30		Flow checked, TOOH from 642m RKB to 325m. Max overpull 10k.	Demobilisation	
05:30	05:30		Rig repair , replaced sheared bolts on hydraulic end cap on spool motor.		
05:30				Travel	
	09:00		TOOH from 325m to casing shoe at 156m.	Rig Service	
09:00	10:15		Flow checked, TOOH from 156m to 12.5m.	Other	
10:15			Informed from NSW Forestry Corporation for all personel to evacuate site. Picked up 2 x 3 1/2" DP and TIH.	Circulate Hole	
	11:00		Shut in well and secured same. Powered down all generators and closed up shacks.	Drilling	
11:00			All crew stand by at the Civio camp in Narrabri, due to the Forestry Corporation shutting down the Piliga forest	Run Casing	
	18:00		due to potentional fires in extreme weather conditions.	Cementing	
18:00			All crew stand by at the Civio camp in Narrabri, due to the Forestry Corporation shutting down the Piliga forest	Wait on Cement	
	24:00	6	due to potentional fires in extreme weather conditions.	Tripping	
				Logging	
			OPERATIONS FOR PERIOD 24:00 TO 06:00	Pressure Test	
				Standby	
00:00			All crew stand by at the Civio camp in Narrabri, due to the Forestry Corporation shutting down the Piliga forest	Safety Meeting	
	06:00		due to potentional fires in extreme weather conditions.	Other	
			·	Wait on Dayligh	
				Well Kill	
				Down Time Rig	
				Down Time Oth	
				Rig up/ Nip up	
-			Formation Tops - Field Pics Only	raig up/ raip up	
			Piliga sandstone 54m,		
			Purlawaugh Fm 310m		
			Deriah Fm 365m		
			Napperby 380 m		
		1	Intrusives 535m		
		-	Diaby 578m	-	
			Black Jack Group 610m	+	
			DIGER TACK GLOUD GTOILI		
-			Natar Descined A. Constitution on the 4.2.17 Descined A. Constitution on the 7.2.17		
			Note: Received 4 x 6m skip bins on the 4-2-17. Received 4 x 6m skip bins on the 7-2-17.		
			Received 2 x 6m skip bins on the 11-2-17		
		2.4	Total skip bins on site = 12		
	tal:	24	v: Rotating Hours Today: Break Down Hours: 0	Total	24.0

Operating Hours Today: Pick Up Weight: 38k Slow Pump Rate 1: Rotating Hours Today: Slack Off Weight: 34k Break Down Hours: 0 Rotating Weight: 37k 174 psi Slow Pump Rate 2: 242nsi

Diott i amp itat	·		17 1 PSI	5.5tt : ap .	ucc	2 121	931						
Safety Topics o	r Incider	ıts:				MUD RECORD							
Pre Tour Safety n	ntg					COMPANY:		AMC			MUD USA	GE	
						MUD BUILT:	. 1	L50	bbl		Product	Usage	
BIT R	ECORD:		HYD	RAULICS:		MUD LOST:		5	bbl		Soda Ash		
NUMBER	1	2	PUMP No.:	1		MUD VOL:			bbl		Potassium Chloride	13	
SIZE, in.	8 1/2"	6 1/8"	PUMP TYPE:	F-500		Reading time	18:00				Ausdex	5	
TYPE	S519	DP408F	# of CYLINDERS:	3		DENSITY	9.8		ppg		Sodium Chloride		
SERIAL No.	222906	7907092	STROKE, in	8		VISCOSITY	36		sec/ltr		Bore Seal	6	
TFA	0.773	0.371	LINER, in.	5 1/2"		PV / YP					Biocide		
W.O.B.,K lb.	5	10	S.P.M.	150		API W/L.			cc/30n	ni	Bircarbantae		
R.P.M.	100-120	100-135	RATE, GPM	250		CAKE			32nd/i	n	Bottom Hole Asse	mbly (BHA)	
DEPTH OUT, m	158	642	PRESSURE, psi.	540		pН	8.8			Tool	Length	Type/Desc	ription
DEPTH IN, m	16.2	158	AV/DP, ft./min.			GELS:			10s/10)r 1	0.22 m	6 1/8" PDC Bit	
METERAGE	141.8		AV/DC, ft./min.			CHLOR.	32000		mg/L	2	1.83 m	6 1/8" NBS W/	float
HOURS	11.25		JET VEL., ft./sec.			CALCIUM			mg/L	3	9.10 m	4 3/4" DC	
R.O.P., m/hr.	30-40		BIT HHP.			EXC. LM.			ppb	4	1.37 m	6 1/8" String S	tab
CONDITION			PUMP HHP.			SOLIDS			% Vol	5	82.57 m	9 x 4 3/4" DC	
TUBI	ULARS:		E.C.D., ppg.			SAND			%Vol	6	27.75 m	3 x 3 1/2" HWI	OP
Drill Pipe:	3 :	1/2"	H.S.I.			KCL	3.5		% Wt	7			
Joints Onsite:		65	Shaker Screens:			PHPA				8			
Joints In hole:			Solids Control:	•		Pf/Mf							•
Rotating hours:				•		M.B.T.			ppb				•
Max Pull/Torque:	420	00lbs		•						Total	122.84 m		
		Bit No.	Inside Outs	ide Damage	Locati	on Bearings	Gauge	e Ot	her	Reason	Con	nment	
I.A.D.C. DULL GRADING:												•	

Position

Drilling Engineer

Name

Jordan Bunning

Mobile #

0405 727 677

0427 685 808

Mobile#

0431 453 550

0488 484 896



Accidents : No

TDC - INGAUGE DAILY DRILLING REPORT



Tenure Holder: DPI Water Field Est Cost: Date: 13-02-17 **Drilling Company: TDC Drilling** Days from spud : AFE days (from spud): Rig Description: Drillmec G55 Report No: 13 Tenure: Forest Permit Well Name: Plumb Road 1 Landowner: Forestry Corporation of NSW Target Basin: AFE Cost : Weight Client Name: DPI Water GL - AMSL Current Depth (MD): 642m RKB Depth Depth RKB Deviation Casing Size **GL- Datum** TVD: 642m 12.0 mGL 9 5/8 130m 1/4 Deg Progress (MD): Proposed TD: 630m 248m 344m ROP: NRO 152.22 mGL 7" 23 lb/ft 1/4 Deg Formation : 1/2 Deg Objective: Last LOT Results: 548m 3 Dea Last BOP Test: 9-2-17 Last BOP Drill: 9-2-17 Day and Night cre **Top** Surface Cement Bottom Last LTI Date: Accident Free Days: 13 Conductor 12m Last Safety Meeting: Morning Toolbox mtg 7" Casing Surface 156.02m

CURRENT OPERATION @ 06:00HRS: Casing at TD. Rig up cement unit and currently pumping cement job.

Position

Company Man

Rig Contact (On Site)

Name

Scott Hobday

Phil Hammatt

PLANNED OPERATIONS FOR NEXT 24HRS: Complete cement job. Install slip & seal assembly. Nipple up wellhead. Release rig, rig down & move to Plumb Road 2.

SUMMARY OF PERIOD 00:00 to 24:00HRS: Received approval to return to site. Restart operations. Pull kill string out of hole. Rigged up and logged well.

Three logging runs all ok. Rig down wireline. Prepare BHA and start running casing to 389m.

Oper	<u>ration Ho</u>		OPERATIONS FOR PERIOD 00:00 to 24:00	Time Cod	io.
From	To	Hours	OF ERATIONS TOR FERTOD 00:00 to 24:00	Time co	10
00:00			All crew stand by at the Civeo camp in Narrabri, due to the Forestry Corporation shutting down the Piliga forest	Mobilisation	
	06:00	6	due to potentional fires in extreme weather conditions.	Demobilisation	
06:00			All crew stand by at the Civio camp in Narrabri, due to the Forestry Corporation shutting down the Piliga forest	Travel	
	08:00		due to potentional fires in extreme weather conditions.	Rig Service	
08:00	09:00		Received conformation to return to location. Crew arrive on site at 08:50 hrs.	Other	
09:00			Recorded will pressure 0 psi. Pre inspected all rig engines before power up. Opened BOP's and filled	Circulate Hole	
	09:45	0.75	annulas with 2 bbls drilling fluid.	Drilling	
09:45	10:15	0.5	Removed stabbing valve, TOOH with 2 x 3 1/2" drill pipe.	Run Casing	
10:15	10:45	0.5	Broke out and layed out string stab, drill collar, NBR and 6 1/8" PDC Bit.	Cementing	
10:45	11:00	0.25	Held pre job Safety mtg with Kinetic wire line crew.	Wait on Cemen	
11:00			Rigged up Kinetic wire line and run in hole with dummy tool, Tool through table at 11:45hrs, hoist wire line.	Tripping	
			Run #2 GDRC- Gammy Ray, Dual Density, Caliper, Resistivity, tools through table at 13:00, Log up.	Logging	
			Run #3 NRG- Neutron, GR, Resistivity, tools through table at 15:00. Log up.	Pressure Test	
			Run #3 MPR'"=64"Res,Lat Res,Single Point Res,Fluid Res, SP,Temp,GR,Mag Dev through table at 16:45. Log	Standby	
	18:45	7.75	up. Rigged down Kinetic wire line. (Held weekly Safety meeting with both crews.)	Safety Meeting	
18:45	19:30	0.75	Picked up joint drill pipe, made up combo tool and retrieved wear bushing. Changed out Top Head Drive subs.	Other	
19:30	20:00	0.5	Pre Job Saafety mtg, Rigged up to run 4 1/2" casing.	Wait on Dayligh	
20:00	24:00	4	Made up float and 2 joint shoe track, checked floats. TIH with 4 1/2" casing to 389m RKB.	Well Kill	
				Down Time Rig	
			OPERATIONS FOR PERIOD 24:00 TO 06:00	Down Time Oth	
00:00	03:45		TIH with 4 1/2" casing from 389m to 469m, Wash down from 469m with 4bbls min to casing depth at 641m.	Rig up/ Nip up	
03:45	04:30	0.75	Circulated hole clean at 5bbls min, while Halliburton prepared spacer.		
04:30	04:45	0.25	Held pre job Safety mtg with Halliburton and crew.		
04:45	06:00	1.25	Rigged up Halliburton cement head and lines, Pumped cement as per program. (In Progress)		
			Formation Tops - Field Pics Only		
			Piliga sandstone 54m, Purlawaugh Fm 310m, Deriah Fm 365m, Napperby 380 m		
			Intrusives 535m, Digby 578m, Black Jack Group 610m		
			Note: Received 4 x 6m skip bins on the 4-2-17. Received 4 x 6m skip bins on the 7-2-17.		
			Received 4 x 6m skip bins on the 11-2-17		
			Total skip bins on site = 12		
To	tal:	24		Total	24.0

Operating Hours Today: Rotating Hours Today: Break Down Hours: 0
Pick Up Weight: 38k Slack Off Weight: 34k Rotating Weight: 37k
Slow Pump Rate 1: Slow Pump Rate 2: MUD RECORD

Safety Topics or	· Inciden	ıts:									MUD	RECORD		
Pre Tour Safety m	ntg						COMPANY:		AMC			MUD USA	GE	
	_						MUD BUILT:	. 1	150	bb	I	Product	Usage	
BIT R	ECORD:			HYDRAU	ILICS:		MUD LOST:		5	bb	I	Soda Ash		
NUMBER	1	2	PUMP No.:		1		MUD VOL:			bb	I	Potassium Chloride		
SIZE, in.	8 1/2"	6 1/8"	PUMP TYPE:		F-500		Reading time	18:00				Ausdex		
TYPE	S519		# of CYLINDE	RS:	3		DENSITY	9.8		ppg		Sodium Chloride		
SERIAL No.	222906	7907092	STROKE, in		8		VISCOSITY	36		sec/lti		Bore Seal		
TFA	0.773	0.371	LINER, in.	!	5 1/2"		PV / YP					Biocide		
W.O.B.,K lb.	5		S.P.M.		150		API W/L.			cc/30i	mi	Bircarbantae		
R.P.M.	100-120	100-135	RATE, GPM		250		CAKE			32nd/	in	Bottom Hole Asser	mbly (BHA)	
DEPTH OUT, m	158	642	PRESSURE, ps	si.	540		pН	8.8			Tool	Length	Type/Des	cription
DEPTH IN, m	16.2	158	AV/DP, ft./mi	n.			GELS:			10s/1	Or 1	0.22 m	6 1/8" PDC Bi	t
METERAGE	141.8	484	AV/DC, ft./mi	n.			CHLOR.	32000		mg/L	2	1.83 m	6 1/8" NBS W	/ float
HOURS	11.25		JET VEL., ft./s	sec.			CALCIUM			mg/L	3	9.10 m	4 3/4" DC	
R.O.P., m/hr.	30-40		BIT HHP.				EXC. LM.			ppb	4	1.37 m	6 1/8" String	Stab
CONDITION			PUMP HHP.				SOLIDS			% Vol	5	82.57 m	9 x 4 3/4" DC	
TUBL	JLARS:		E.C.D., ppg.				SAND			%Vol	6	27.75 m	3 x 3 1/2" HW	/DP
Drill Pipe:	3 1	L/2"	H.S.I.				KCL	3.5		% Wt	7			
Joints Onsite:	(65	Shaker Scree	ns:			PHPA				8			
Joints In hole:			Solids Contro	l:			Pf/Mf							
Rotating hours:							M.B.T.			ppb				
Max Pull/Torque:	420	00lbs									Total	122.84 m		
	Е	Bit No.	Inside	Outside	Damage	Locatio	n Bearings	Gauge	e Ot	ther	Reason	Com	nment	
I.A.D.C. DULL GRA	DING:	2	5	2	BT	С	Х	IN	١	WT	TD			

Mobile#

0431 453 550

ΤN

Position

Drilling Engineer

Geologist

TD

Name

Jordan Bunning

Mobile #

0405 727 677

0427 685 808





Mobile #

0405 727 677

0427 685 808

Date: 14-02-17 Report No: 14 Well Name: Plumb Road 1 Client Name: DPI Water GL - AMSL

ROP: Formation : Tenure Holder: DPI Water Tenure: Forest Permit Landowner: Forestry Corporation of NSW **Drilling Company: TDC Drilling** Rig Description: Drillmec G55 Target Basin:

Field Est Cost: Days from spud : AFE days (from spud):

Current Depth (MD): 642m RKB Depth Casing Size GL- KB 3.8m TVD: 642m

AFE Cost : Weight Depth RKB Deviation 9 5/8 11.08 m 36 lb/ft 130m 1/4 Deg 1/4 Deg N80 156.02 mKB 23 lb/ft K55 641 mKB 4 1/2" 11.6 lb/ft 344m 1/2 Deg

3 Deg Objective: Last LOT Results: 548m Last BOP Test: 9-2-17 Last BOP Drill: 9-2-17 Day and Night crev Cement Тор Bottom Accident Free Days: 14 Last LTI Date: Conductor Surface 12m Last Safety Meeting: Morning Toolbox mtg 7" Casing Surface 158m 4 1/2" Casing Surface 642m

Accidents: No
CURRENT OPERATION @ 06:00HRS:

PLANNED OPERATIONS FOR NEXT 24HRS: Rig down and skid move to Plumb Road 2.

Position

Company Man

Rig Manager

Rig Contact (On Site)

Name

Scott Hobday

Phil Hammatt

Progress (MD):

Proposed TD: 630m

SUMMARY OF PERIOD 00:00 to 24:00HRS: TIH with 4 1/2" casing to 641m. Circulated hole clean, Rig up Halliburton and cemented as per program. Lifted BOP's and installed slip and seal assembly. Trim casing. Layed out BOPs, final cut casing and installed wellhead

Oper			OPERATIONS FOR PERIOD 00:00 to 24:00	Time of C	
From	То	Hours	OPERATIONS FOR PERIOD 00:00 to 24:00	Time Co	oae
00:00	03:45		TIH with 4 1/2" casing from 389m to 469m, Wash down from 469m with 4bbls min to casing depth at 641m.	Mobilisation	
03:45	04:30		Circulated hole clean at 5bbls min, while Halliburton prepared spacer.	Demobilisation	
04:30	04:45		Held pre job Safety mtg with Halliburton and crew.	Travel	
04:45			Rigged up Halliburton cement head and lines, Pressure tested surface lines to 3000psi, Mixed and pumped 10bbls	Rig Service	
			of 9.8ppg gelled spacer, Mixed and pumped 45bbls of 12.5ppg lead cement, Mixed and pumped 9.5bbls of	Other	
			15.6ppg cement. Displaced with 31.9 bbls of water, bumped plug with 820psi and increased to 1500psi. Bleed	Circulate Hole	
	07:15		back 0.2bbls. Floats holding, Cement in place at 06:54hrs. Rigged down cement head and lines.	Drilling	
07:15	8:30		Opened doors on BOP's and cleaned out cement. Nippled down BOP's and removed flow line	Run Casing	
08:30	10:00		Lifted BOP's and set Slip and seal assembly, slacked of casing . Cut 4 1/2" casing and layed out same.	Cementing	
10:00			Set down BOP's onto A-section, removed bell nipple, Rigged down pipe handler, choke manifold and flare line	Wait on Cement	
	12:45		reposition pipe handler, lifted BOP's and secured to BOP skid, layed out same.	Tripping	
12:45	13:30		Final cut and dressed 4 1/2" casing stump at 4 3/4" , installed wellhead and nippled up.	Logging	
			Rig released to Plumb Road 2 at 13:30hrs.	Pressure Test	
				Standby	
,		1		Safety Meeting	
,		1		Other	
, — — — —	·	—		Wait on Dayligh	
				Well Kill	
				Down Time Rig	
			OPERATIONS FOR PERIOD 24:00 TO 06:00	Down Time Oth	
				Rig up/ Nip up	
,	·	1	Formation Tops - Field Pics Only	1	
			Piliga sandstone 54m, Purlawaugh Fm 310m, Deriah Fm 365m, Napperby 380 m		
, — — ,	·	—	Intrusives 535m, Digby 578m, Black Jack Group 610m		
		†'		<u> </u>	
,		1			
, — — ,	·	—			
, — — ,	·	—	Note: Received 4 x 6m skip bins on the 4-2-17. Received 4 x 6m skip bins on the 7-2-17.		
,		1	Received 4 x 6m skip bins on the 11-2-17		
, — —		†	Total skip bins on site = 12		
Tc	otal:	24		Total	24.

Operating Hours Today: Rotating Hours Today: **Break Down Hours: 0** Pick Up Weight: Slack Off Weight: **Rotating Weight:** Slow Pump Rate 1: Slow Pump Rate 2:

Safety Topics or	r Inciden	ts:						MUD RECORD AMC MUD USAGE						
Pre Tour Safety n	ntg						COMPANY:		MUD USA	GE				
							MUD BUILT:			bb	1	Product	Usage	
BIT R	ECORD:		ŀ	HYDRAU	LICS:		MUD LOST:			bb	1	Soda Ash		
NUMBER	1	2	PUMP No.:		1		MUD VOL:			bb	-	Potassium Chloride		
SIZE, in.	8 1/2"	6 1/8"	PUMP TYPE:		F-500		Reading time					Ausdex		
TYPE	S519	DP408F	# of CYLINDERS	S:	3		DENSITY		ŗ	opg		Sodium Chloride		
SERIAL No.	222906	7907092	STROKE, in		8		VISCOSITY		9	sec/Iti	•	Bore Seal		
TFA	0.773	0.371	LINER, in.	-	5 1/2"		PV / YP					Biocide		
W.O.B.,K lb.	5	10	S.P.M.		150		API W/L.		(10E\c	ni	Bircarbantae		
R.P.M.	100-120	100-135	RATE, GPM		250		CAKE		1.1	32nd/	in	Bottom Hole Asser	nbly (BHA)	
DEPTH OUT, m	158	642	PRESSURE, psi.		540		pН				Tool	Length	Type/De:	scription
DEPTH IN, m	16.2	158	AV/DP, ft./min.				GELS:		1	10s/1	Or 1			
METERAGE	141.8	484	AV/DC, ft./min.				CHLOR.		r	mg/L	2			
HOURS	11.25		JET VEL., ft./sed	С.			CALCIUM		r	mg/L	3			
R.O.P., m/hr.	30-40		BIT HHP.				EXC. LM.		ŗ	opb	4			
CONDITION			PUMP HHP.				SOLIDS		C	% Vol	5			
TUBL	JLARS:		E.C.D., ppg.				SAND		C	%Vol	6			
Drill Pipe:	3 1	L/2"	H.S.I.				KCL		C	% Wt	7			
Joints Onsite:	(65	Shaker Screens	:			PHPA				8			
Joints In hole:			Solids Control:			•	Pf/Mf			ĺ				
Rotating hours:						•	M.B.T.		ŗ	ppb				
Max Pull/Torque:											Total			
	Е	Bit No.	Inside O	utside	Damage	Locatio	n Bearings	Gauge	Oth	er	Reason	Com	ment	
I.A.D.C. DULL GRA	DING:												•	•

Position

Geologist

0431 453 550 Drilling Engineer

Name

Jordan Bunning

Andrea Strand

Mobile#

0488 484 896





Date: 14-02-17 Report No: 1 Well Name: Plumb Road 2 Client Name: DPI Water

Operation Hours
To Hours

GL - AMSL

GI - Datum

ROP.

Tenure Holder: DPI Water Tenure: Forest Permit

Landowner: Forestry Corporation of NSW

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Field Est Cost: Days from spud: AFE days (from spud):

23 lb/ft

11.6 lb/ft

4 1/2" Casin

OPERATIONS FOR PERIOD 00:00 to 24:00

Current Depth (MD):

TVD: Progress (MD): Proposed TD: 370m Casing Depth 9 5/8 K55 N80 4 1/2"

AFE Cost : Weight Depth RKB Deviation

Formation : Objective: Last BOP Test: 9-2-17 Last BOP Drill: 9-2-17 Day and Night crew

Accident Free Days : 14 Last LTI Date: Last Safety Meeting : Morning Toolbox mtg Accidents: No

Last LOT Results: Top Cement Bottom Conductor

Size

7" Casing

CURRENT OPERATION @ 06:00HRS: Prepare to drill 12 1/4" hole to set conductor.

Position

Company Man

Rig Contact (On Site)

PLANNED OPERATIONS FOR NEXT 24HRS: Rig down and skid move to Plumb Road 2, Drill conductor hole and cement. WOC. Drill 8 1/2" surface hole

SUMMARY OF PERIOD 00:00 to 24:00HRS: Skid moved to Plumb Road 2, spotted equipment and rigged up same.

From	To	Hours		U	PLNA	110113	IOK	PLKIOD	00.0	U LU	4 7.	00			Time C	Jue	
13:30			Rigged do	wn electrical c	ables, air a	and water I	lines. Repo	osition genera	ator traile	r, prepai	red to	lower ma	ıst.	Mobilis	sation		
			Mast lowe	red at 14:20h	rs , Remov	ed hold do	own chains	and lowered	l carrier, ı	removed	pyrai	mid stand	s. Changed out 2	Demot	oilisation		
			out 2 tyre	s on carrier. R	emoved an	nd replaced	l gland pad	cking on char	ge pump	for mud	pump	. Remove	d carrier	Travel			
	18:00	4.5	from sub											Rig Se	rvice		
18:00			Spotted s	ub base and ca	rrier. Rais	ed rig on ja	ack legs, F	RKB to ground	d 2.15m. :	Installed	stair	s to rig flo	or and rear	Other			
	24:00	6	of carrier.	Rigged up kel	ly hose. Sp	ootted gene	erator and	day tank tra	ilers.						ate Hole		
														Drilling			
														Run Ca			
														Cemer			
								PERIOD 24							n Cement		
00:00				all electrical o										Trippir			
				tted pipehandl				ed 12 1/4" Bl	IA, prepa	red cem	enting	g equipme	nt and	Loggin			
	06:00	6	strapped	1 joint 9 5/8" o	casing. Mad	de up 12 1/	/4" BHA.								ire Test		
														Stand			
															Meeting		
														Other	5 1: 1		
															n Dayligh		
														Well K			
		 													Time Rig Time Oth		
		-													o/ Nip up	\longrightarrow	
		1												Kig up	עט עוויו עט	\rightarrow	
		-												1		-+	
														1	-	-	
			Note: Rec	eived 4 x 6m s	kip bins or	n the 4-2-1	L7. Receive	ed 4 x 6m ski	p bins on	the 7-2	-17.						
				4 x 6m skip bi													
			Total skip	bins on site =	12												
To	otal:													Total			24.0
Operat	ing Hours	Today	:			tating Hou		' :		Break	Dow	n Hours:	0				
	Weight:					ck Off W				Rotati	ng W	eight:					
	ump Rate				Slo	w Pump F	Rate 2:										
Safety	Topics or	Incide	nts:									MUD	RECORD				
Pre Tou	r Safety m	ntg						COMPANY:		AMC			MU	D USAC	GE		
								MUD BUILT			bbl		Product		Usage		
	BIT	RECORI) :		HYDR/	AULICS:		MUD LOST:			bbl		Soda Ash				
NUMBE	R	1	2	PUMP No.:		1		MUD VOL:			bbl		Potassium Chl	loride			
SIZE, ir	n.			PUMP TYPE	:	F-500		Reading time					Ausdex				
TYPE				# of CYLIN		3		DENSITY		pp	og		Sodium Chlor	ide			
SERIAL	No.			STROKE, ir	1	8		VISCOSITY		se	c/ltr		Bore Seal				
TFA				LINER, in.		5 1/2"		PV / YP					Biocide				
W.O.B.,	,K lb.			S.P.M.				API W/L.			:/30m		Bircarbanta				
R.P.M.				RATE, GPM				CAKE		32	2nd/in		Bottom Hole	Assen			
	OUT, m			PRESSURE				pН				Tool	Length		Type/D	escr	iption
DEPTH :				AV/DP, ft./	min.			GELS:		10)s/10ı	1					
METERA				AV/DC, ft./				CHLOR.			g/L	2					
HOURS				JET VEL., f	t./sec.			CALCIUM			g/L	3					
R.O.P.,				BIT HHP.				EXC. LM.		pp		4					
CONDIT				PUMP HHP.				SOLIDS	$oxed{oxed}$		Vol	5					
		BULARS		E.C.D., ppg].			SAND			Vol	6					
Drill Pip			3 1/2"	H.S.I.				KCL		%	Wt	7					
Joints C			65	Shaker Scr				PHPA				8					
	n hole:			Solids Cont	rol:			Pf/Mf									
	g hours:							M.B.T.		pp	b						
Max Pul	II/Torque:											Total					
			Bit No.	Inside	Outside	Damage	e Locatio	on Bearings	Gauge	Othe	r	Reason		Com	ment		
I.A.D.C	. DULL GR	ADING:															

Mobile#

0431 453 550

0488 484 896

Name

Scott Hobday Phil Hammatt

Position

Drilling Engineer

Name

Jordan Bunning

Mobile #

0427 685 808





Date: 15-02-17 Report No: 2 Well Name: Plumb Road 2 Client Name: DPI Water

Objective:

Tenure Holder: DPI Water Tenure: Forest Permit Landowner: Forestry Corporation of NSW Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Field Est Cost: Days from spud: AFE days (from spud): AFE Cost : Weight

Size

Current Depth (MD): 156m RKB GL - AMSL 2.15m GL- KB TVD: 156m ROP: 30-80 M/HR Formation :

Progress (MD): 141.5m Proposed TD: 370m

9 5/8' 7" 11.0 m N80 4 1/2" Last LOT Results: Тор

Depth

Depth RKB Deviation 36 lb/ft 23 lb/ft

Last BOP Drill: 9-2-17 Day and Night crew Last BOP Test: 9-2-17 Accident Free Days : 15 Last LTI Date:

Last Safety Meeting : Morning Toolbox mtg Accidents: No

Cement Surface Conductor 7" Casing

Casing

K55

Bottom 12.5m

CURRENT OPERATION @ 06:00HRS: TOOH with 7" casing

PLANNED OPERATIONS FOR NEXT 24HRS: Lay out 7" casing , make up wipper trip assembly, Run 7" casing and cement

SUMMARY OF PERIOD 00:00 to 24:00HRS: Completed rig up, Drilled conductor hole, cemented 9 5/8" casing. Waited on cement. Drilled 8 1/2" hole to 156m.

Circulated hole clean, TOOH to 22m

	ration Ho		OPERATIONS FOR PERIOD 00:00 to 24:00	Time Co	le
From	To	Hours			10
00:00			Rigged up all electrical cables, air and water lines. Functioned ESD's. Installed sand guzzler into cellar. Raised	Mobilisation	
			mast, spotted pipehandler and rigged up same. Strapped 12 1/4" BHA, prepared cementing equipment and	Demobilisation	
	07:00		strapped 1 joint 9 5/8" casing. Made up 12 1/4" BHA. Functioned sand guzzler.	Travel	
07:00	08:00		Drilled 12 1/4" hole to 14.5m RKB	Rig Service	
08:00	08:45	0.75	TOOH laying out 12 1/4" BHA.	Other	
08:45	09:00		Ran 1 $ imes$ joint 11m 9 5/8" casing for conductor.	Circulate Hole	
09:00	09:30	0.5	Cemented conductor	Drilling	
09:30			Waited on cement, Loaded BHA and strapped same, Prepared equipment for backload to Roma.	Run Casing	
			Loaded racks with 7" casing. Received a load of water for day tank. Pressure tested seal assy and wellhead	Cementing	
	15:30		connection on Plumb Road 1 to 600psi.	Wait on Cement	
15:30	16:15		Made up 8 1/2" BHA.	Tripping	
16:15	19:00		Drilled 8 1/2" from 14.5m to 70m	Logging	
19:00	21::45		Drilled 8 1/2" from 70m to 156m	Pressure Test	
21:45	22:15	0.5	Circulated hole clean while reciprocating drill string.	Standby	
22:15	22:30	0.25	Flow checked, dropped survey.	Safety Meeting	
22:30	24:00	1.5	TOOH from 156m to 22m	Other	
				Wait on Dayligh	
			OPERATIONS FOR PERIOD 24:00 TO 06:00	Well Kill	
00:00	00:30		Continued to TOOH from 22m to surface, layed out stabalizer's and bit. Retrieve survey. Miss run.	Down Time Rig	
00:30	01:00	0.5	Pre job Safety mtg, Rigged up to run 7" casing.	Down Time Oth	
01:00			NPT: Unable to make up casing due to pipe handler requiring realignment, unloaded casing and drill collars.	Rig up/ Nip up	
	02:00		Realigned pipe handler.		
02:00	03:45	1.75	Made up float and shoe track and checked for flow, TIH with 7" to 94m Hang up.		
03:45	05:15	1.5	Worked casing from 94m to 95m, unable to pass. Held pre job Safety mtg on laying out casing.		
05:15	06:00	0.75	TOOH laying out 7" casing from 95m to 70m		
			Note: Received 4 x 6m skip bins on the 4-2-17. Received 4 x 6m skip bins on the 7-2-17.		
			Received 4 x 6m skip bins on the 11-2-17, Received 4 x 6m skip bins on the 15-2-17		
			Skip bins back loaded to Namoi Wastecorp = 1 on the 15-2-17		
			Total skip bins on site = 15		
					+
То	tal:	24		Total	24.0

Rotating Hours Today: Slack Off Weight: Break Down Hours: 0 Rotating Weight: Operating Hours Today: Pick Up Weight: Slow Pump Rate 1: Slow Pump Rate 2

Safety Topics or	Incider	its:									MUD I	RECORD		
Pre Tour Safety m	ntg						COMPANY:		AMC			MUD USA	GE	
							MUD BUILT:			bbl		Product	Usage	
BIT	RECORD) :		HYDRAU	LICS:		MUD LOST:			bbl		Soda Ash		
NUMBER	1 RR	2	PUMP No.:		1		MUD VOL:	- 2	200	bbl		Potassium Chloride		
SIZE, in.	8 1/2"	'	PUMP TYPE:		F-500		Reading time	18:00				Ausdex		
TYPE	S519		# of CYLIND	ERS:	3		DENSITY	9.7		ppg		Sodium Chloride		
SERIAL No.	222906	5	STROKE, in		8		VISCOSITY	36		sec/ltr		Bore Seal	1	
TFA	0.773		LINER, in.		5 1/2"		PV / YP					Biocide		
W.O.B.,K lb.	6		S.P.M.		130		API W/L.			cc/30m		Bircarbantae		
R.P.M.	100-12	0	RATE, GPM		300		CAKE			32nd/in		Bottom Hole Asser	mbly (BHA)	
DEPTH OUT, m	156		PRESSURE,	psi.	350		pН				Tool	Length	Type/Des	cription
DEPTH IN, m	14.5		AV/DP, ft./m	in.			GELS:			10s/10r	1	0.21 m	8 1/2" PDC Bi	t
METERAGE	141.5		AV/DC, ft./n	nin.			CHLOR.			mg/L	2	1.26 m	8 1/2" NBS W	/ float
HOURS	5.5		JET VEL., ft.	/sec.			CALCIUM			mg/L	3	9.35 m	6 1/4" DC	
R.O.P., m/hr.	30-80		BIT HHP.				EXC. LM.			ppb	4	1.87 m	8 1/2" String	Stab
CONDITION			PUMP HHP.				SOLIDS			% Vol	5	37.25 m	4 x 6 1/4" DC	
TUE	BULARS:		E.C.D., ppg.				SAND			%Vol	6	0.76 m	X/O	
Drill Pipe:		3 1/2"	H.S.I.				KCL	2.5		% Wt	7	100.81 m	10 x 4 3/4" D	C
Joints Onsite:		65	Shaker Scre	ens:			PHPA				8	18.44 m	2 x 3 1/2" HW	/DP
Joints In hole:			Solids Contr	ol:			Pf/Mf							•
Rotating hours:							M.B.T.			ppb				
Max Pull/Torque:											Total	169.95 m		
		Bit No.	Inside	Outside	Damage	Locatio	n Bearings	Gaug	e O	ther I	Reason	Com	nment	
		5											-	•

	Bit No.	Inside	Outside	Damage	Location	Bearings	Gauge	Other	Reason	Comment	
I.A.D.C. DULL GRADING:	1RR	1	1	CT	N	Χ	IN	WT	TD		
		Position	Nam	е	Mobile#	Pos	sition	1	Name	Mobile #	
Rig Contact (On Site	e)	Company Man	Scott Ho	bday	0431 453 550	Drilling	Engineer	Jorda	n Bunning	0405 727 677	
		Rig Manager	Phil Han	nmatt	0488 484 896	Geo	logist	Andre	ea Strand	0427 685 808	





Total

Mobile #

0405 727 677

0427 685 808

24.0

Date: 16-02-17 Report No: 3

Well Name: Plumb Road 2 Client Name: DPI Water 258.2m GL - AMSL

Last BOP Test: 9-2-17

Accidents

Accident Free Days : 16 Last LTI D
Last Safety Meeting : Morning Toolbox mtg

Tenure Holder: DPI Water Tenure: Forest Permit

Current Depth (MD): 219m RKB

Landowner: Forestry Corporation of NSW

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Depth

11.0 m

154.75

Casing

NRO

1/2" Casino

Field Est Cost: Days from spud: AFE days (from spud):

36 lb/ft

23 lb/ft

11.6 lb/ft

AFE Cost : Weight Depth RKB Deviation

Progress (MD): 63m ROP: 20-60 M/HR Proposed TD: Formation : 390m Objective:

Last LTI Date:

TVD: 219m

Last LOT Results: Last BOP Drill: 9-2-17 Day and Night crew

Тор Cement Bottom 7" Casing 156m Surface

Size 9 5/8'

CURRENT OPERATION @ 06:00HRS: Drilling 6 1/8" Production hole.

PLANNED OPERATIONS FOR NEXT 24HRS: Drill production hole to TD +/- 390m. Circulate hole clean. TOOH and run wire line logs

SUMMARY OF PERIOD 00:00 to 24:00HRS: TOOH with 8 1/2" BHA, Rigged up and run 7" casing to 95m unable to pass. TOOH layed out casing. TIH with 8 1/2

wipper trip assembly. Rigged up and run 7" casing to setting depth. Cement casing as per program. **OPERATIONS FOR PERIOD 00:00 to 24:00** Time Code
 From
 To
 Hou

 00:00
 00:30
 0.5
 Hours Continued to TOOH from 22m to surface, layed out stabalizer's and bit, Retrieve survey, Miss run. Mobilisation 00:30 01:00 Pre job Safety mtg, Rigged up to run 7" casing Demobilisation 01:00 NPT : Unable to make up casing due to pipe handl Travel Rig Service 02:00 Realigned pipe handler 02:00 Made up float and shoe track and checked for flow, TIH with 7" to 94m Hang up 03:45 1.5 Worked casing from 94m to 95m, unable to pass. Held pre job Safety mtg on laying out casing. TOOH laying out 7" casing from 95m to 70m. 03:45 05:15 Circulate Hole 05:15 06:00 Drilling Rig repair, trouble shoot rig engine shut down, rebooted engine computer diagnostic screen. TOOH laying out 7" casing from 70m to surface, broke out casing drive sub.

Made up 8 1/2" BHA and TIH to 95m tagged up same. 06:00 08:30 Run Casina 08:30 09:45 Cementing 9:45 10:45 Wait on Cemen 10:45 Esatablished circulation and parameters, 300 GPM, 120-140 RPM 11:00 Trippina 11:00 12:00 Washed and reamed from 87m to TD at 156m Logging 12:00 12:30 0.5 Circulated hole clean while receprocating drill string Pressure Test 12:30 13:00 0.5 TOOH from 156m to 142m. Standby 13:00 Rig repair, Changed on dies on iron roughneck Safety Meeting 13:30 Continued to TOOH from 142m to surface, layed out stabalizer's and bit.

Pre job Safety mtg, Rigged up to run 7" casing.

Made up float and shoe track and checked for flow path, TIH with 7" casing to setting depth of 154.75m. 13:30 15:00 1.5 Other 15:00 15:30 0.5 Wait on Dayligh 16:30 Well Kill 16:30 17:30 Circulated hole clean while rigged up Halliburton. Down Time Rig 17:30 Held Pre Job Safety mtg with Halliburton and crew, Rigged up Halliburton cement head and lines Down Time Oth Pumped 5bbls fresh water spacer, Pressure tested surface lines to 2900psi, Pump 15bbls fresh water spacer Mixed and pump 12.6bbls of lead cement at 12.5ppg, Mixed and pumped 7.1bbls of tail cement at 15.6ppg. Rig up/ Nip up Displaced with 19.4bbls fresh water at 3bbls/min, bumped plug with 180psi increasing to 1500psi 5min Bleed back 0.4bbls. Cement returns after 14.8 bbls into displacement. 4.6 bbls cement to surface Cement in place at 18:35 hrs 3.25 Waited on cement. Removed 8 1/2" BHA from racks. Prepared 6 1/8" BHA 18:45 22:30 0.25 Slacked off 7" casing. Broke out landing joint and layed out same.
0.75 Broke out casing drive sub ,changed out X/O , installed A-section and tourque to spec.
0.5 Attempted to break out x/o sub from 3 1/2" HWDP. Unable to break, layed out and removed from BHA. 22:30 22:45 22:45 23:30 24:00 23:30 **OPERATIONS FOR PERIOD 24:00 TO 06:00** 1.5 0.5 Made up 6 1/8" BHA and TIH to 132m. 00:00 01:30 0.5 Rigged up and run Totco wire line survey. Recovered survey 2 degree's, rigged down same.
1.25 TIH, tagged cement at 139m, Drilled out float ,shoe track and rat hole to 156m. 01:30 02:00 02:00 03:15 06:00 03:15 Drilled 6 1/8" hole from 156m to 219m. (Discussed with crews signs of well flowing and monitoring tank volumes.) Note: Received 4 x 6m skip bins on the 4-2-17. Received 4 x 6m skip bins on the 7-2-17 Received 4 x 6m skip bins on the 11-2-17, Received 4 x 6m skip bins on the 15-2-17 Skip bins back loaded to Namoi Wastecorp = 2 on the 15-2-17, 16-2-17 Total skip bins on site = 14

Total: Operating Hours Today: **Rotating Hours Today:** Break Down Hours: 0 Pick Up Weight: Slow Pump Rate 1: Slack Off Weight: Rotating Weight:

Name

Scott Hobday

Phil Hammatt

Position

Company Man

Rig Manager

Rig Contact (On Site)

Safety Topics or		ıts:					MUD RECORD								
Pre Tour Safety m	itg						COMPANY:		AMC			MUD USA	GE		
							MUD BUILT:			bb		Product	Usage		
BIT	RECORD) :		HYDRAU	JLICS:		MUD LOST:			bb		Soda Ash			
NUMBER	1 RR	2 RR	PUMP No.:		1		MUD VOL:	2	200	bb		Potassium Chloride	5		
SIZE, in.	8 1/2"	6 1/8"	PUMP TYPE:		F-500		Reading time	18:00	6:00			Ausdex			
TYPE	S519	DP408I	# of CYLIND	ERS:	3		DENSITY	96	9.5	ppg		Sodium Chloride			
SERIAL No.	222906	790709	2 STROKE, in		8		VISCOSITY	36	36	sec/ltr		Bore Seal	1		
TFA	0.773	0.371	LINER, in.		5 1/2"		PV / YP					Biocide			
W.O.B.,K lb.	6	10	S.P.M.		130		API W/L.			cc/30r	ni	Bircarbantae			
R.P.M.	100-12	0 100-13	RATE, GPM		300		CAKE			32nd/i	n	Bottom Hole Asser	mbly (BHA)		
DEPTH OUT, m	156	642	PRESSURE, p	osi.	350		pН				Tool	Length	Type/De	scription	
DEPTH IN, m	14.5	158	AV/DP, ft./m	in.			GELS:			10s/10)r 1	0.22 m	6 1/8" PDC B	it	
METERAGE	141.5		AV/DC, ft./m	iin.			CHLOR.			mg/L	2	1.83 m	6 1/8" NBS V	V/ float	
HOURS	5.5		JET VEL., ft./	sec.			CALCIUM			mg/L	3	9.10 m	4 3/4" DC		
R.O.P., m/hr.	30-80		BIT HHP.				EXC. LM.			ppb	4	1.37 m	6 1/8" String	Stab	
CONDITION			PUMP HHP.				SOLIDS			% Vol	5	82.58 m	9 x 4 3/4" D0	2	
TUB	ULARS:		E.C.D., ppg.				SAND			%Vol	6	18.53 m	2 x 3 1/2" HV	NDP	
Drill Pipe:		3 1/2"	H.S.I.				KCL	5		% Wt	7				
Joints Onsite:		65	Shaker Scree	ens:			PHPA				8				
Joints In hole:			Solids Contro	ol:			Pf/Mf								
Rotating hours:							M.B.T.			ppb					
Max Pull/Torque:											Total	Total 113.63 m			
		Bit No.	Inside	Outside	Damage	Locatio	n Bearings	Gauge	e Ot	her	Reason	Com	ment		
I.A.D.C. DULL GRA	ADING:										·		<u> </u>		

Mobile

0431 453 550

0488 484 896

ΙN

Name

Jordan Bunning

Andrea Strand

Position

Drilling Engineer

Geologist





Mobile #

0405 727 677

0427 685 808

Date: 17-02-17 Report No: 4 Well Name: Plumb Road 2 Client Name: DPI Water GL - AMSL 258.2m

Tenure Holder: DPI Water Tenure: Forest Permit Landowner: Forestry Corporation of NSW

Current Depth (MD): 388m RKB

390m

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Casing

K55

N80

7" Casing 4 1/2" Casin

Field Est Cost: Days from spud: AFE days (from spud):

AFE Cost : Weight

Bottom

156m

Size

9 5/8

2.15m GL- KB ROP: 2-20 M/HR Formation:

Last BOP Test: 9-2-17

Progress (MD): 232m Proposed TD: 390m Last BOP Drill: 9-2-17 Day and Night crew Last LTI Date:

7" 4 1/2' 154.75 K55 Last LOT Results: Cement Top

Surface

Depth

11.0 m

Depth RKB Deviation 36 lb/ft 2 Deg 132m 23 lb/ft 0 Deg 11.6 lb/ft

Accident Free Days : 17 Last Safety Meeting : Morning Toolbox mtg
Accidents : No

Objective:

CURRENT OPERATION @ 06:00HRS: TOOH with 6 1/8" BHA, Prepare to run wire line logs.

TVD: 388m

PLANNED OPERATIONS FOR NEXT 24HRS: TOOH and run wire line logs. TIH with 4 1/2" casing. Cement casing, install wellhead. Skid move to Plumb Road 3.

SUMMARY OF PERIOD 00:00 to 24:00HRS: TIH with 6 1/8" BHA. Drilled out float shoe track. Drilled 6 1/8" production hole to 381m.

Ope	eration Ho	urs	OPERATIONS FOR PERIOD 00:00 to 24:00	T 4	2-4-	\neg
From	To	Hours	OPERATIONS FOR PERIOD 00:00 to 24:00	Time 0	Jode	Į.
00:00	01:30	1.5	Made up 6 1/8" BHA and TIH to 132m.	Mobilisation		
01:30			Rigged up and run Totco wire line survey. Recovered survey 2 degree's, rigged down same.	Demobilisation		
02:00	03:15		TIH, tagged cement at 139m, Drilled out float ,shoe track and rat hole to 156m.	Travel		
03:15			Drilled 6 1/8" hole from 156m to 219m. (Discussed with crews signs of well flowing and monitoring tank volumes.)	Rig Service		
06:00	07:45		Drilled 6 1/8" hole from 219m to 277m.	Other		
07:45			Circulated hole clean, rigged up and run Totco wire line survey at 267m. Recovered survey 0 degree's	Circulate Hole		
08:30			Drilled 6 1/8" hole from 277m to 327m.	Drilling		
12:00			Drilled 6 1/8" hole from 327m to 339m.	Run Casing	L.	
15:00			Drilled 6 1/8" hole from 339m to 354m.	Cementing		
18:00			Drilled 6 1/8" hole from 354m to 375m.	Wait on Cement		
21:00			Drilled 6 1/8" hole from 375m to 381m.	Tripping	L.	
23:00	24:00	1	Rig repair, Rig engine overheating. Repaired leaking exhaust pipe.	Logging	L.	
				Pressure Test	L.	
			OPERATIONS FOR PERIOD 24:00 TO 06:00	Standby		
00:00			Drilled 6 1/8" hole from 381m to 385m.	Safety Meeting	L.	
01:00			Rig repair, Rig engine shut down. Troubled shoot same.	Other		
02:00			Drilled 6 1/8" hole from 385m to 388m.	Wait on Dayligh		
02:30		1	Rig repair. Blew 6" suction hose on mud pump. (Discussed with Brisbane and TD called at 388m.)	Well Kill		
03:30	06:00	2.5	TOOH from 388m to 12.5m.	Down Time Rig		
				Down Time Oth		
				Rig up/ Nip up		
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			Total skip bins on site = 14		$\vdash \vdash$	
	L	2.4			\vdash	
	otal:	24	L	Total		24.0
	ing Hours					
	p Weight:		Slack Off Weight: Rotating Weight:			

Operating Hours Today:	Rotating Hours Today:	Break Down Hours: 0
Pick Up Weight:	Slack Off Weight:	Rotating Weight:
Slow Pump Rate 1:	Slow Pump Rate 2:	

Safety Topics or	Incide	nts:										MUD	RECORD	
Pre Tour Safety m	itg							COMPANY:		AMC			MUD USA	GE
								MUD BUILT:			bb	I	Product	Usage
BIT	RECORE):			HYDRAL	JLICS:		MUD LOST:			bb	I	Soda Ash	2
NUMBER	1 RR	2 R	λ.	PUMP No.:		1		MUD VOL:		200	bb	I	Potassium Chloride	
SIZE, in.	8 1/2'	6 1/3	3"	PUMP TYPE:		F-500		Reading time	18:00	06:00			Ausdex	
TYPE	S519	DP40	8F	# of CYLIND	ERS:	3		DENSITY	9.5	9.5	ppg		Sodium Chloride	
SERIAL No.	22290	6 79070	192	STROKE, in		8		VISCOSITY	38	36	sec/lti		Bore Seal	
TFA	0.773	0.37	1	LINER, in.		5 1/2"		PV / YP					Biocide	
W.O.B.,K lb.	6	10		S.P.M.		130		API W/L.			cc/30		Bircarbantae	2
R.P.M.	100-12	0 100-1	35	RATE, GPM		300		CAKE			32nd/	in	Bottom Hole Asser	mbly (BHA)
DEPTH OUT, m	156			PRESSURE,	osi.	350		pН				Tool	Length	Type/Description
DEPTH IN, m	14.5			AV/DP, ft./m	iin.			GELS:			10s/1	On 1	0.22 m	6 1/8" PDC Bit
METERAGE	141.5			AV/DC, ft./m	nin.			CHLOR.			mg/L	2	1.83 m	6 1/8" NBS W/ float
HOURS	5.5			JET VEL., ft.,	/sec.			CALCIUM			mg/L	3	9.10 m	4 3/4" DC
R.O.P., m/hr.	30-80	1		BIT HHP.				EXC. LM.			ppb	4	1.37 m	6 1/8" String Stab
CONDITION				PUMP HHP.				SOLIDS			% Vol	5	82.58 m	9 x 4 3/4" DC
TUE	BULARS:			E.C.D., ppg.				SAND			%Vol	6	18.53 m	2 x 3 1/2" HWDP
Drill Pipe:		3 1/2"		H.S.I.				KCL	3.5	4	% Wt			
Joints Onsite:		65		Shaker Scree	ens:	-		PHPA						
Joints In hole:				Solids Contro	ol:			Pf/Mf						
Rotating hours:								M.B.T.			ppb			
Max Pull/Torque:												Total	113.63 m	
		Bit No.		Inside	Outside	Damage	Locatio	n Bearings	Gaug	e Ot	her	Reason	Com	ment
I.A.D.C. DULL GRA	I.A.D.C. DULL GRADING: 2RR				•									
1RR				1	1	CT	N	X	IN	V	VT	TD		

Position

Drilling Engineer

Name

Jordan Bunning

Andrea Strand

Mobile#

0431 453 550

0488 484 896

Name

Scott Hobday

Phil Hammatt

Position

Company Man

Rig Manager

Rig Contact (On Site)



Accident Free Days : 18

Operation Hours

02:00

02:30

06:15

Accidents: No

From To 00:00 01:00

02:30 03:30

01:00

02:00

03:30

TDC - INGAUGE **DAILY DRILLING REPORT**



Time Code

Mobilisation

Rig Service

Travel

Other

Demobilisation

156m

388m

Date: 18-02-17 Tenure Holder: DPI Water Field Est Cost: Drilling Company: TDC Drilling Report No: 5 Tenure: Forest Permit Rig Description: Drillmec G55 Days from spud: Well Name: Plumb Road 2 Landowner: Forestry Corporation of NSW Target Basin: AFE days (from spud): AFE Cost : Weight Client Name: DPI Water GL - AMSL 258.2m Current Depth (MD): 388m RKB Depth RKB Deviation Casing Depth Size GL- KB 2.15m TVD: 388m 9 5/8 36 lb/ft K55 11.0 m 2 Dea 132m 0 Deg Progress (MD): 232m N80 154.75 23 lb/ft ROP: 2-20 M/HR 4 1/2 Formation: Proposed TD: 390m K55 388 11.6 lb/ft Objective: Last LOT Results: Last BOP Test: 9-2-17 Last BOP Drill: 9-2-17 Day and Night crew Тор Bottom

Cement

Conductor

7" Casing

1/2" Casino

Surface

Surface

Surface

CURRENT OPERATION @ 06:00HRS:

0.5

Last Safety Meeting: Morning Toolbox mtg

PLANNED OPERATIONS FOR NEXT 24HRS: Skid Move to Plumb Road 3

Last LTI Date:

Drilled 6 1/8" hole from 381m to 385m

Drilled 6 1/8" hole from 385m to 388m.

TOOH from 388m to surface.

Rig repair, Rig engine shut down. Troubled shoot same.

SUMMARY OF PERIOD 00:00 to 24:00HRS: Continued drilling 6 1/8" production hole to 388m. Logged well. Made up and ran 4-1/2" Casing. Circualated clean and cemented 4 1/2" casing. Cut casing and dressed stump. Rig released at 14:30hrs. **OPERATIONS FOR PERIOD 00:00 to 24:00**

Rig repair. Blew 6" suction hose on mud pump. (Discussed with Brisbane and TD called at 388m.)

06:15	06:30	0.25			mtg with Kine										ate Hole		
06:30					vire line and ru									Drillin			
	08:45	2.25			Res,Lat Res,Sin netic wire line.		Res,Fluid Re	es, SP, Temp,	GR,Mag	Dev tr	rougn ta	able at U/	:25. Log	Run C			
08:45	09:00				g, Rigged up to)" cacing							Cemer	n Cement	-	
08.43	11:30		Made un	float and 8	Bm shoe track,	checked f	loate for flo	w nath TIH v	with 4.1	/2" cas	sing to 3	87m RKR		Trippin			
11:30	11:45	0.25			n at 5bbls min					Z Cus	sing to 5	O/III KKD.		Loggir			
11:45	12:00	0.25			mtg with Halli					ate ho	le clean.				ire Test		
12:00					on cement hea								ımped 10bbls	Standl			
					acer, Mixed an									Safety	Meeting		
					isplaced with 1								psi. Bleed	Other			
	13:30	1.5			holding, Cem										n Dayligh		
13:30	14:30	1			Drive to casing	g and lowe	er to well II) at 388m, C	ut casın	g stum	np at 4 3	/4" and dr	ess same.	Well K	Time Rig		
			Rig relea	sed at 14:3	onrs.										Time Rig	-	
															o/ Nip up		
														rag u	o, mp up		
																-	
			Total skii	bins on si	ite = 14												
			·														
	otal:	24												Total			24.0
	ing Hours		' :				urs Today	:				n Hours:	0				
	Weight:					ck Off Wow Pump				Rot	ating W	eight:					
	Topics or		nte:		Sic	w Pump	Rate 2:	1				MIID	RECORD				
	r Safety m							COMPANY:	ı	AMC		I 100 1		D USA	GF		
ic roui	. Suicty ii	itg						MUD BUILT:		71110	bbl		Product	J COA	Usage	1	
								MUD LOST:			bbl						
	BIT	RECORI):		HYDR	AULICS:		MOD LOST:					Soda Ash		2		
NUMBER		RECORI 1 RR		R PUMP		1		MUD LOST:	2	00	bbl		Soda Ash Potassium Chl	oride	2		
SIZE, in	R	1 RR 8 1/2	2 R	8" PUMP	No.: TYPE:	1 F-500		MUD VOL: Reading time	18:00	6:00	bbl		Potassium Chl Ausdex		2		
SIZE, in YPE	R 1.	1 RR 8 1/2 S519	2 R " 6 1/ DP40	8" PUMP)8F # of C	No.: TYPE: CYLINDERS:	1 F-500 3		MUD VOL: Reading time DENSITY	18:00 9.5	6:00 9.5	bbl ppg		Potassium Chl Ausdex Sodium Chlori		2		
SIZE, in TYPE SERIAL	R 1.	1 RR 8 1/2 S519 22290	2 R " 6 1/ DP40 6 7907	8" PUMP 98F # of C 992 STROK	No.: TYPE: CYLINDERS: KE, in	1 F-500 3 8		MUD VOL: Reading time DENSITY VISCOSITY	18:00	6:00	bbl		Potassium Chl Ausdex Sodium Chlori Bore Seal		2		
SIZE, in TYPE SERIAL TFA	No.	1 RR 8 1/2 S519 22290 0.773	2 R " 6 1/ DP40 6 7907 3 0.33	8" PUMP 98F # of C 992 STROP 71 LINER	No.: TYPE: CYLINDERS: KE, in	1 F-500 3 8 5 1/2"		MUD VOL: Reading time DENSITY VISCOSITY PV / YP	18:00 9.5	6:00 9.5	bbl ppg sec/ltr		Potassium Chl Ausdex Sodium Chlori Bore Seal Biocide	ide			
SIZE, in TYPE SERIAL TFA W.O.B.,	No.	1 RR 8 1/2 S519 22290 0.773 6	2 R " 6 1/ DP40 66 7907 3 0.33	8" PUMP 08F # of C 092 STROW 71 LINER 5.P.M.	No.: TYPE: CYLINDERS: KE, in t, in.	1 F-500 3 8 5 1/2" 130		MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L.	18:00 9.5	6:00 9.5	ppg sec/ltr		Potassium Chl Ausdex Sodium Chlori Bore Seal Biocide Bircarbanta	ide e	2		
SIZE, in TYPE SERIAL TFA W.O.B., R.P.M.	No.	1 RR 8 1/2 S519 22290 0.773 6 100-12	2 R " 6 1/ DP40 6 7907 3 0.3 10 20 100-	8" PUMP 08F # of C 092 STROP 71 LINER S.P.M. 1.35 RATE,	No.: TYPE: CYLINDERS: KE, in t, in. GPM	1 F-500 3 8 5 1/2" 130 300		MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE	18:00 9.5	6:00 9.5	bbl ppg sec/ltr	n	Potassium Chl Ausdex Sodium Chlori Bore Seal Biocide Bircarbanta Bottom Hole	ide e	2 mbly (BH/		ntion
SIZE, in TYPE SERIAL TFA W.O.B., R.P.M.	No. K lb.	1 RR 8 1/2 S519 22290 0.773 6 100-12	2 R " 6 1/ DP40 6 7907 8 0.33 10 20 100-	8" PUMP 08F # of C 092 STROM 71 LINER S.P.M. 1.35 RATE, 8 PRESS	No.: TYPE: CYLINDERS: KE, in d, in GPM SURE, psi.	1 F-500 3 8 5 1/2" 130		MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE pH	18:00 9.5	6:00 9.5	ppg sec/ltr cc/30m 32nd/ir	Tool	Potassium Chl Ausdex Sodium Chlori Bore Seal Biocide Bircarbanta Bottom Hole	ide e	2 mbly (BHA Type/D	escri	ption
SIZE, in TYPE SERIAL IFA W.O.B., R.P.M. DEPTH (No. K lb. OUT, m IN, m	1 RR 8 1/2 S519 22290 0.773 6 100-12 156 14.5	2 R " 6 1/ DP40 6 7907 8 0.33 10 20 100- 38 15	8" PUMP 08F # of C 092 STROM 71 LINER S.P.M. 135 RATE, 8 PRESS 6 AV/DP	No.: TYPE: CYLINDERS: KE, in ., in GPM SURE, psi. P, ft./min.	1 F-500 3 8 5 1/2" 130 300		MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE pH GELS:	18:00 9.5	6:00 9.5	ppg sec/ltr cc/30m 32nd/ir 10s/10	Tool	Potassium Chl Ausdex Sodium Chlori Bore Seal Biocide Bircarbanta Bottom Hole	e • Asser	2 mbly (BH/ Type/E 6 1/8" PDC	escri Bit	
SIZE, in TYPE SERIAL TFA W.O.B., R.P.M. DEPTH (DEPTH I	No. K lb. OUT, m IN, m	1 RR 8 1/2 S519 22290 0.773 6 100-12	2 R " 6 1/ DP40 6 7907 8 0.33 10 20 100- 38 15	8" PUMP 8F # of C 992 STRON 71 LINER S.P.M. 135 RATE, 8 PRESS 6 AV/DP 2 AV/DC	No.: TYPE: CYLINDERS: KE, in d, in GPM SURE, psi.	1 F-500 3 8 5 1/2" 130 300		MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE pH	18:00 9.5	6:00 9.5	ppg sec/ltr cc/30m 32nd/ir	Tool	Potassium Chl Ausdex Sodium Chlori Bore Seal Biocide Bircarbanta Bottom Hole Length 0.22 m	e • Asser	2 mbly (BHA Type/D	escri Bit	
GIZE, in YPE GERIAL FA W.O.B., R.P.M. DEPTH (DEPTH I METERA HOURS R.O.P.,	No. K lb. OUT, m IN, m AGE m/hr.	1 RR 8 1/2 S519 22290 0.773 6 100-12 156 14.5	2 R	8" PUMP 08F # of C 092 STROP 1 LINER S.P.M. 1.35 RATE, 18 PRESS 6 AV/DP 2 AV/DC JET VE 0 BIT HI	No.: TYPE: CYLINDERS: KE, in t, in. GPM SURE, psi. P, ft./min. L, ft./min. EL, ft./sec. HP.	1 F-500 3 8 5 1/2" 130 300		MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE PH GELS: CHLOR. CALCIUM EXC. LM.	18:00 9.5	6:00 9.5	ppg sec/ltr cc/30m 32nd/in 10s/10 mg/L mg/L ppb	Tool r 1 2 3 4	Potassium Chl Ausdex Sodium Chlor Bore Seal Biocide Bircarbanta Bottom Hole Length 0.22 m 1.83 m 9.10 m 1.37 m	e • Asser	2 Type/D 6 1/8" PDC 6 1/8" NBS 4 3/4" DC 6 1/8" Strii	Bit W/ flo	oat
SIZE, in YPE SERIAL FA V.O.B., R.P.M. DEPTH I DEPTH I METERA HOURS R.O.P.,	No. K Ib. OUT, m IN, m AGE m/hr. TON	1 RR 8 1/2 S519 22290 0.773 6 100-12 156 14.5 141.5 5.5 30-80	2 R	8" PUMP 08F # of C 092 STROP 71 LINER S.P.M. 1.35 RATE, 8 PRESS 6 AV/DP 22 AV/DC JET VE 0 BIT HI	No.: TYPE: CYLINDERS: KE, in t, in. GPM SURE, psi. P, ft./min. C, ft./min. EL., ft./sec. HP. HHP.	1 F-500 3 8 5 1/2" 130 300		MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE PH GELS: CHLOR. CALCIUM EXC. LM. SOLIDS	18:00 9.5	6:00 9.5	ppg sec/ltr cc/30m 32nd/ir 10s/10 mg/L mg/L ppb	Tool 1 2 3 4 5	Potassium Chl Ausdex Sodium Chlor Bore Seal Biocide Bircarbanta Bottom Hole Length 0.22 m 1.83 m 9.10 m 1.37 m 82.58 m	e • Asser	2 mbly (BH/ Type/E 6 1/8" PDC 6 1/8" NBS 4 3/4" DC 6 1/8" Striu 9 x 4 3/4"	Descri Bit W/ flo ng Stal DC	pat b
SIZE, In YPE SERIAL FA V.O.B., R.P.M. DEPTH (DEPTH I METERA HOURS R.O.P., CONDIT	No. No. K Ib. OUT, m IN, m AGE m/hr. ION TUB	1 RR 8 1/2 S519 22290 0.773 6 100-12 156 14.5 5.5 30-80	2 R " 6 1/ DP4(6 7907) 8 0.33 10 20 100- 38 15 5 23	8" PUMP 8F # of C 992 STROH 1 LINER 1 S.P.M. 135 RATE, 8 PRESS 6 AV/DP 2 AV/DC 0 BIT HI PUMP E.C.D.	No.: TYPE: CYLINDERS: KE, in ,, in	1 F-500 3 8 5 1/2" 130 300		MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE pH GELS: CHLOR. CALCIUM EXC. LM. SOLIDS SAND	18:00 9.5 38	6:00 9.5 36	ppg sec/ltr cc/30m 32nd/in 10s/10 mg/L mg/L ppb % Vol	Tool r 1 2 3 4	Potassium Chl Ausdex Sodium Chlor Bore Seal Biocide Bircarbanta Bottom Hole Length 0.22 m 1.83 m 9.10 m 1.37 m	e • Asser	2 nbly (BH/ Type/D 6 1/8" PDC 6 1/8" NBS 4 3/4" DC 6 1/8" Strit	Descri Bit W/ flo ng Stal DC	pat b
EIZE, IN YPE EERIAL FA V.O.B., A.P.M. DEPTH (DEPTH 1 METERA HOURS L.O.P., CONDIT	No. K Ib. OUT, m IN, m AGE m/hr. TON	1 RR 8 1/2 S519 22290 0.773 6 100-12 156 14.5 5.5 30-80	2 R R	8" PUMP NSF # of C OD22 STROM 71 LINER S.P.M. 1.35 RATE, B PRESS 6 AV/DP 2 AV/DC JET VE 0 BIT HI PUMP E.C.D. H.S.I.	No.: TYPE: CYLINDERS: KE, in ., in	1 F-500 3 8 5 1/2" 130 300		MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE pH GELS: CHLOR. CALCIUM EXC. LM. SOLIDS SAND KCL	18:00 9.5	6:00 9.5	ppg sec/ltr cc/30m 32nd/ir 10s/10 mg/L mg/L ppb	Tool 1 2 3 4 5	Potassium Chl Ausdex Sodium Chlor Bore Seal Biocide Bircarbanta Bottom Hole Length 0.22 m 1.83 m 9.10 m 1.37 m 82.58 m	e • Asser	2 mbly (BH/ Type/E 6 1/8" PDC 6 1/8" NBS 4 3/4" DC 6 1/8" Striu 9 x 4 3/4"	Descri Bit W/ flo ng Stal DC	pat b
SIZE, IN YPE SERIAL FA V.O.B., R.P.M. DEPTH (DEPTH 1 METERA HOURS R.O.P., CONDIT	No. No. K Ib. OUT, m IN, m IN, m IN, T IN T IN T IN T IN T IN T IN T IN T IN	1 RR 8 1/2 S519 22290 0.773 6 100-12 156 14.5 5.5 30-80	2 R " 6 1/ DP4(6 7907) 8 0.33 10 20 100- 38 15 5 23	8" PUMP 8F # of C 992 STROM 71 LINER S.P.M. 135 RATE, 8 PRESS 6 AV/DP 2 AV/DC JET VE 0 BIT HI PUMP E.C.D. H.S.I. Shake	No.: TYPE: CYLINDERS: KE, in t, in. GPM SURE, psi. P, ft./min. L, ft./min. EL, ft./sec. HHP. HHP. Typpg. Ty	1 F-500 3 8 5 1/2" 130 300		MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE PH GELS: CHLOR. CALCIUM EXC. LM. SOLIDS SAND KCL PHPA	18:00 9.5 38	6:00 9.5 36	ppg sec/ltr cc/30m 32nd/in 10s/10 mg/L mg/L ppb % Vol	Tool 1 2 3 4 5	Potassium Chl Ausdex Sodium Chlor Bore Seal Biocide Bircarbanta Bottom Hole Length 0.22 m 1.83 m 9.10 m 1.37 m 82.58 m	e • Asser	2 mbly (BH/ Type/E 6 1/8" PDC 6 1/8" NBS 4 3/4" DC 6 1/8" Striu 9 x 4 3/4"	Descri Bit W/ flo ng Stal DC	oat b
SIZE, IN YPE SERIAL FA V.O.B., A.P.M. DEPTH I METERA HOURS CONDIT Drill Pip oints O oints Ir	No. No. K Ib. OUT, m IN, m	1 RR 8 1/2 S519 22290 0.773 6 100-12 156 14.5 5.5 30-80	2 R R	8" PUMP 8F # of C 992 STROM 71 LINER S.P.M. 135 RATE, 8 PRESS 6 AV/DP 2 AV/DC JET VE 0 BIT HI PUMP E.C.D. H.S.I. Shake	No.: TYPE: CYLINDERS: KE, in ., in	1 F-500 3 8 5 1/2" 130 300		MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE PH GELS: CHLOR. CALCIUM EXC. LM. SOLIDS SAND KCL PHPA PF/Mf	18:00 9.5 38	6:00 9.5 36	ppg sec/ltr cc/30m 32nd/ii 10s/10 mg/L mg/L ppb % Vol % Vol % Wt	Tool 1 2 3 4 5	Potassium Chl Ausdex Sodium Chlor Bore Seal Biocide Bircarbanta Bottom Hole Length 0.22 m 1.83 m 9.10 m 1.37 m 82.58 m	e • Asser	2 mbly (BH/ Type/E 6 1/8" PDC 6 1/8" NBS 4 3/4" DC 6 1/8" Striu 9 x 4 3/4"	Descri Bit W/ flo ng Stal DC	oat b
SIZE, in YPE SERIAL FA W.O.B., R.P.M. DEPTH (DEPTH) METERA HOURS R.O.P., CONDIT Drill Pip oints O oints In Rotating	No. No. K lb. OUT, m IN, m GE m/hr. TON TUB ee: n hole: g hours:	1 RR 8 1/2 S519 22290 0.773 6 100-12 156 14.5 5.5 30-80	2 R R	8" PUMP 8F # of C 992 STROM 71 LINER S.P.M. 135 RATE, 8 PRESS 6 AV/DP 2 AV/DC JET VE 0 BIT HI PUMP E.C.D. H.S.I. Shake	No.: TYPE: CYLINDERS: KE, in t, in. GPM SURE, psi. P, ft./min. L, ft./min. EL, ft./sec. HHP. HHP. Typpg. Ty	1 F-500 3 8 5 1/2" 130 300		MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE PH GELS: CHLOR. CALCIUM EXC. LM. SOLIDS SAND KCL PHPA	18:00 9.5 38	6:00 9.5 36	ppg sec/ltr cc/30m 32nd/in 10s/10 mg/L mg/L ppb % Vol	Tool 1 2 3 4 5	Potassium Chl Ausdex Sodium Chlori Bore Seal Biocide Bircarbanta Bottom Hole Length 0.22 m 1.83 m 9.10 m 1.37 m 82.58 m 18.53 m	e • Asser	2 mbly (BH/ Type/E 6 1/8" PDC 6 1/8" NBS 4 3/4" DC 6 1/8" Striu 9 x 4 3/4"	Descri Bit W/ flo ng Stal DC	oat b
SIZE, in YPE SERIAL FA V.O.B., R.P.M. DEPTH I DETERA HOURS LO.P., CONDIT DOINTS In Rotating	No. No. K Ib. OUT, m IN, m	1 RR 8 1/2 S519 22290 0.773 6 100-12 156 14.5 5.5 30-80	2 R " 6 1/0 DP4(6 7907) 3 0.33 100- 38 15 5 23 0 2-4 3 1/2"	8" PUMP 8F # of C 992 STROM 71 LINER S.P.M. 135 RATE, 8 PRESS 6 AV/DP 2 AV/DC JET VE 0 BIT HI PUMP E.C.D. H.S.I. Shake	No.: TYPE: CYLINDERS: KE, in K	1 F-500 3 8 5 1/2" 130 300 350	gel Locatic	MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE pH GELS: CHLOR. CALCIUM EXC. LM. SOLIDS SAND KCL PHPA PF/Mf M.B.T.	18:00 9.5 38	6:00 9.5 36 3.5	ppg sec/ltr cc/30m 32nd/ir 10s/10 mg/L ppb % Vol % Vol % Wt	Tool 1 2 3 4 5 5 6	Potassium Chl Ausdex Sodium Chlor Bore Seal Biocide Bircarbanta Bottom Hole Length 0.22 m 1.83 m 9.10 m 1.37 m 82.58 m	e Asser	2 mbly (BH/ Type/E 6 1/8" PDC 6 1/8" NBS 4 3/4" DC 6 1/8" Striu 9 x 4 3/4"	Descri Bit W/ flo ng Stal DC	oat b
GIZE, in YPE SERIAL FA V.O.B., R.P.M. DEPTH (DEPTH 1 HETERA HOURS R.O.P., CONDIT DOINTS O O O O O O O O O O O O O O O O O O O	No. No. K lb. OUT, m IN, m GE m/hr. TON TUB ee: n hole: g hours:	1 RR 8 1/2 S519 22290 0.773 6 100-12 156 14.5 5.5 30-80	2 R R 6 1/1	8" PUMP 8F # of C 9092 STROH 71 LINER S.P.M. 1.35 RATE, 8 PRESS 6 AV/DP 2 AV/DC JET VE 0 BIT HI PUMP E.C.D. H.S.I. Shake Solids	No.: TYPE: CYLINDERS: KE, in K	1 F-500 3 8 5 1/2" 130 300 350	ge Locatic	MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE PH GELS: CHLOR. CALCIUM EXC. LM. SOLIDS SAND KCL PHPA PF/Mf	18:00 9.5 38	3.5 3.5	ppg sec/ltr cc/30m 32nd/ir 10s/10 mg/L ppb % Vol % Vol % Wt	Tool 1 2 3 4 5 6 Total Reason	Potassium Chl Ausdex Sodium Chlori Bore Seal Biocide Bircarbanta Bottom Hole Length 0.22 m 1.83 m 9.10 m 1.37 m 82.58 m 18.53 m	e Asser	2 mbly (BH/) Type/E 6 1/8" PDC 6 6 1/8" NBS 4 3/4" DC 6 1/8" Strii 9 × 4 3/4" 2 × 3 1/2"	Descri Bit W/ flo ng Stal DC	oat b
SIZE, in YPE SERIAL FA V.O.B., A.P.M. DEPTH (DEPTH 1 HOURS A.O.P., CONDIT DOINTS OF THE PROPERTY OF THE PROP	No. No. No. K Ib. OUT, m IN, m IN, m IN, m IN, m IN TUB IN: IN TUB IN: IN TUB IN: IN TUB	1 RR 8 1/2 S519 22290 0.773 6 100-12 156 14.5 5.5 30-80	2 R " 6 1/1	8" PUMP 8F # of C 9022 STROH 1 INER 1 S.P.M. 135 RATE, 8 PRESS 6 AV/DP 2 AV/DC 15T VE 0 BIT HI PUMP E.C.D. H.S.I. Shake Solids	No.: TYPE: CYLINDERS: KE, in L, in. GPM SURE, psi. P, ft./min. C, ft./min. EL., ft./sec. HHP. HHP. Lyppg. Control: P Outsid 2 1	1 F-500 3 8 5 1/2" 130 300 350	C N	MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE PH GELS: CHLOR. CALCIUM EXC. LM. SOLIDS SAND KCL PHPA PF/Mf M.B.T. Bearings X X	3.5 Gauge IN	3.5 3.5	bbl ppg sec/ltr scc/30m 32nd/in 10s/10 mg/L mg/L ppb % Vol % Wt ppb bbl ppb wther wr	Tool 1 2 3 4 5 6 6 Total Reason TD TD	Potassium Chl Ausdex Sodium Chlor Bore Seal Biocide Bircarbanta Bottom Hole Length 0.22 m 1.83 m 9.10 m 1.37 m 82.58 m 18.53 m	e Asser	2 mbly (BH/) Type/E 6 1/8" PDC 6 6 1/8" NBS 4 3/4" DC 6 1/8" Strii 9 × 4 3/4" 2 × 3 1/2"	Descri Bit W/ flo ng Stal DC	oat b
DEPTH I METERA HOURS R.O.P., CONDIT Drill Pip Joints O Joints Ir Rotating Max Pul I.A.D.C	No. No. K Ib. OUT, m IN, m GE m/hr. TON TUB ie: Insite: j hours: l/Torque:	1 RR 8 1/2 S519 22290 0.773 6 100-12 156 14.5 5.5 30-80	2 R " 6 1/1 DP4(6 6 7907) 3 0.33 10 20 100-38 15 5 23 0 2-4 1 3 1/2 65	8" PUMP 8F # of C 992 STROH 1 S.P.M. 135 RATE, 8 PRESS 6 AV/DP 2 AV/DC JET VE 0 BIT HI PUMP E.C.D. H.S.I. Shake Solids Insid Position	No.: TYPE: CYLINDERS: KE, in L, in GPM SURE, psi. P, ft./min. C, ft./min. EL., ft./sec. HHP. HHP. HHP. HHP. CONTROL	1 F-500 3 8 5 1/2" 130 300 350	C N Mobile	MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE PH GELS: CHLOR. CALCIUM EXC. LM. SOLIDS SAND KCL PHPA PF/Mf M.B.T. Bearings X X Y PO	3.5 Gauge IN Sition	3.5 3.5	bbl ppg sec/ltr cc/30m 32nd/ir 10s/10 mg/L ppb % Vol % Vol % Wt ppb ther WT Nan	Tool 1 2 3 4 5 6 6 Total Reason TD TD TD ne	Potassium Chl Ausdex Sodium Chlori Bore Seal Biocide Bircarbanta Bottom Hole Length 0.22 m 1.83 m 9.10 m 1.37 m 82.58 m 18.53 m	e Asser	2 mbly (BH/) Type/E 6 1/8" PDC 6 6 1/8" NBS 4 3/4" DC 6 1/8" Strii 9 × 4 3/4" 2 × 3 1/2"	Descri Bit W/ flo ng Stal DC	oat b
GIZE, in TYPE GERIAL TYPE GERI	No. No. No. K Ib. OUT, m IN, m IN, m IN, m IN, m IN TUB IN: IN TUB IN: IN TUB IN: IN TUB	1 RR 8 1/2 S519 22290 0.773 6 100-12 156 14.5 5.5 30-80	2 R " 6 1/1 DP4(6 6 7907) 3 0.33 10 20 100-38 15 5 23 0 2-4 1 3 1/2 65	8" PUMP 8F # of C 9022 STROH 1 INER 1 S.P.M. 135 RATE, 8 PRESS 6 AV/DP 2 AV/DC 15T VE 0 BIT HI PUMP E.C.D. H.S.I. Shake Solids	No.: TYPE: TYPE: CYLINDERS: KE, in L, in. CGPM SURE, psi. P, ft./min. L, ft./min. HHP. HHP. CONTROL CO	1 F-500 3 8 5 1/2" 130 300 350	C N	MUD VOL: Reading time DENSITY VISCOSITY PV / YP API W/L. CAKE PH GELS: CHLOR. CALCIUM EXC. LM. SOLIDS SAND KCL PHPA PF/Mf M.B.T. Bearings X X F PO 550 Drilling	3.5 Gauge IN	3.5 3.5	bbl ppg sec/ltr scc/30m 32nd/in 10s/10 mg/L mg/L ppb % Vol % Wt ppb bbl ppb wther wr	Tool 1 2 3 4 5 6	Potassium Chl Ausdex Sodium Chlor Bore Seal Biocide Bircarbanta Bottom Hole Length 0.22 m 1.83 m 9.10 m 1.37 m 82.58 m 18.53 m	e Asser	2 mbly (BH/) Type/E 6 1/8" PDC 6 6 1/8" NBS 4 3/4" DC 6 1/8" Strii 9 × 4 3/4" 2 × 3 1/2"	Descri Bit W/ flo ng Stal DC	oat b





Date: 18-02-17 Report No: 1

Well Name: Plumb Road 3 Client Name: DPI Water GL - AMSL 258.2m Tenure Holder: DPI Water

Landowner: Forestry Corporation of NSW

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Field Est Cost: Days from spud : AFE days (from spud): AFE Cost : Weight

Depth RKB Deviation Current Depth (MD): Casing Depth Size 9 5/8' 36 lb/ft GL- KB 2.15m TVD: 388m 12.3 m ROP: 2-20 M/HR Formation : Progress (MD): N80 23 lb/ft Proposed TD: 336m K55 11.6 lb/ft

Last LOT Results: Objective:

Last BOP Test: 9-2-17 Last BOP Drill: 9-2-17 Day and Night crew Accident Free Days: 18 Last LTI Date: Last Safety Meeting: Morning Toolbox mtg

Top Surface Cement Bottom 14.3m Conductor 7" Casing Surface 4 1/2" Casing Surface

Accidents: No 4 1/2" Casing Surfactor CURRENT OPERATION @ 06:00HRS: Wait on conductor cement, prepare equipment for next operation.

PLANNED OPERATIONS FOR NEXT 24HRS: Drill 8 1/2" hole to +/- 336m. Run and cement 7" casing.

SUMMARY OF PERIOD 00:00 to 24:00HRS: Rigged down and moved to Plumb Road 3. Rigged up equipment.

	Operation Hours		OPERATIONS FOR PERIOD 00:00 to 24:00	Time Code		
rom	To	Hours	OPERATIONS FOR PERIOD 00:00 to 24:00	Time	Joue	
4:30			Prepared to lower mast, mast lowered at 15:15hrs. Removed stairs and lowered carrier. Removed hold down chains	Mobilisation		
	18:00	3.5	sub-base. Installed wellhead on Plumb road 2. Repostioned pipe handler.	Demobilisation		
3:00			Held Pre Tour Safety mtg. Continued to spot sub-base, Spotted carrier on to sub-base and raised same. Raised	Travel		
			and pinned mast. Rigged up mud pump hard lines, air,water and power cables. Installed stairs to rig floor, spotted	Rig Service		
	24:00	6	pipe handler and rigged up same.	Other		
				Circulate Hole		
				Drilling		
			OPERATIONS FOR PERIOD 24:00 TO 06:00	Run Casing		
0:00	01:00	1	Cleaned, measured 12 1/4" BHA and 9 5/8" casing. Prepared cementing equipment.	Cementing		
1:00	02:00	1	Made up 12 1/4" bit and Drilled conductor hole to 14.3m. Layed out BHA.	Wait on Cement		
2:00	03:00	1	Rigged up and run 1 x joint of 9 5/8" casing to 12.3m. Mixed and cemented same.	Tripping		
3:00	06:00		Waited on cement, prepared 8 1/2" BHA and 7" casing.	Logging		
				Pressure Test		
				Standby		
				Safety Meeting		
				Other		
				Wait on Dayligh		
				Well Kill		
				Down Time Ria		
				Down Time Oth		
				Rig up/ Nip up		
				rag up/ rap up		
		 				
		 				
		 				
				-		
				-		
		-	Total skip bing an site - 14			
		-	Total skip bins on site = 14			
	l.	24		Total		
	ing Hour		Rotating Hours Today: Break Down Hours: 0	Total	2	

Pick Up Weight: Slow Pump Rate 1: Slack Off Weight: Rotating Weight: Slow Pump Rate 2 Safety Topics or Incidents: MUD RECORD

Pre Tour Safety m	ntg						COMPANY:		AMC		MUD USAGE				
							MUD BUILT:			bbl		Product	Usage		
BIT	RECORD):		HYDRA	ULICS:		MUD LOST:			bbl		Soda Ash	2		
NUMBER	1 RR		PUMP No.:		1		MUD VOL:	- 2	200	bbl		Potassium Chloride			
SIZE, in.	8 1/2"	'	PUMP TYPE:		F-500		Reading time	18:00	6:00			Ausdex			
TYPE	S519		# of CYLINI	DERS:	3		DENSITY	9.5	9.5	ppg		Sodium Chloride			
SERIAL No.	22290	6	STROKE, in		8		VISCOSITY	38	36	sec/ltr		Bore Seal			
TFA	0.773		LINER, in.		5 1/2"		PV / YP					Biocide			
W.O.B.,K lb.			S.P.M.		130		API W/L.			cc/30m		Bircarbantae	2		
R.P.M.			RATE, GPM		300		CAKE			32nd/ir	1	Bottom Hole Asser	nbly (BHA)		
DEPTH OUT, m			PRESSURE,	psi.	350		pH				Tool	Length	Type/Des	scription	
DEPTH IN, m	14.3		AV/DP, ft./r	nin.			GELS:			10s/10	1				
METERAGE			AV/DC, ft./r	nin.			CHLOR.			mg/L	2				
HOURS			JET VEL., ft	./sec.			CALCIUM			mg/L	3				
R.O.P., m/hr.			BIT HHP.				EXC. LM.			ppb	4				
CONDITION			PUMP HHP.				SOLIDS			% Vol	5				
TUE	BULARS:		E.C.D., ppg				SAND			%Vol	6				
Drill Pipe:		3 1/2"	H.S.I.				KCL	3.5	3.5	% Wt					
Joints Onsite:		65	Shaker Scre	ens:			PHPA								
Joints In hole:			Solids Conti	ol:			Pf/Mf								
Rotating hours:							M.B.T.			ppb					
Max Pull/Torque:											Total				
		Bit No.	Inside	Outside	Damage	Locatio	n Bearings	Gaug	e Ot	her	Reason	Com	ment		
							_								

	Bit No.	Inside	Outside	Damage	Location	Bearings	Gauge	Other	Reason	Comment	
I.A.D.C. DULL GRADING:	1RR										
		Position	Nam	е	Mobile#	Po	sition	N	lame	Mobile #	
Rig Contact (On Site	e)	Company Man	Scott Hobday		0431 453 550	Drilling	Engineer	Jordan Bunning		0405 727 677	
		Rig Manager	Phil Han	nmatt	0488 484 896	Geo	ologist	logist Andrea Strand		0427 685 808	•





Date: 19-02-17 Report No: 2

Well Name: Plumb Road 3 Client Name: DPI Water

Tenure Holder: DPT Water Tenure: Forest Permit

Landowner: Forestry Corporation of NSW

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Casing

K55

Field Est Cost: Days from spud : AFE days (from spud): AFE Cost : Weight

GL - AMSL 258.2m 2.20m GL- KB ROP: 22 M/HR

Current Depth (MD): 233m TVD: 233m Progress (MD): 77m Proposed TD: 336m

9 5/8 12.3 m N80 155.16 4 1/2 Last LOT Results:

Depth

Depth RKB Deviation 36 lb/ft 151 23 lb/ft 11.6 lb/fl

1 Deg

24.0

Formation : Objective:

Last BOP Test: 9-2-17 Last BOP Drill: 9-2-17 Day and Night crew Accident Free Days: 19 Last Safety Meeting: Morning Toolbox mtg

Last LTI Date: Accidents:

Cement Top Bottom Conductor Surface 14.3m 7" Casing Surface 156m 1/2" Casing Surface

Size

CURRENT OPERATION @ 06:00HRS: Drilling 6 1/8" production hole.

PLANNED OPERATIONS FOR NEXT 24HRS: Drill 6 1/8" production hole to 1D +/- 336m. 100H and run wire line logs. Rig up and run 4-1/2" casing

SUMMARY OF PERIOD 00:00 to 24:00HRS: Completed rig up, Drilled and cemented conductor. Waited on cement. Drilled 8 1/2" surface hole to TD at 156m. TOOH

Ran and cemented 7" casing. Installed A-section. Prepared 6 1/8" BHA **Operation Hours** OPERATIONS FOR PERIOD 00:00 to 24:00 Time Code From Hours To Cleaned, measured 12 1/4" BHA and 9 5/8" casing. Prepared cementing equipment 00:00 01:00 Mobilisation 01:00 02:00 Made up 12 1/4" bit and Drilled conductor hole to 14.3m. Layed out BHA Demobilisation Rigged up and run 1 x joint of 9 5/8" casing to 12.3m. Mixed and cemented same. Waited on cement, prepared 8 1/2" BHA and 7" casing. Pressure tested Plumb Road 2 well head 02:00 03:00 Travel 03:00 Rig Service 09:15 connection to 600psi. Other 09:15 12:00 Drilled 8 1/2" hole from 14.3m to 96m Circulate Hole Drilled 8 1/2" hole from 96m to 156m. 13:30 12:00 1.5 Drilling 13:30 14:00 0.5 Circulated hole clean while receprocating drill string Run Casing 14:00 Layed out single, Dropped Totco survey. Flowed checked. Cementing 14:15 15:15 TOOH from 156m to surface.Retried survey 1 deg. Wait on Ceme 15:15 15:30 0.25 Held pre job safety mtg, rigged up to run 7" casing Tripping 15:30 17:00 1.5 Made up float and shoe track and checked for flow path, TIH with 7" to setting depth at 155.16m Logging 17:15 Pressure Test 17:00 Circulated hole clean while rigged up Halliburton. Held Pre Job Safety mtg with Halliburton and crew, Rigged up Halliburton cement head and line 17:15 Standby Pumped 5bbls fresh water spacer, Pressure tested surface lines to 2900psi, Pump 15bbls fresh water spacer. Safety Meeting Mixed and pump 12.6bbls of lead cement at 12.5ppg, Mixed and pumped 7.1bbls of tail cement at 15.6ppg. Other Displaced with 19.2 bbls fresh water at 3bbls/min, bumped plug with 180psi increasing to 1500psi 5min. Wait on Dayligh Bleed back 0.3bbls. Cement returns after 14.8 bbls into displacement. 5.2 bbls cement to surface Well Kill Cement in place at 18:38 hrs. Rigged down Cement head and lines. Waited on cement. Removed 8 1/2" BHA from racks. Prepared 6 1/8" BHA. 18:45 22:30 1.75 3.75 Down Time Rig 18:45 Down Time Oth 23:00 0.5 Slacked off 7" casing. Broke out landing joint and layed out same 22:30 Rig up/ Nip up 23:00 23:30 23:30 24:00 0.5 Broke out casing drive sub ,changed out X/O , installed A-section and tourque to spec 0.5 Cleared rig floor, Picked up bit and near bit stabalizer OPERATIONS FOR PERIOD 24:00 TO 06:00 TIH with 6 1/8" BHA, tagged cement at 138m. 00:00 01:00 1.25 Drilled out cement, float, shoe track and rat hole to 156m. 00:00 02:15 06:00 3.75 Drilled 6 1/8" hole from 156m to 233m. Total skip bins on site = 14

Total: Total Operating Hours Today Rotating Hours Today: **Break Down Hours: 0** Pick Up Weight: Slack Off Weight: **Rotating Weight:** Slow Pump Rate 2: Slow Pump Rate 1:

Safety Topics or Incidents: MUD RECORD Pre Tour Safety mtg AMO MUD USAGE MUD BUIL bbl Usage Produc HYDRAULTCS: BIT RECORD MUD LOST hhl Soda Ash NUMBER 1 RR PUMP No MUD VOL: Potassium Chloride bbl 20 -500 6:00 18:00 SIZE, in. 8 1/2 6 1/8 PUMP TYPE Reading time Ausdex TYPE DP408 9.5 9.6 ppg # of CYLINDERS DENSITY Sodium Chloride 7907092 SERIAL No 222906 TROKE, in 8 VISCOSITY 38 39 sec/ltr Zun Gum 0.773 0.371 INER, in 5 1/2 Biocide W.O.B.,K lb cc/30n 10 S P M 130 API W/L Bircarbanta R.P.M. 150 300 145 RATE, GPM 1 32nd/ir Bottom Hole Assembly (BHA) CAKE 350 DEPTH OUT, m 156 156 PRESSURE, psi рН 11 Tool Length Type/Description DEPTH IN, m 14.3 AV/DP, ft./min. **GELS** 10s/10 0.21 m 8 1/2" PDC Bit 8 1/2" NBS W/ float METERAGI 141.7 1.26 m W/DC, ft./mir CHLOR mg/L HOURS 4.2 ET VEL., ft./sec 9.35 m 6 1/4" DC CALCIUM mg/L R.O.P., m/hr. 60 SIT HHP XC. LM. ppb 1.87 m 8 1/2" String Stab CONDITION PUMP HHP SOLIDS % Vol 37.25 m 4 x 6 1/4" DC TUBULARS .C.D., ppq. SAND %Vol 0.76 m 6 % Wt 10 x 4 3/4" DC Drill Pipe: 3 1/2 100.81 m H.S.I. KCL 18.44 m loints Onsite HPA x 3 1/2" HWDP 65 haker Screens: loints In hole Rotating hour: M.B.T ppb Max Pull/Torque: 169.95 m

	Bit No.	Inside	Outside	Damage	Location	Bearings	Gauge	Other	Reason	Comment	
I.A.D.C. DULL GRADING:	1RR	1	1	CT	N	Χ	IN	WT	TD		
		Position	Nam	е	Mobile#	Po	sition	N	ame	Mobile #	
Rig Contact (On Site	e)	Company Man	Scott Hobday		0431 453 550	Drilling	Engineer	Jordan	Bunning	0405 727 677	
		Rig Manager	Phil Han	matt	0488 484 896	Geo	Geologist		a Strand	0427 685 808	



Well Name: Plumb Road 3

Client Name: DPI Water

TDC - INGAUGE DAILY DRILLING REPORT



Date: 20-02-17 Report No: 3

Tenure Holder: DPI Water Tenure: Forest Permit Landowner: Forestry Corporation of NSW Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Field Est Cost: Days from spud: AFE days (from spud):

156m

GL - AMSL 2.20m GL- KB ROP: 22 M/HR

Current Depth (MD): 333m TVD: 333m Progress (MD): 177m Proposed TD: 336m

Size Casing Depth 9 5/8 K55 12.3 m 7" 4 1/2' N80 155.16 K55

Surface

AFE Cost : Weight Depth RKB Deviation 36 lb/ft 1 Deg 151 23 lb/ft

Formation: Objective:

Last BOP Test: 9-2-17 Accident Free Days : 20

Last BOP Drill: 9-2-17 Day and Night crew Last LTI Date:

Cement Top 7" Casing Surface

Last LOT Results:

1/2" Casin

11.6 lb/ft **Bottom**

Mobile #

0405 727 677

0427 685 808

Last Safety Meeting : Morning Toolbox mtg
Accidents : No

CURRENT OPERATION @ 06:00HRS: Drilling 6 1/8" production hole.

PLANNED OPERATIONS FOR NEXT 24HRS: Drill 6 1/8"production hole to TD +/- 336m. TOOH and run wire line logs. Rig up, run 7" casing and cement. Release Rig.

SUMMARY OF PERIOD 00:00 to 24:00HRS: Drilled out float and shoe track and rat hole to 156m. Drilled 6 1/8" production hole. TOOH and waited on mud pump. Rigged up and function tested. TIH to 180m, washed and reamed to bottom at 311m

Operation Hours			ODEDATI	Time C				
From	То	Hours		ONS FOR PERIOD 00:00	10 24.00	Tille	oue	
00:00	01:00		TIH with 6 1/8" BHA, tagged cement a			Mobilisation		
00:00	02:15		Drilled out cement, float, shoe track ar			Demobilisation		
02:15	06:00		Drilled 6 1/8" hole from 156m to 233n			Travel		
06:00	09:00		Drilled 6 1/8" hole from 233m to 277n			Rig Service		
09:00	11:15		Drilled 6 1/8" hole from 277m to 311n			Other		
11:15				Mud pump bearing failure, unable to pur		Circulate Hole		
			Rigged down mud pump and removed.	. Waited on back up mud pump from Rom	a. Cleaned and loaded unrequired	Drilling		
	18:00		equipment.			Run Casing		
18:00	21:30	3.5	Rig repair, Wait on mud pump. Pump a	arrived on location at 21:30hrs.		Cementing		
21:30			NPT: Rigged up pump and functioned			Wait on Cement		
22:45	24:00	1.25	NPT: TIH to 180m,tagged up. Precau	tionary washed and reamed from 180m t	o 311m.	Tripping		
						Logging		
						Pressure Test		
00.00	00.00	0.5		PERATIONS FOR PERIOD 24:00 TO 06:	:00	Standby		
00:00	00:30		NPT: Circulated hole clean while recep			Safety Meeting		
00:30	03:00		Drilled 6 1/8" hole from 311m to 320n			Other		_
03:00	06:00	3	Drilled 6 1/8" hole from 320m to 333n	n.		Wait on Dayligh Well Kill		
						Down Time Ria		_
-								
						Down Time Oth		_
-						Rig up/ Nip up		-
\vdash								
							-	-
-								-
							-	-
								-
								=
								-
								=
								_
								_
								-
								-
								-
			Total skip bins on site = 17					
			·					
To	otal:	24				Total	24.	.0
Operat	ing Hours	Today	Rotati	ng Hours Today:	Break Down Hours: 0	•		
Pick Up	Weight:		Slack	Off Weight:	Rotating Weight:			

Slow Pump Rate 1: Slow Pump Rate 2:

Safety Topics or	Safety Topics or Incidents:								MUD RECORD							
Pre Tour Safety m	itg						COMPANY:		AMC			MUD USA	GE			
							MUD BUILT:			bb		Product	Usage			
BIT	RECORE):		HYDRAU	JLICS:		MUD LOST:			bb		Soda Ash				
NUMBER	1 RR	2 RR	PUMP No.:		1		MUD VOL:	1	190	bb		Potassium Chloride				
SIZE, in.	8 1/2'	6 1/8	" PUMP TYPE	:	F-500		Reading time	06:00	18:00			Ausdex				
TYPE	S519	DP408	F # of CYLIN	DERS:	3		DENSITY	9.5	9.6	ppg		Sodium Chloride				
SERIAL No.	22290	6 79070	92 STROKE, ir	ı	8		VISCOSITY	38	39	sec/ltr		Zun Gum				
TFA	0.773	0.37	LINER, in.		5 1/2"		PV / YP					Biocide				
W.O.B.,K lb.	5	10	S.P.M.		130		API W/L.			cc/30r	ni	Bircarbantae				
R.P.M.	150	145	RATE, GPM		170		CAKE	1	1	32nd/i	n	Bottom Hole Asser	mbly (BHA)			
DEPTH OUT, m	156		PRESSURE	, psi.	350		pН	11	9		Tool	Length	Type/Description			
DEPTH IN, m	14.3	156	AV/DP, ft./	min.			GELS:			10s/10)r 1	0.22 m	6 1/8" PDC Bit			
METERAGE	141.7		AV/DC, ft./	min.			CHLOR.			mg/L	2	1.83 m	6 1/8" NBS W/ float			
HOURS	4.2		JET VEL., f	t./sec.			CALCIUM			mg/L	3	9.10 m	4 3/4" DC			
R.O.P., m/hr.	60		BIT HHP.				EXC. LM.			ppb	4	1.37 m	6 1/8" String Stab			
CONDITION			PUMP HHP.				SOLIDS			% Vol	5	82.58 m	9 x 4 3/4" DC			
TUB	BULARS	1	E.C.D., ppg	g.			SAND			%Vol	6	18.53 m	2 x 3 1/2" HWDP			
Drill Pipe:		3 1/2"	H.S.I.				KCL	3	3	% Wt						
Joints Onsite:		65	Shaker Scr	eens:	•		PHPA									
Joints In hole:			Solids Conf	trol:			Pf/Mf									
Rotating hours:							M.B.T.			ppb						
Max Pull/Torque:											Total	113.63 m				
,		Bit No.	Inside	Outside	Damage	Locatio	n Bearings	Gauge	e Ot	her	Reason	Com	nment			
I.A.D.C. DULL GRA	ADING:	1RR	1	1	CT	N	X	IN	V	VT	TD					
2																

Position

Drilling Engineer

Name

Jordan Bunning

Andrea Strand

Mobile#

0431 453 550

0488 484 896

Name

Scott Hobday

Phil Hammatt

Position

Company Man

Rig Manager

Rig Contact (On Site)





Mobile #

0405 727 677

0427 685 808

Depth RKB Deviation

151

1 Deg

Date: 21-02-17 Report No: 4 Well Name: Plumb Road 3 Client Name: DPI Water GL - AMSL 258.2m

2.20m

GL- KB

ROP: 22 M/HR

Objective:

Tenure Holder: DPI Water Tenure: Forest Permit Landowner: Forestry Corporation of NSW Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Depth

Casing

Field Est Cost: Days from spud: AFE days (from spud):

36 lb/ft

23 lb/ft

11.6 lb/ft

AFE Cost : Weight

Current Depth (MD): 336m TVD: 336m 12.3 m 155.16 Progress (MD): 177m N80 K55 336m

Formation: Proposed TD: 336m Last LOT Results: Last BOP Drill: 9-2-17 Day and Night crew

Last BOP Test: 9-2-17 Accident Free Days : 21 Last LTI Date: Last Safety Meeting: Morning Toolbox mtg Accidents: No

Cement Тор Bottom 7" Casing 4 1/2" Casing Surface 156m Surface 336m

Size

9 5/8

4 1/2

CURRENT OPERATION @ 06:00HRS: Rigging down equipment, prepare to spot and rig up Flushby rig.

PLANNED OPERATIONS FOR NEXT 24HRS: Rig down equipment, Preapre for TDC Flushby rig for completions.

SUMMARY OF PERIOD 00:00 to 24:00HRS: Drilled 6 1/8" production hole to TD at 336m. TOOH, Ran and cemented 4 1/2" casing. Final cut and dress casing, Rig released at 19:00hrs. Rigged down and cleaned equip

Operation Hours OPERATIONS FOR PERIOD 00:00 to 24:00 **Time Code** From To 00:00 00:30 0.5 NPT: Circulated hole clean while receprocating drill string Mobilisation Drilled 6 1/8" hole from 311m to 320m Drilled 6 1/8" hole from 320m to 333m 03:00 Demobilisation 03:00 06:00 Travel 07:15 Drilled 6 1/8" hole from 333m to 336m. 06:00 Rig Service 07:45 0.5 Circulated hole clean while receprocating drill string. Other 07:45 09:45 TOOH from 336m to surface, unloaded drill collars from racks Circulate Hole Rigged up Kinetic wire line and run in hole with dummy tool, Tool through table at 10:15hrs, hoist wire line. Run #1 MPR"=64"Res,Lat Res,Single Point Res,Fluid Res, SP,Temp,GR,Mag Dev through table at 11:00hrs. Log 09:45 Drilling Run Casino up. Rigged down Kinetic wire line. Cementing 0.25 Pre Job Saafety mtg, Rigged up to run 4 1/2" casing.
3.25 Made up float and 1 joint shoe track, checked floats for flow path. TIH with 4 1/2" casing to 334.10m. 12:45 Wait on Cement 12:45 16:00 Tripping 16:00 16:15 Circulated hole clean at 3bbls min, while Halliburton prepared spacer Logging 0.25 16:30 Held pre job Safety mtg with Halliburton and crew, while continued to circulate hole clean Pressure Test Rigged up Halliburton cement head and lines, Pressure tested surface lines to 3000psi, Mixed and pumped 10bbls of 9.5ppg gelled spacer, Mixed and pumped 16.9 bbls of 12.5ppg lead cement, Mixed and pumped 8.9 bbls of 16:30 Standby Safety Meeting 15.6ppg cement. Displaced with 16.6 bbls of water, bumped plug with 440psi and increased to 1500psi. Bleed Other back 0.2bbls. Floats holding, Cement in place at 17:54 hrs. Rigged down cement head and lines.
Conected Top Head Drive to casing and lower to well TD at 336m, Cut casing stump at 4 3/4" and dress same 18:15 Wait on Dayligh 18:15 19:00 0.75 Well Kill Down Time Rig Rig released at 19:00hrs Down Time Oth Broke out Top Head Drive subs, cleaned and stored equipment. Prepared to and lowered mast at 20:15 hrs. Loaded 3 1/2" Drill pipe on pipe trailer. Rigged down air,water lines and electrical cables from rig carrier. Removed rig carrier from sub base and installed well head on Plumb Road 3. 19:00 Rig up/ Nip up **OPERATIONS FOR PERIOD 24:00 TO 06:00** Removed mud pump hard lines to carrier, cleaned sub base and loaded onto trailer. Continued general rig down 0:00 and cleaning equipment for demobilization Total skip bins on site = 17Total 24.0 Total: 24 Operating Hours Today: Rotating Hours Today: Break Down Hours: 0

Pick Up Weight: Slow Pump Rate 1: Slack Off Weight: Rotating Weight: Slow Pump Rate 2:

Safety Topics or Incidents: MUD RECORD Pre Tour Safety mtg OMPANY AMC MUD USAGE MUD BUILT hhl Product Usage HYDRAULICS: BIT RECORD: MUD LOST: bbl Soda Ash NUMBER PUMP No. MUD VOL Potassium Chloride 1 RR 2 RF 190 bbl 8 1/2 SIZE, in. 6 1/8 PUMP TYPE: F-500 Reading time 06:00 18:00 Ausdex S519 DP408F # of CYLINDER DENSITY 9.5 9.6 ppg Sodium Chloric SERTAL No. STROKE, in sec/ltr Zun Gum 222906 7907092 VISCOSITY 38 39 0.773 0.37 5 1/2 TFA INER, in. PV / YP Biocide W.O.B.,K lb. cc/30n API W/L R.P.M 150 145 RATE GPM 170 CAKE 32nd/ii Bottom Hole Assembly (BHA) Length Type/Description DEPTH OUT, m 156 PRESSURE, p 350 11 Tool 0.22 m DEPTH IN, m 14.3 156 AV/DP, ft./min. GELS: 10s/10 6 1/8" PDC Bit METERAGE 141.7 6 1/8" NBS W/ float 1.83 m AV/DC, ft./min CHLOR mg/L 4.2 HOURS IET VEL., ft./se CALCIUM mg/L 3 9.10 m 4 3/4" DC EXC. LM SOLIDS 6 1/8" String Stab 9 x 4 3/4" DC R.O.P., m/hr CONDITION 60 BIT HHP ppb % Vol 1.37 m 82.58 m PUMP HH TUBULARS: .C.D., ppg. %Vol 2 x 3 1/2" HWDP SAND 18.53 m Drill Pipe % Wt H.S.I. KCL loints Onsite Shaker Screens PHPA loints In hole Pf/Mf Solids Control: Rotating hours M.B.T ppb 1ax Pull/Torque: Total 113.63 m Bit No. Inside Outside Damage Location Bearings Gauge Other Reason Comment I.A.D.C. DULL GRADING: 1RR Ν IN WT 1

Position

Drilling Engineer

Name

Jordan Bunning

Mobile#

0431 453 550

0488 484 896

Name

Scott Hobday

Phil Hammatt

Position

Company Man

Rig Manager

Rig Contact (On Site)

TDC

TDC - INGAUGE DAILY DRILLING REPORT



Time Code

1obilisation

Travel

Demobilisation

Date: 22-02-17 Report No: 1

ROP:

From

06:00

0:00

Tenure Holder: DPI Water Tenure: Forest Permit

Well Name: Plumb Road 1-2-3 Landowner: Forestry Corporation of NSW Client Name: DPI Water

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Casing

Depth

Field Est Cost: Days from spud: AFE days (from spud):

GL - AMSL GL- KB

Current Depth (MD): TVD: Progress (MD):

Last LTI Date:

AFE Cost : Weight Size Depth RKB Deviation

Bottom

Proposed TD: Formation: Objective: Last BOP Test: Last BOP Drill:

Last LOT Results: Cement

Top 7" Casing 4 1/2" Casing

Last Safety Meeting : Morning Toolbox mtg
Accidents : No

Hours

Accident Free Days : 22

Operation Hours

To

06:00

CURRENT OPERATION @ 06:00HRS: Rig up Kinetic wire line and commence logs on Plumb Road 2

PLANNED OPERATIONS FOR NEXT 24HRS: Circulate and flow Plumb Road 1, while peform logs and perforations on Plum Road 1 and 2.

SUMMARY OF PERIOD 00:00 to 24:00HRS: Continued to rig down rig equipment, Spotted in Flushby rig and rigged up same. Performed perforations on Plumb Road 1 Rigged up air pack trailer, Flow T and anullar, TIH and unloaded well. **OPERATIONS FOR PERIOD 00:00 to 24:00**

Removed mud pump hard lines to carrier, cleaned sub base and loaded onto trailer. Continued general rig down

and cleaning equipment for demobilization.

Removed 2 x 22,000L of drilling fluid from mud tanks with Namoi Wastecorp. Spotted Flushby rig over Plumb Road 1 and rigged up same. Kinetic on location at 08:30hrs, Spotted equipment and rigged up.

	09:30	3.5		d rigged up sam			n at 08:30h	ırs, Spo	otted e	quipment	and	rigged ι	ip.		Rig Serv	rice		
09:30	09:45	0.25		y mtg with Kine											Other			
09:45				ne 1 Gauge too											Circulate	e Hole		
			at 10:58 h	rs, Hoisted sam	ie. Downloa	ided data	and forwar	ded to	Brisba	ine office	for co	nforma	tion of per	forations.	Drilling			
			Held Safet	y mtg with Kine	tic and crev	w, Loaded	3m Perf gi	uns and	d ran i	n hole thr	ough	table at	: 13:55hrs	. Correlate	Run Casi			
	15:30	5.75		on depth at 578 nitic wire line ur							and r	iggea a	own Kinitio		Cementi Wait on			
15:30	13.30	3.73		r and installed							Farr ti	uhina to	ng and sli	ns	Tripping		$\overline{}$	-
15.50	18:00	2.5	Installed h	and rails and st	airs.										Logging			
18:00			Cleaned or	it trip tank, Spo	tted air pad	ck trailer,	rigged up o	dischar	ge har	d line to r	mud t	anks an	d secured	same.	Pressure	Test		
	20:45	2.75	Ran hydrai	ulic lines to Koo	mey unit, p	ressured	up and fund	ctioned	l same	ž.					Standby			
20:45	21:15	0.5		3/8" tubing an											Safety M	1eeting		
21:15	21:45	0.5	TIH to 95n	n, unloaded wel	I with 200p	si.									Other	Davillala		
21:45	24:00	2.25	11H from 9	5m to 419m											Wait on Well Kill			
															Down Tir		$\overline{}$	
						OPERA	TIONS FO	R PER	IOD 2	4:00 TO	06:0	0			Down Ti		_	
															Rig up/			
00:00	12:30	0.5		vell at 419m wi	th 650psi.													
12:30		2.5		19m to 577m.														
03:00	03:30	0.5		vell at 577m wi									1 .		 		 	
03:30	04:30	1		n system and re											 	\longrightarrow	\longrightarrow	
04:30	06:00	1.5		ushby rig over P st on Plumb Roa		∠ III prep	eration for	wire iii	ie , re	movea we	ııı nea	ıu, rerui	ıı mard iine	пис вкір віп	 	\longrightarrow	\dashv	
	55.00	1.3	ioi now tes	SC OIL FIUITID KO	iu I.										 		-+	
															1		-+	
																		\longrightarrow
															 			
																	-+	$\overline{}$
																	\dashv	
			Total skip	oins on site = 1	5												\Box	
<u> </u>		24													Total		\longrightarrow	24.0
	otal: ing Hours				Do+-	ting Hou	ırs Today:				Bre:	ak Dow	n Hours:	0	Total			24.0
Pick Ur	Weight:	louay				k Off We						ating W		<u>-</u>				
	ump Rate	1:				v Pump R					1							
	Topics or		nts:										MUD	RECORD				
Pre Tou	r Safety m	tg						COMPA			AMC		4		D USAGE			
		DECCE		1	111/55::	U TOO		MUD B				bbl	 	Product	\longrightarrow	Usage	—	
NU INABE:		RECOR): 	5,1145.11	HYDRAU	JLICS:		MUD L				bbl	₽	Soda Ash	La salada			
NUMBER SIZE, in				PUMP No.: PUMP TYPE:		-		MUD V Reading		П		bbl	+	Potassium Chl Ausdex	oride		+	
TYPE				# of CYLIND				DENSIT			\dashv	ppg	+	Sodium Chlor	ride		+	
SERIAL	No.			STROKE, in				VISCOS		-+	-+	sec/ltr	 	Zun Gum			+	-
TFA				LINER, in.				PV / Y		-	\neg		1	Biocide	-		\top	
W.O.B.,	K lb.			S.P.M.				API W				cc/30m	il	Bircarbanta				
R.P.M.				RATE, GPM				CAKE				32nd/ir		Bottom Hole				
	OUT, m			PRESSURE,				рН					Tool	Length		Type/D)escr	iption
DEPTH :				AV/DP, ft./n				GELS:			\longrightarrow	10s/10						
METERA	IGE			AV/DC, ft./n				CHLOR			\longrightarrow	mg/L	2		+			
HOURS R O P	m/hr			JET VEL., ft. BIT HHP.	/sec.	+		CALCIU EXC. LI		-+		mg/L ppb	3	-	-+			
R.O.P., CONDIT	ION			PUMP HHP.	+	 		SOLIDS		-+	\rightarrow	% Vol	5		-+			
		BULARS	:	E.C.D., ppg.				SAND			-	%Vol	6					
Drill Pip				H.S.I.				KCL				% Wt		_				
Joints C	nsite:			Shaker Scre				PHPA										
Joints II				Solids Contr	ol:			Pf/Mf				<u> </u>						
	hours:							M.B.T.		\vdash	\longrightarrow	ppb	Total		$-\!\!\!-\!\!\!\!+$			
Max Pul	l/Torque:		Bit No.	Inside	Outside	Damace	e Locatio	n Pas	ringe	Gauge	O+1	her	Total Reason		Comm	ent		
I.A.D.C	. DULL GRA	DING:	DIC NO.	1113146	Outside	Dailiage	LUCALIO	pea	ungs	Gauge	- 50	161	1.003011		COIIIII	Territ		
I.A.D.C. DULL GRADING:			†	+				<u> </u>	-+									
	Position		Nam		Mobile#	Mobile# Position		oition	Name		Mol	bile #			$\neg \neg$			
											<u> </u>							
	Rig Contact	t (On Site	e)	Company Man	Scott Ho	obday	0431 453 5	550 E	Drilling	Engineer		lordan B	unning	0405 7	727 677			
ı	Rig Contact	t (On Site	e)			obday		550 E	Drilling				unning	0405 7				



TDC - INGAUGE **DAILY DRILLING REPORT**



Mobile #

0405 727 677 0427 685 808

Date: 23-02-17

Report No: 2 Well Name: Plumb Road 1-2-3 Client Name: DPI Water

Tenure Holder: DPI Water Tenure: Forest Permit

Landowner: Forestry Corporation of NSW

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Field Est Cost: Days from spud : AFE days (from spud):

AFE Cost : Weight Depth RKB Deviation GL - AMSL 258.2m Current Depth (MD): Casing Depth Size GL- KB TVD: ROP: Formation : Progress (MD): Proposed TD:

4 1/2" Casing

Last LOT Results: Objective:

Last BOP Test: Last BOP Drill: Accident Free Days : 23 Last LTI Date: Last Safety Meeting: Morning Toolbox mtg Accidents: No

Cement Тор Bottom Conductor 7" Casing

CURRENT OPERATION @ 06:00HRS: Continue to circulate air to lift fluid on Plumb Road 1

PLANNED OPERATIONS FOR NEXT 24HRS: Circulate air to lift fluid on Plumb Road 1, Rigged down Flushby and rig up on Plumb Road 3 and run tubing SUMMARY OF PERIOD 00:00 to 24:00HRS: Ran in tubing and unloaded well. Moved Flushby rig to well 2 and 3 ,Performed perforations on Plumb Road 2-,3

			Continued to	flow Plumb Road 1									
	eration Ho		OPFRAT	IONS FOR P	FRIOD (0:00 to	n 24:0	20		т	ime Co	de	
From	To	Hours		10115 1 011 1	LICIOD	, o. o c	0 2-11			NA 1 10 11			
00:00			Unloaded well at 419m with 650psi.							Mobilisatio			
12:30	03:00		TIH from 419m to 577m.	N		. I: £ t-	de trans			Demobilisa	ition		
	03:30		Unloaded well at 577m with 820psi.E Bleed down system and removed air					lawarad n	not	Travel Rig Service	_		
03:30	04:30	1	Spotted Flushby rig over Plumb Road							Other	=		
04:30	06:00	1.5	for flow test on Plumb Road 1.	ı z iii preperation ior	wire line , ren	ioved well fil	eau, rerui	i naru iine	into skip bin	Circulate F	lala		
06:00	06:00		Held Safety mtg with Kinetic and cre	•••						Drilling	ioie		
06:00	06:15	0.25	Run wire line 1 Gauge tool, tools thro		are changed o	ıt tools Dun	2 DDT / ('DI \throu	ah tahla	Run Casino	,		
00.13			at 07:10 hrs, Hoisted same. Downloa							Cementing			
			Held Safety mtg with Kinetic and cre							Wait on Ce			
			to peforation depth at 359m to 365m						Correlated	Tripping	mem		
			Plumb Road 2 free flowing to surface				riggeu uc	WII KIIIILIC		ттрріпд	-		
	10:30	4.15	Spotted Kinitic wire line unit at Pluml			Dack Hulu.				Logging		-	
10:30	11:30	4.15	Rigged down and moved Flushby rig			20				Logging Pressure T	oct		
11:30	11.30	1	Run wire line 1 Gauge tool, tools thro				2 DRT / C	'BL\throu	ah tahlo	Standby	col		
11.30			at 12:22 hrs, Hoisted same. Downloa							Safety Mee	oting		
			Held Safety mtg with Kinetic and cre							Other	eting		
	15:00	3.5	to peforation depth at 305m to 311m						Correlateu	Wait on Da	vliah		
15:00	15:00		Rigged down and moved Flushby rig					WII KIIIIUC		Down Time			
15:30	15:30	0.5	From 07:30 ,Continued to circulate o	to Plumb Road 1, in	preperation of	completing	well flow.	lomoh to F	oma	Down Time			
13.30	18:00	2.5	Wash and stored equipment.	III PIUITID KOAU I TEC	ording data. Lo	aueu equipi	Hent for t	ellion to r	.UIIIa.	Rig up/ Ni			
10.00	24:00	6	Continued to circulate on Plumb Road	d 1 dumned and cle	anad mud tank	s into skip b	inc Cono	rall housel	rooning	Kig up/ ivi	p up		
16.00	24.00	0	around lease.	u 1, uumpeu anu cie	aneu muu tank	s into skip b	ilis. Gene	i ali ilousei	Reeping		-		
			around lease.										
				OPERATIONS F	OP PERIOR 3	4:00 TO 06	5-00				-		
00:00	06:00	6	Continued to circulate on Plumb Road					to cloan m	ud tanks				
00.00	00.00	0	Continued to circulate on Fluind Road	u 1, Freapareu IDC i	ig 10 iioi deiii	obilizacion, c	Jonanaea	to clean n	uu taiks.		-		
											-		
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												\dashv	
			Total skip bins on site = 15									\dashv	
			וטנמו אוף טוווא טוו אונפ = בא									\dashv	
т.	otal:	24								Total		\dashv	24.0
	ing Hours		Dot	ating Hours Today:	•	Pro	ak Dow	Hours: 0	1	iotai		- 1	24.0
	o Weight:	o roudy		ck Off Weight:			tating W		'				
	ump Rate	11.		w Pump Rate 2:		ROI	aung W	agiiti					
	Topics or			w rump nate Zi	ı	l		MIID	ECORD				
	r Safety m		its.		COMPANY:			MODK		D USAGE			
rie iou	i Salety III	ııy			MUD BUILT:		bbl	1	Product		Jsage	1	
					HOD BOTEL:		וטט		Product	1 (saye	1	

Position

Company Man Rig Manager

Rig Contact (On Site)

Name

Scott Hobday

BIT RECORD: HYDRAULICS: MUD LOST: bbl Soda Ash NUMBER PUMP No. MUD VOL: bbl Potassium Chloride SIZE, in. PUMP TYPE Reading time Ausdex TYPE # of CYLINDERS ppg sec/ltr DENSITY Sodium Chloride SERIAL No. STROKE, in VISCOSITY Zun Gum _INER, in. Biocide W.O.B.,K lb. cc/30m SPM API W/L R.P.M. 32nd/ii Bottom Hole Assembly (BHA) RATE, GPM CAKE DEPTH OUT, m Type/Description PRESSURE, psi Н Tool Length DEPTH IN, m 10s/10i AV/DP, ft./min. GELS METERAGE AV/DC, ft./min CHLOR mg/L HOURS JET VEL., ft./sec CALCIUM mg/L R.O.P., m/hr. BIT HHP. EXC. LM. ppb CONDITION PUMP HHP SOLIDS % Vol TUBULARS: SAND %Vol E.C.D., ppg. 6 Drill Pipe: % Wt KCL H.S.I. HPA Joints Onsite Shaker Screens: loints In hole Solids Control: of/Mf Rotating hour: M.B.T Max Pull/Torque: Total Bit No. Inside Outside Damage Location Bearings Gauge Other Reason Comment I.A.D.C. DULL GRADING:

> Position Drilling Engineer Geologist

Jordan Bunning

Mobile#



TDC - INGAUGE **DAILY DRILLING REPORT**



Depth RKB Deviation

Date: 24-02-17 Report No: 3 Well Name: Plumb Road 1-2-3

ROP: ormation

Objective:

Accidents: No

Tenure Holder: DPI Water Tenure: Forest Permit

Rig Description: Drillmec G55 Landowner: Forestry Corporation of NSW Target Basin:

Field Est Cost: Days from spud : AFE days (from spud):

AFE Cost : Weight

Bottom

Client Name: DPI Water GI - AMSI 258 2m GL- KB

Current Depth (MD): TVD: Progress (MD):

Proposed TD:

Last LOT Results:

Last BOP Test Last ROP Drill Accident Free Days: 24 Last LTI Date: Last Safety Meeting: Morning Toolbox mtg

Cement Top Conductor 7" Casing 4 1/2" Casin

Casing

Drilling Company: TDC Drilling

Depth

Size

CURRENT OPERATION @ 06:00HRS: Transfering fluid into Namoi Wastecorp tankers.

Position

Company Man

Rig Contact (On Site)

Name

Scott Hobday

Phil Hammatt

PLANNED OPERATIONS FOR NEXT 24HRS: Circulate air to lift fluid on Plumb Road 3, TOOH with tubing ,Rigged down Flushby and rig up on Plumb Road 2 SUMMARY OF PERIOD 00:00 to 24:00HRS: Continued to circulate Plumb Road 1, TOOH wih tubing and nippled down BOP's. Moved Flushby rig to Plumb Road 3

rigged up and TIH with tubing to 312m. Unloaded well and began circulating with air **Operation Hours** OPERATIONS FOR PERIOD 00:00 to 24:00 From To Hours Continued to circulate on Plumb Road 1, Preapared TDC rig 10 for demobilization, continued to clean mud tanks Mobilisation 00:00 06:00 Continued to develop Plumb Road 2 on free flow. 06:00 Continued to circulate on Plumb Road 1, Assisted Namoi Wastecorp with vac tanker removing drilling fluid from Demobilisation 09:45 3.75 mud tanks. Loaded trailers with rig equipment. Travel 09:45 Received conformation to cease circulating Plumb Road 1. Set up Flushby rig and install Farr Tubing tong 14:15 4.5 Rig Service 14:15 15:15 15:15 17:15 Move Flushby rig off Plumb Road 1, nippled down BOP's and installed wellhead Nippled up BOP's on Plumb Road 3, Spotted Flushby rig and TIH with 2 3/8" tubing to 312m. Circulate Hole 17:15 Rigged up air pack, ran 2" hard line and unloaded well Drilling Consutled with Client and stopped developing Plumb Road 2 on free flow as turbidity still high. Will re-start 18:00 development with assistance of air pack after Plumb Road 3 finished Circulated with air to lift fluid on Plumb Road 3, Repositioned skip bins with cuttings. Continued housekeeping 18:00 Run Casino 24:00 on location. Cementing 24:00 Circulated with air to lift fluid on Plumb Road 3, Repositioned mud tanks and filled with fluid from well Wait on Cemen 02:30 Shut in well temporarily due to limited storgae for fluid Tripping 02:30 Loaded TDC trailers with equipment for demobilization, Continued to clean equipment. 06:00 Logging Pressure Test Standb Safety Meeting **OPERATIONS FOR PERIOD 24:00 TO 06:00** Other Wait on Daylig 00:00 Circulated with air to lift fluid on Plumb Road 3, Repositioned mud tanks and filled with fluid from well, Well Kill 02:30 Down Time Rig Shut in well due to limited storgae for fluid. 02:30 06:00 3.5 Loaded TDC trailers with equipment for demobilization, Continued to clean equipment Down Time Oth Rig up/ Nip up Total skip bins on site = 15 Total: Total 24.0

Break Down Hours: 0 Operating Hours Today: Rotating Hours Today: Slack Off Weight: **Rotating Weight:** Pick Up Weight: Slow Pump Rate 1: Slow Pump Rate 2 MUD RECORD Safety Topics or Incidents: Pre Tour Safety mtg COMPANY **MUD USAGE** MUD BUILT bbl Usage Product HYDRAULICS BIT RECORD MUD LOST Soda Ash Potassium Chloride NUMBER PUMP No. MUD VOL: bb PUMP TYPE SIZE, in Reading time Ausdex TYPE # of CYLINDERS DENSITY ppg Sodium Chloride SERIAL No. STROKE, in VISCOSITY sec/ltr Zun Gum PV / YP INER, in Biocide W.O.B.,K lb S.P.M. API W/L cc/30n Bircarbantae Bottom Hole Assembly (BHA) RATE, GPM R.P.M. CAKE 32nd/i DEPTH OUT, m PRESSURE, psi Tool Length Type/Description рΗ DEPTH IN, m 10s/10 AV/DP, ft./min. GELS: METERAGE AV/DC, ft./min. CHLOR mg/L HOURS JET VEL., ft./sed CALCIUM mg/L R.O.<u>P.,</u> m/hı BIT HHP EXC. LM ppb CONDITION PUMP HHP SOLIDS 6 Vol TUBULARS E.C.D., ppg SAND %Vol 6 Drill Pipe: HSI KCI % Wt Shaker Screens PHPA Joints Onsite Joints In hole: Solids Control: Pf/Mf M.B.T ppb Rotating hours Max Pull/Torque: Total Bit No. Inside Outside Damage Location Bearings Gauge Other Comment Reason I.A.D.C. DULL GRADING:

Mobile#

0488 484 896

Position

Geologist

0431 453 550 Drilling Engineer

Name

Jordan Bunning

Mobile #

0405 727 677

0427 685 808



Slow Pump Rate 1:

TDC - INGAUGE



DAILY DRILLING REPORT Tenure Holder: DPI Water Drilling Company: TDC Drilling Rig Description: Drillmec G55 Date: 25-02-17 Field Est Cost: Report No: 4 Tenure: Forest Permit Days from spud: Well Name: Plumb Road 1-2-3 Target Basin: Landowner: Forestry Corporation of NSW AFE days (from spud): AFE Cost : Weight Client Name: DPI Water Current Depth (MD): Size Depth RKB Deviation GL - AMSL 258.2m Casing Depth GI - KB TVD: Progress (MD): ROP. Formation : Proposed TD: Last LOT Results: Objective: Last BOP Test: Last BOP Drill: Cement Тор Bottom Accident Free Days: 25 Last LTT Date: Conductor Last Safety Meeting : Morning Toolbox mtg 7" Casing 1/2" Casir

CURRENT OPERATION @ 06:00HRS: Circulate air to lift fluid on Plumb Road 2

PLANNED OPERATIONS FOR NEXT 24HRS: Circulate air to lift fluid on Plumb Road 2, 100H with tubing and rig down

SUMMARY OF PERIOD 00:00 to 24:00HRS: Continued to circulate Plumb Road 3, Loaded out TDC equipment. Completed Plumb Road 3. Rigged down and and rigged up on Plumb Road 2

Ope	eration Ho	ours	ODEDATIO	NC FOR REPLOP 00-00) t = 24-00		
From	То	Hours	OPERATIO	NS FOR PERIOD 00:00) to 24:00	Time C	ode
00:00			Circulated with air to lift fluid on Plumb	Road 3, Repositioned mud tanks and fi	lled with fluid from well,	Mobilisation	
	02:30	2.5	Shut in well and attempted to free flow	well to manage large volumes produced	d and onsite storage limits.	Demobilisation	
02:30	07:30	5	Attempted to free flow well, Loaded TDC	trailers with equipment for demobiliza	ation, Continued to clean equipment.	Travel	
07:30	08:00	0.5	Namoi Wastecorp removed fluid from lo	cation, ran up air packs, Unloaded well		Rig Service	
08:00			Circulated well with air to lift fluid on Plu	ımb Road 3, Loaded out TDC equipmer	nt to Roma, continued to clean rig	Other	
	18:00	10	equipment.			Circulate Hole	
18:00			Circulated well with air to lift fluid on Plu	umb Road 3, continued to clean rig equ	ipment and housekeeping around	Drilling	
	20:00	2	lease. Received conformation to cease a			Run Casing	
20:00	20:30	0.5	Bleed down well, opened anullar and rig	ged down air lines.		Cementing	
20:30	21:30	1	TOOH layed out 2 3/8" Tubing			Wait on Cement	
21:30	22:30	1	Rigged down pipe trailer, carrier. Nipple			Tripping	
22:30	23:30	1	Removed well head from Plumb Road 2,	nippled up BOP's. Spotted and rigged	up carrier, pipe trailer and airpack.	Logging	
23:30	24:00	0.5	TIH with 2 3/8" tubing.			Pressure Test	
						Standby	
						Safety Meeting	
				OPERATIONS FOR PERIOD 24:00	ГО 06:00	Other	
00:00	01:00	1	TIH with 2 3/8" tubing to 367m.			Wait on Dayligh	
01:00	06:00	5	Unloaded Plumb Road 2 with 620psi and	continued to circulate with air to lift fl	uid.	Well Kill	
						Down Time Rig	
						Down Time Oth	
						Rig up/ Nip up	
		<u> </u>					
			Total skip bins on site = 15				
		2.4				<u></u>	
	otal:	24				Total	24.0
	ing Hour			g Hours Today:	Break Down Hours: 0		
	p Weight:			ff Weight:	Rotating Weight:		
	Date			.mm Data 3:			

MUD RECORD Safety Topics or Incidents: Pre Tour Safety mtg COMPANY: MUD USAGE MUD BUILT bbl Usage Product BIT RECORD HYDRAULICS MUD LOST bbl Soda Ash NUMBER PUMP No.: MUD VOL: bbl Potassium Chloride SIZE, in. PUMP TYPE Reading time Ausdex # of CYLINDERS: TYPE DENSITY Sodium Chloride SERIAL No STROKE, in VISCOSITY sec/ltr Zun Gum LINER, in. Biocide W.O.B.,K lb. cc/30m SPM API W/L Bottom Hole Assembly (BHA) R.P.M. RATE, GPM CAKE 32nd/ir DEPTH OUT, m PRESSURE, psi. рΗ Tool Length Type/Description 10s/10 DEPTH IN, m AV/DP, ft./min. GELS: METERAGE CHLOR AV/DC, ft./min. mg/L HOURS JET VEL., ft./sec CALCIUM mg/L R.O.P., m/hr. ppb % Vol RIT HHP EXC., LM PUMP HHP TUBULARS: SAND %Vol E.C.D., ppg. Drill Pipe: % Wt H.S.I. KCL Joints Onsite: PHPA Shaker Screens Joints In hole: Solids Control: Pf/Mf Rotating hours: Max Pull/Torque: M.B.T. ppb

Slow Pump Rate 2:

Outside Damage Location Real

Incido

	DIL NO.	Iliside	Outside	Dailiage	Location	bearings	Gauge	Olife	Keason	Comment	
I.A.D.C. DULL GRADING:											
		Position	Nam	е	Mobile#	Po	sition	N	lame	Mobile #	
Rig Contact (On Site	e)	Company Man	Scott Ho	bday	0431 453 550	Drilling	Engineer	Jordai	n Bunning	0405 727 677	
		Rig Manager	Phil Ham	nmatt	0488 484 896	Geo	ologist	Andre	ea Strand	0427 685 808	

Total

TDC

Formation:

TDC - INGAUGE DAILY DRILLING REPORT



Date: 26-02-17 Tenure Holder: DPI Water Report No: 5 Well Name: Plumb Road 1-2-3 Client Name: DPI Water Tenure: Forest Permit

Landowner: Forestry Corporation of NSW

Drilling Company: TDC Drilling Rig Description: Drillmec G55 Target Basin:

Field Est Cost: Days from spud: AFE days (from spud):

GL - AMSL GL- KB ROP:

Current Depth (MD): TVD: Progress (MD): Proposed TD:

AFE Cost : Weight Casing Depth Size Depth RKB Deviation

Last LOT Results: Objective: Cement

Last BOP Test: Last BOP Drill: Accident Free Days : 26 Last LTI Date: Last Safety Meeting : Morning Toolbox mtg
Accidents : No

Top Bottom Conductor 7" Casing 4 1/2" Casin

CURRENT OPERATION @ 06:00HRS: Rig down and demob TDC equipment to Roma

PLANNED OPERATIONS FOR NEXT 24HRS: Wait on daylight ,Demob equipment, back blade location.

SUMMA	ARY OF P	ERIOD (00:00 to 24:00	OHRS: TIH with tubir					circulate with a 4:00hrs. Rig of						
Ope	ration Ho	ours									ipinient.			_	
From	То	Hours		OPERA	ITONS	FOR F	EKTOD	00:00	0 to 24:	UU			Time Co	ode	
00:00	01:00	1	TIH with 2 3/8	3" tubing to 367m.								Mobilis	sation		
01:00	06:00	5		nb Road 2 with 620ps									bilisation		
06:00	11:30	5.5		circulate with air to lif				ase air lif	ting Plumb Ro	ad 2.		Travel			
11:30	11:45	0.25	Bleed down we	ell, opened anullar ar	nd rigged d	lown air line	s.					Rig Se	rvice		
11:45	12:45	1	TOOH and laye	ed out 2 3/8" Tubing								Other			
12:45	14:00	1.25	Rigged down p	pipe trailer and carrie	r. Nippled	down BOP'S	and installed	well hea	d.			Circula	ate Hole		
			Rig Released a	at 14:00hrs								Drilling	q		
												Run C	asing		
												Cemer	ntina		
													n Cement		
												Trippir			
												Loggin			
													ire Test		
												Standl			
													Meeting		
			1		OPER	ATIONS FO	R PERIOD 2	4:00 TO	06:00			Other			
			1										n Dayligh		
												Well K			
													Time Rig		
													Time Oth		
													p/ Nip up		
												rag u	b/ Nip up		
												<u> </u>			
												<u> </u>			
		-										-			
		-										-			
				<u> </u>			-								
			Total skip bins	on site = 15	_	•			_						
	otal:	24										Total			24.0
Operati	ing Hour	s Today	:			urs Today:			Break Down	1 Hours:	0				
	Weight:			Sla	ack Off W	/eight:			Rotating W	eight:					
	ump Rate			Sic	ow Pump	Rate 2:			1						
Safety	Topics or	Incide	nts:	L.	•				•	MUD	RECORD				
	r Safety m						COMPANY:				MU	D USA	GE		
		د -					MUD BUILT:		bbl		Product		Usage		
	ВЛТ	RECOR	D:	HYDR	AULICS:		MUD LOST:		bbl		Soda Ash		50		
NUMBER				PUMP No.:		I	MUD VOL:		bbl		Potassium Ch	lorida		+	
TACTUDE	`	1		I OTHE INO			TIOD VOL.		וטט		i otassiani Cii	oriuc			

SIZE, in. PUMP TYPE: Reading time Ausdex TYPE SERIAL No. # of CYLINDERS ppg Sodium Chlorid STROKE, in VISCOSITY sec/ltr Zun Gum TFA LINER, in. PV / YP Biocide W.O.B.,K lb. API W/L. cc/30n Bottom Hole Assembly (BHA) R.P.M. RATE, GPM CAKE 32nd/ir DEPTH OUT, m PRESSURE, psi эΗ Tool Length Type/Description DEPTH IN, m AV/DP, ft./min. GELS: 10s/10 METERAGE AV/DC, ft./min. CHLOR mg/L HOURS CALCIUM mg/L JET VEL., ft./sec R.O.P., m/hr CONDITION EXC. LM. SOLIDS ppb % Vol BIT HHP TUBULARS: E.C.D., ppg. SAND %Vol 6 % Wt Drill Pipe: H.S.I. KCL Joints Onsite: Shaker Screens: PHPA Joints In hole: Rotating hours: Solids Control: Pf/Mf M.B.T.

Max Pull/Torque:										Total		
	Bit No. Inside		Outside	Damage	Location	n Bearings Gauge		uge Other		Reason	Com	ment
I.A.D.C. DULL GRADING:												
		Position	Nam	е	Mobile#		Position		Na	me	Mobile #	
Rig Contact (On Site	e)	Company Man	Scott Ho	bday	0431 453 5	50 Drill	ing Engine	er .	Jordan	Bunning	0405 727 677	
		Rig Manager	Phil Ham	nmatt	0488 484 8	96 (Geologist		Andrea	Strand	0427 685 808	



Well Completion Report



Appendix 9 – Mud Engineer Reports

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ABN 56 009 283 416



DRILLING FLUIDS RECAP

For

In Gauge

Plumb Road 1

Prepared by: Tapan Patel

Date: February, 2017





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1.0 HSE



Rig Participation sheet v.3 2015 Last updated 11/5/2015

QHSE Rig Participation log

Project:NSW GMWCompany:InGaugeWell:Plumb Road 1Rig:TDCLead Engineer 1Tapan PatelLead Engineer 2-Night Engineer 2Night Engineer 2-

Date	Engineer	Activity	Additional Comments (free text)
7/02/2017	Tapan Patel	Induction	
11/02/2017	Tapan Patel	Evacuation Drill	



3.0 Well Summary

Operator:	InGauge
Contractor:	TDC
Well type:	Water Monitoring Wells
Arrival Date:	6 th Feb 17
Spud Date:	7 th Feb 17
Days on Well:	7

Interval	Hole Depth (M)	Casing Size (inch)	Depth (M)	Mud Wt. (lb/gal)	Mud Type
Top Hole	12	9 5/8"	12	8.34	Water
Intermediate Hole	156	7"	156	8.6	KCL/Polymer Mud
Production Hole	642		642	9.8	KCL/Polymer Mud



3.1 Top Hole Interval (12 ¼" Hole, Surface – 12m)

3.1.1 Operations Summary

Made up 12 $\frac{1}{2}$ " section BHA and bit, drilled 12 $\frac{1}{2}$ " section to 16.2 meters then run 9 5/8" casing after POOH and cemented the same.

3.1.2 Fluid Parameters

Simple water was used to drill this section.

3.1.3 Solids Control

Shale shakers are fitted with API 120/170 screen for this section. Mud cleaner was also frequently used to remove fined drilled solids.

3.1.4 Recommendations

Drilling fluids used to drill section was ideal choice, no further recommendation to make.





3.2 Intermediate Hole Interval (8 ½" section, 12 m – 156m)

3.2.1 Operations Summary

Picked up and made up 8 1/2" BHA. Drilled 8 ½" section to 158 meters. Circulated hole clean while reciprocating drill string. Run 7" casing after POOH and cemented same. Notice cement return to surface while cementing. Reactive clays were encountered around 89 meters so K+ concentration started depleting, mixed more KCL and increase its concentration by 3 % by weight to maintain desire level of K+ concentration for clay inhibition and to minimise any wellbore instability associated with drilling fluids.

3.2.2 Fluid Parameters

	Min	Max	Min	Max
Mud Weight (ppg):	8.5	ALAP	8.5	8.7
Funnel Viscosity (sec/qt):	35.0	45.0	35.0	35.0
Plastic Viscosity (cps):	ALAP	ALAP	1.0	5.0
Yield Point (lb/100 ft^2):	12.0	20.0	10.0	14.0
pH:	8.5	9.0	8.8	9.1
API Fluid Loss (mL):		9.0	13.0	21.0
Hardness (mg/L):		400	120	720
LGS (%):		7.0	0.4	0.5
MBT (lb/bbl Bentonite):		17.5	2.5	5.0
Sand Bed Test (mm):		N/A	N/A	N/A
Primary Salt (%):		2.0	2.5	2.5

It was difficult to maintained programed mud properties for this section as mixing hopper was not working well. It gets blocked frequently especially while mixing Polymers like Aus-Dex and Xan-Bore etc. However, we have done ever best to keep mixing going and try maintain mud properties to desired levels.

3.2.3 Solids Control

Shale shakers are fitted with API 120/170 screen for this section. Mud cleaner was also frequently used to remove fined drilled solids. Overall solid control equipments have worked well in this section. There were no issues in maintaining lower mud weight.

3.2.4 Recommendations

Rig mixing equipment capacity is inappropriate for mixing drilling fluids as per programed concentration. Mud hopper gets blocked frequently. In future wells, it is strongly





recommended to have good mixing hoppers which are capable of producing quicker mixing rate for chemicals so drilling fluids properties can be maintained within programed specification.





3.3 Production Hole Interval (6 1/8" Section, 152 – 642 m)

3.2.5 Operations Summary

RIH to 133 meters, Drilled out float, shoe track and hole to 158 meters then perform FIT to 430 psi equivalent to 25 ppg. Drilled 6 1/8" section to 642 meters which was called TD and Mud Engineer was released next day.

3.2.6 Fluid Parameters

	Min	Max	Min	Max
Mud Weight (ppg):			8.8	9.1
Funnel Viscosity (sec/qt):			37	38
Plastic Viscosity (cps):			6	8
Yield Point (lb/100 ft^2):			8	12
рН:			9	9
API Fluid Loss (mL):			11.0	22.0
Hardness (mg/L):			40	280
LGS (%):			2.0	4.4
MBT (lb/bbl Bentonite):			15.0	17.5
Sand Bed Test (mm):			20.0	50.0
Primary Salt (%):			3.0	4.0

KCL/Polymer mud was used to drill out this section. All of remaining mud from previous section was recycled and treated with required concentration of Aus-Dex, Xan-Bore, KCL and Sodium Chloride. Mud Weight was gradually increased to 9.8 ppg in stages before penetrating in potential reservoir section which is expected encounter around 560 meters.

3.2.7 Solids Control

Solid control equipment were performed well in this section as we managed to keep dump and dilution to minimum especially considering that most of mud from previous section were recycle for use in this section.

Mud cleaner was continually used throughout this section. Shale shaker were dressed with API 120 and 170 mesh screen in this section.

3.2.8 Recommendations

Programmed mud system was ideal for drilling through geology for this section and performed well considering there are none wellbore instability issues due to mud related. It





would be advisable to use filming amine for prevent corrosion to rig equipment as PH alone won't be sufficient enough to prevent corrosion considering high salinity of mud system.





4.0 Daily Discussion Report

Operator: In Gauge

Well: Plumb Road 1

Contractor: TDC

Mud Company: Australian Mud Company

Date:07/02/07 | TD = 12 | Report / Day No: 1

Operations Summary

Made up 12 1/4" BHA and Bit. Drilled 12 1/4" hole to 16.2 m. TOOH to surface laying out drill collars and bit. Picked up 1 joint 9 5/8" casing and TIH. Circulate and wash casing to bottom. Mix and pump cement. Waited on cement. Measure and strap 8 1/2" BHA. Changed out liners from 5" to 5 1/2".

Fluids Summary

Started Mixing Mud for 8 1/2" section. Treated whole active system with 1.5-2.0 KCL %. Currently, transferring mud from active into pill tank treating it with excess concentration of Xanbore (2.2 ppb) and Aus-Dex (6.6 ppb) then slowly blending it back into active system to bring mud properties within specifications.

Date:08/02/17 TD = 156 Report / Day No: 2

Operations Summary

Drilled 8 1/2" section to 156 meters, circulate hole clean, run 7" casing and Cemented same.

Fluids Summary

During Drilling, we continue transferring mud from active to pill tank and treating it with excess concentration of Xanbore & Aus-Dex then bleeding it back into active system to maintain desire properties. Notice very reative clays around 89 meter quickly check KCL contain of mud which showed signed off drop in KCL concentration due to drilling through reactive clays so Immediately started mixing more KCL to maintain KCL desire





concentration. Mixing hopper is causing trouble it gets blocked quiet frequently which is making very difficult to mix required amount of chemicals especially Polymers like Xan-Bore and Aus-Dex.

Date:09/02/17 | TD = 156 | Report / Day No: 3

Operations Summary

Cemented 7 " casing, wait on cement. Current operations, nipple up BOP.

Fluids Summary

No chemicals treatment has been given. Notice cement return to surface while cementing 7 " casing. Circulating tanks via mixing lines in order

to avoid settling of solids.

Date:10/02/17 | TD = 213.00 | Report / Day No: 4

Operations Summary

Nipple up BOP and pressure test the same.Made up 6 1/8" BHA. Rigged up and run wire line survey. TIH to 139m, Drilled out

float, shoe track and rat hole to 158m. Displaced well to 9ppg mud. Drilled 3m new hole from 158m to 161m. Circulated hole clean.

Fluids Summary

Added 2 % KCL into active system to increase KCL concentration to desire level. Mixed Aud-Dex and Xan-Bore to decrease fluid loss and

increase low end rheology.

Date:11/02/17 | TD = 475.00 | Report / Day No: 5

Operations Summary

Drilling 6 1/8" section to 475 meters

Fluids Summary





Continue treating active system with Xanbore, Aus-Dex and KCL via building premixes at regurlar interval and blending them back into system

slowly.

Date:12/02/17	TD = 642.00	Report / Day No: 6
---------------	-------------	--------------------

Operations Summary

Drilled 6 1/8" to depth of 642 meters then started POOH.

Fluids Summary

Continue treating active system with KCL, Aus-Dex and Xanbore via premixes to maintain desire mud specifications.





5.3 Volume Summary

DAILY VOLUME ANALYSIS

WELL:

HOLE SIZE: 8.5"

6.125"

MUD TYPE:

KCL/Polymer Mud

KCL/Polymer Mud

ENGINEER: Tapan Patel

VOLUME UNITS: bbls



	'													
DATE	DEPTH	ACTIVE PIT VOLUME	Mud in HOLE	RESERVE	DAILY TOTAL	VOLUME BUILT	CUMULATIVE BUILT	CUMULATIVE BUILT for Well	LOST ON SURFACE	CUMULATIVE LOST @ SURFACE for WELL	LOST DOWN HOLE	CUMULATIVE LOST DOWNHOLE for WELL		
						8.5" HOL	ESECTION							
07 Feb 17	12.0	116.8	3.0	13.0	132.8	132.8	132.8	132.8						
08 Feb 17	156.0	189.0	20.1	13.0	222.1	98.0	230.8	230.8	8.7	8.7	0.0	0.0		
09 Feb 17	156.0	196.3	20.1	12.4	228.8	6.7	237.5	237.5		8.7	0.0	0.0		
Cumulat	Cumulative for Interval 237.5 8.7 0.0													
Cumu	Cumulative for Well 237.5 8.7													
	6.125" HOLE SECTION													
10 Feb 17	213.0	139.6	19.5	25.4	184.5	184.5	184.5	422.0		8.7				
11 Feb 17	475.0	169.4	46.4	19.2	235.0	76.7	261.2	498.7	26.0	34.7	0.2			
12 Feb 17	642.0	173.4	68.7	46.5	288.6	67.4	328.6	566.1	13.8	48.5	0.0			
						•								
							222.2							
	ive for Interval						328.6	500.4	39.8	10.5	0.2			
Cumu	lative for Well							566.1		48.5				



5.4 Daily Mud Properties

D	D	D	М					DR	ILLING F	LUIE	PRO	PERTI	ES				K	N			SOLI	DS		
Α Υ	A T E	E P T	U D	F.	R P.V.	HEOL(OGY GEL	GEL	API			FI	LTRAT	Έ			L	T R	R E	% HIGH	% LOW	S A	M B	P S
	_	H	W T	ν. ν	@ @	@ @	10	10	FLUID	C A				ATE ANAL		HARD	_	A T	T O R	GRAV	GRAV	N D	Т	I
No	2017	m	Ppg	S	120	120	SEC	MIN	LOSS	K E			ALINIT		CHL	NESS	%	E	T					
					deg	sec					рН	Pm	Pf	Mf	mg/l	mg/l								
1	07/02	12	8.5	32	1	10	2	2	21	0. 5	9.1	0.6	0.4	0.6	12000	120					0.47	0.1	2.5	
2	08/02	156	8.7	35	5	12	5	12	13	1	8.8	0.6	0.4	0.6	32000	340	2.5				0.47	0.8	5.0	
3	09/02	156	8.7	35	4	14	6	7	13	1	8.9	0.4	0.2	0.7	33000	720	2.5				0.40	8.0	5.0	
4	10/02	198	9.1	37	5	14	5	7	7.0	1	9.0	0.8	0.4	1.5	55000	400	3.5				8.0	0.5	7.5	
5	11/02	475	9.8	37	8	12	3	4	7.5	1	8.9	0.2	0.1	0.2	89000	520	4				5.19	8.0	7.5	
6	12/02	642	9.9	36	9	11	5	8	9.5	1	8.8	0.15	0.1	0.15	82000	540	3.5				6.54	0.9	7.5	



5.5 Material Reconciliation

Product		nit ze	Transferred from Previous Well	Product Received (excluding transfer)	Total Product Received	Product Usage	Product Transferred to Next Well
AMC Biocide G	25	ltr	0	16	16	2	14
Aus-Dex	25	kg	0	60	60	32	28
Boreseal F	25	lb	0	42	42	0	42
Citric Acid	25	kg	0	40	40	0	40
Sodium Chloride	25	kg	0	384	384	240	144
Soda Ash	25	kg	0	24	24	1	23
Sodium Bicarbonate	25	kg	0	48	48	3	45
Potassium Chloride	25	kg	0	192	192	114	78
Xan-Bore	25	kg	0	40	40	12	28



6.0 Daily Mud Reports





T			r				<u> </u>					
	TATE	COUNTRY	Australia			Date	07-Feb-17		T.D. (MD/TVD)	Meters	12.0	12.0
WELL		InGauge		Cantus	-4	Spud Date TDC	06-Feb-17		Bit @ (MD/TVD)		Maki	ng BHA
Operator Report for		Scott Hobda	117	Contra Repor		Phil			Activity @ 2400 h Rig No.	irs:	Waki	пд впа
Well Name an		Plumb Road			r Block No.	FIIII			State/Country		NSV	V/AUS
Well Name and	iu ivo.	Drill Strin		irieiu (I Block No.	Casin	g Details			Mud Volum		V/A03
Туре	O.D	I.D.	Weight	Length	Description	O.D - Weight		Depth	Mud in Hole	3.0	Active Pits	116.8
1,400	(in.)	(in.)	(lbs/ft)	(m)	Doddiption	(in lbs/ft)	(in.)	to (m)	Circ Vol		Ann Vol	110.0
	()	(111.)	(150/11)	(111)	Cond.	9.625	8.921	12.0	Displ Vol	110.0	String Vol	
					Inter.	0.020	0.021	12.0	Reserve	13.0	ECD (ppg)	
					Prod.				Mud Type		KCL/Polymo	er
					Liner				maa iypo	Circulatio		
					Linoi				Pump Make/Mod			
			I			Mud F	Properties		Liner x Stroke @		5 x 7 25	(0) @ 97%
Sample from				Pit / F-line / Shal	er Suction		loportion		Bbl/stk	0.0426937		(0) 0 0.70
Mud Temp (In	n / Out)			°C	0 0 0 0 0 0 1 0 1 1				Bbl/min	0.0 .2000.	GPM	
Time Sample				Hrs	i. 7:00				Circulating Press	ure (Psi)	0	
Sample Depth				Mete	_				Bottoms Up Time			
Weight				pp					Bottoms Up Strol			
Funnel Viscosi	sity @		°C	sec. / q					Total Circulation			
Plastic Viscosi			°C	C	_				Total Circulation			
Yield Point	ity ©			lb / 100ft							pecification	9
Gel Strength		10"/ 10' / 30'		157 10010	2/				Weight		Viscosity	35-45
API Filtrate		10710700		cc / 30 mir					Filtrate		рН	8.5
HTHP Filtrate	@	N/A	°C	cc / 30 mir		1			KCI	2	YP	12-20
Cake Thicknes				1/32		1				Solids Ar		12 20
Corrected Reto				% by Vo		1			TIME	7:00	, 5.5	
Retort Oil	J. CONG	<u> </u>		% by Vo		1			% LGS	0.47		
Corrected Wat	ter			% by Vo		1			% Barite	0.77	-	
Sand Content		t)		% by Vo		1			ppb Bar	†	-	
Methylene Blu			nnh	Equivalent Bentonit					% Bent equ.	0.27		
pH	ie Capac	Meter	ррь	Equivalent Dentonit	9.1				ppb Ben eq.	2.50		
Alkalinity Mud	(Pm)	Meter		cc N/50 H2SO4 Aci					% DS	0.19	1	
Alkalinity Filtra		/f\		cc N/50 H2SO4 Aci					ppb DS	1.75	1	
Chlorides	ate (1 1/1V	"'/		mg /						Rheometer	Paadings	
Total Hardness	•			mg /					600 rpm	12	Neaulilys	1
KCI (from K+ p		tion teet)		% by Weigh					300 rpm	11	1	
K+	precipita	tion test)		mg /					200 rpm	7	1	
Ca++				mg /					100 rpm	6		
CaCl ₂				% by Weigh					6 rpm	2	1	
NaCl				% by Weigh					3 rpm	1	1	
INACI				70 by Weigi	1.09				Annular Hydrau		(DP/OH)	(DC/OH)
Sulphite				mg /	I NA				Velocity (ft/min)	iics	(DF/OH)	(DC/OH)
S.G Brine				s.c					Eff. Viscosity (cp)		1	
Average SG of	f Solide								Critical Velocity (f		1	
Average 30 0	JUIUS	Volume Ana	alveie (bble)	5.0	Bit Data		IADC Code		Critical Velocity (I		1	
Volume Mixed	4		ily	Well Total	Size (in.)	24.000	Jets(Nr x 32 ^{na})		Transport Eff. (%		1	
Salvage Mud	u	Da	шу	Well Total	NB	24.000	Hrs.today/total	/ 0	Cuttings Conc. (\			
Drill/Rain Wate	ar.	13	0.6	130.6	S/N REED		W.O.B	7.0	Effective M.WT (p		1	
Recycled Wate		13	0.0	130.0	Depth In	1	RPM		Surge & Swab Pre		Mud Doneit	<u>.</u>
Chemical Addit		2	.3	2.3	Drilled meter	rs 12.0	TFA (in²)		Surge (ppg):		Swab (ppg):	
Total Added			2.9	132.9	Dimou meter		draulics	1	Total Annular Press			
Solids Control		13.		132.3	Nozzle Veloc		a.aunos		Total Annular Press			
Down hole loss	ses				Bit Pressure						Equipment	
Dumped					Hyd. Horsep				Total Circulating		qu.pciit	Screens
Other surface	losses					in ² (HHP/in ²)			Shaker 1: Hours		12.0	20/120/120/1
Corrections	100069				Impact Force				Shaker 2	run.	12.0	-0/120/120/1
COLLECTIONS					impact i olce	(101)			CHARCI Z		t	
Total Losses					-				Mud Cleaner - S\	NACO.	 	
Operations Su	ımmarv				1				ividu Ciedilei - SI	Hrs Run:	UF WT	bbls/hr
			d 12 1/4" holo	to 16.2 m. TOOH to	curface leving	out drill collars	and hit Dicked u	n 1 joint 0	De-sander	13.0 hrs	0	5513/111
'					, ,			, ,	(2-cones)	13.01115	1	
			•	bottom. Mix and pu	mp cement. wa	alted on cemen	i. Measure and sti	ap 8 1/2	(2-001165)			
BHA. Changed	a out line	ers from 5 to :	5 1/2 .						De-silter	13.0 hrs		
										13.01115		
									(8-cones)			
Fluid Summar	rv.		ı						-	Cost Brea	kdown	
Started Mixing Mud for 8 1/2" section. Treated whole active system with					h 1 5-2 0 KCl 0	4 Currently tro	aneforring mud fro	m activo into	Daily Mud Cost	OUSL DIES	\$	771.97
									Prev Mud Cost		\$	111.91
pill tank treating it with excess concentration of Xanbore (2.2 ppb) and a					Aus-Dex (b.b p	po) men slowly	DIETIONING IT DACK I	ino active	Total Mud Cost		\$ \$	771.97
system to bring mud properties within specifications.									Daily Eng. Cost		\$	850.00
1												850.00
Eng · To	apan Pa	tal		Phone: +61-7-	+61-7-3723-3699 Warehouse: +61-7-3723-3699							
		IAN MUD CO	LTD		3723-3688	Mobile:	+61-4-03545-32					
Joini. At	COINAL			ndation expressed orally						representation		2,471.97
I									es resulting from the u			



WELL	CTATE	COLINITOY	Aetwalia	<u>9</u>		Data	00 Feb 47		T.D. (MD/T/D)	Matara	450.0	150
	STATE	COUNTRY	Australia			Date Spud Date	08-Feb-17 06-Feb-17		T.D. (MD/TVD) Bit @ (MD/TVD)	Meters	156.0	156.0
Operator		InGauge		Contract	or	TDC	00-rep-17		Activity @ 2400		Comonti	ng 7 casing
Report for		Scott Hobda	11/	Report fo		Phil			Rig No.	1115.	Cement	ily / casilly
Well Name a	and Na	Plumb Road			Block No.	FIIII			State/Country		NC	W/AUS
Well Name a	and No.		ng Details	rieid oi i	IOCK INU.	Casin	g Details			Mud Volum		WAUS
Туре	O.D	I.D.	Weight	Length	Description	O.D - Weight		Depth	Mud in Hole		Active Pits	189.
туре	(in.)	(in.)	(lbs/ft)	(m)	Description	(in lbs/ft)	(in.)	to (m)	Circ Vol	20.1	Ann Vol	109.
	(111.)	(111.)	(IDS/IL)	(111)	Cond.			12.0	Displ Vol	209.1		
						9.625	8.921			40.0	String Vol	
					Inter.	7	6.360	156.0	Reserve		ECD (ppg)	
					Prod.				Mud Type		KCL/Polym	er
					Liner					Circulation	on Data	
									Pump Make/Mod			
						Mud F	roperties		Liner x Stroke @			(0) @ 97%
Sample from	n			Pit / F-line / Shake	Suction	Suction			Bbl/stk	0.0426937	SPM.	
Mud Temp	(In / Out)			°C					Bbl/min		GPM	
Time Sample	le Taken			Hrs.	14:00	8:00			Circulating Press	sure (Psi)	•	
Sample Dep	oth			Meters	65.0	156.0			Bottoms Up Time	e (min.)		
Weight				ppg	8.60	8.70			Bottoms Up Stro			
Funnel Visco	nsity @		°C	sec. / qt.	31	35			Total Circulation			
Plastic Visco			°C	cp	2	5			Total Circulation			
Yield Point	osity ©			lb / 100ft2	8	12				d Property S	nocification	10
Gel Strength	h	10"/ 10' / 30'		ID / TUUIL2	1/2	5/7	+			ALAP		
		10 / 10 / 30		oc / 00!			 		Weight		Viscosity	35-45
API Filtrate		\$1/*	00	cc / 30 min.	12.0	13.0			Filtrate	<= 9	pH	8.5
HTHP Filtrat		N/A	Ü	cc / 30 min.	NA	NA	ļl		KCI	2	YP	12-20
Cake Thickn				1 / 32"	1.0	1.0			1	Solids A		
Corrected Re	Retort Solid	s		% by Vol.	0.7	0.5			TIME	14:00	8:00	<u> </u>
Retort Oil				% by Vol.					% LGS	0.65	0.47	
Corrected W	Vater			% by Vol.	99.3	99.5			% Barite			
Sand Conter		it)		% by Vol.	0.8	0.8			ppb Bar			
Methylene B			pnh	Equivalent Bentonite	5.0	5.0			% Bent equ.	0.55	0.55	1
pH	z.uo oupu	Meter	PPS	Zquiraioni Zonionico	8.9	8.8			ppb Ben eq.	5.00	5.00	
Alkalinity Mu	ud (Pm)	WIOTOI		cc N/50 H2SO4 Acid	0.40	0.40			% DS	0.10	-0.08	+
Alkalinity Filt		AF)		cc N/50 H2SO4 Acid	0.3/0.7	0.3/0.7			ppb DS	0.10	-0.71	_
Chlorides	iliale (Fi/i	/11)										
				mg / I	20,000	32,000				Rheometer		1
Total Hardne				mg/l	380	340			600 rpm	12	22	
KCI (from K+	+ precipita	tion test)		% by Weight	0.50	2.50			300 rpm	10	17	
K+				mg / I	2,700	13,300			200 rpm	8	15	
Ca++				mg/l	NA	NA			100 rpm	6	12	
CaCl ₂				% by Weight	NA	NA			6 rpm	2	6	
NaCl				% by Weight	2.80	3.19			3 rpm	1	4	
				-					Annular Hydrau	llics	(DP/OH)	(DC/OH)
Sulphite				mg / I					Velocity (ft/min)			
S.G Brine				s.g.	1.0224	1.0373			Eff. Viscosity (cp)		
Average SG	of Solids			s.g.	2.50	2.50			Critical Velocity (
7 tvorage CC	or Condo	Volume Ana	lveie (hhle)	0.g.	Bit Data	2.00	IADC Code		Critical F/Rate (g			
Volume Mix	vod.		rily	Well Total	Size (in.)		Jets(Nr x 32 nd)		Transport Eff. (%			
Salvage Mud		De	illy	Well Total	NB		Hrs.today/total	/ 0	Cuttings Conc. (
		-	1.0	004.0				7.0				
Drill/Rain Wa			1.2	204.8	S/N REED		W.O.B		Effective M.WT (<u> </u>	
Recycled Wa			0.0	20.0	Depth In		RPM		Surge & Swab Pre	essure in Equi	v. Mud Densit	у
Chemical Ad			.8	6.1	Drilled meters		TFA (in²)		Surge (ppg):		Swab (ppg):	
Total Added		98	3.0	230.9	ļ		draulics		Total Annular Pres			
Solids Contro					Nozzle Veloc				Total Annular Pres			
Down hole lo	osses				Bit Pressure	Drop (psi)			So	lids Contro	Equipmen	t
Dumped					Hyd. Horsepo	ower (hp)			Total Circulating	hrs		Screens
Other surfac	ce losses	5	.0	5.0	Hyd. HP per				Shaker 1: Hours		24.0	20/120/120/
Corrections		İ			Impact Force				Shaker 2	-	24.0	20/120/120/
_ 5 5000113						\-1/					2 1.0	_0,0, 120/
Total Losses		5	.0	5.0	1				Mud Cleaner - S	WACO	 	+
			 I	J.U	1				WIGG OFFICE - 3	Hrs Run:	UF WT	bbls/hr
uneratione '			oiroulota hala	oloon run 7" aaala	nd Compated	2000			Do conder	in a ivuil.	J. W.	ווועפועע
Operations S	section to	ו מכו ע ineters,	circulate note	clean, run 7" casing a	na Cemented	same.			De-sander	 	1	
•	000000000000000000000000000000000000000								(2-cones)	+		+
•	5551.517								L	.	ļ.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1
•									De-silter	4.0 hrs	9.8 ppg	1
•												
•									(12-cones)			
•									(12-cones)			
Drilled 8 1/2"									(12-cones)	Cost Brea	ıkdown	
Drilled 8 1/2"	nary:	ue transferring	mud from activ	re to pill tank and treating	it with excess of	concentration of	Xanbore & Aus-Dex	then				1.334 9
Drilled 8 1/2" Fluid Summ During Drilling	nary: g, we contir			re to pill tank and treating					Daily Mud Cost		\$	
Drilled 8 1/2" Fluid Summ During Drilling bleeding it bac	nary: g, we contir ck into activ	e system to ma	aintain desire p		tive clays aroun	d 89 meter quic	kly check KCL conta	ain of mud	Daily Mud Cost Prev Mud Cost	Cost Brea	\$	771.9
Fluid Summ During Drilling bleeding it bac which showed	nary: g, we contir ck into activ d signed off	e system to ma drop in KCL co	aintain desire p ncentration du	roperties. Notice very rea	tive clays aroun ive clays so lmn	d 89 meter quic nediately started	kly check KCL conta I mixing more KCL to	ain of mud o maintain	Daily Mud Cost Prev Mud Cost Total Mud Cost	Cost Brea	\$ \$	771.9 2,106.8
Drilled 8 1/2" Fluid Summ During Drilling bleeding it bac which showed KCL desire co	nary: g, we contir ck into activ d signed off oncentration	e system to ma drop in KCL co n. Mixing hoppe	aintain desire p incentration du r is causing tro	roperties. Notice very rea e to drilling through react uble it gets blocked quiet	tive clays aroun ive clays so lmn	d 89 meter quic nediately started	kly check KCL conta I mixing more KCL to	ain of mud o maintain	Daily Mud Cost Prev Mud Cost Total Mud Cost Daily Eng. Cost	Cost Brea	\$ \$ \$	771.9 2,106.8 850.00
Fluid Summ During Drilling During Drilling Dieding it bac which showed KCL desire co of chemicals e	nary: g, we contir ck into activ d signed off oncentration especially F	ve system to ma drop in KCL co a. Mixing hoppe Polymers like X	aintain desire p incentration du r is causing tro	roperties. Notice very rea e to drilling through react uble it gets blocked quiet us-Dex.	tive clays aroun ive clays so Imn frequently whic	d 89 meter quic nediately started h is making very	kly check KCL conta I mixing more KCL to or difficult to mix requ	ain of mud o maintain iired amount	Daily Mud Cost Prev Mud Cost Total Mud Cost Daily Eng. Cost Prev Eng. Cost	Cost Brea	\$ \$ \$ \$	771.93 2,106.8 9 850.00 1,700.00
Fluid Summ During Drilling Deeding it bao which showed KCL desire co of chemicals e Eng.:	nary: g, we contir ck into activ d signed off oncentration especially f Tapan Pa	ve system to ma drop in KCL co a. Mixing hoppe Polymers like Xi tel	aintain desire poncentration du r is causing tro an-Bore and A	roperties. Notice very react e to drilling through react uble it gets blocked quiet us-Dex. Phone: +61-7-37	tive clays aroun ive clays so Imn frequently whice 723-3699	d 89 meter quic nediately started h is making very Warehouse:	kly check KCL conta I mixing more KCL to difficult to mix requ +61-7-3723-3699	ain of mud o maintain iired amount	Daily Mud Cost Prev Mud Cost Total Mud Cost Daily Eng. Cost Prev Eng. Cost Total Eng. Cost	Cost Brea	\$ \$ \$ \$	1,334.9 771.9 2,106.8 850.0 1,700.0 2,550.0
Fluid Summ During Drilling sleeding it bac which showed CCL desire couf chemicals e	nary: g, we contir ck into activ d signed off oncentration especially f Tapan Pa	ve system to ma drop in KCL co a. Mixing hoppe Polymers like Xi tel	aintain desire poncentration du r is causing tro an-Bore and Au	roperties. Notice very react e to drilling through react uble it gets blocked quiet us-Dex. Phone: +61-7-37	tive clays aroun ive clays so Imn frequently which was a second of the clay and the clay are the	d 89 meter quic nediately started h is making very Warehouse: Mobile:	kly check KCL conta I mixing more KCL to difficult to mix requi +61-7-3723-3699 +61-4-03545-323	ain of mud o maintain iired amount	Daily Mud Cost Prev Mud Cost Total Mud Cost Daily Eng. Cost Prev Eng. Cost Total Eng. Cost Overall Cost	Cost Brea	\$ \$ \$ \$ \$	771.9 2,106.8 850.0 1,700.0



				<u> </u>				NO .				
API	STATE	COUNTRY	Australia			Date	09-Feb-17		T.D. (MD/TVD)	Meters	156.0	156.0
WELL				To .		Spud Date	06-Feb-17		Bit @ (MD/TVD)		L	
Operator		InGauge		Contrac		TDC			Activity @ 2400	hrs:	Nipple	up BOP
Report for		Scott Hobda		Report		Phil			Rig No.			
Well Name	and No.	Plumb Road		Field or	Block No.				State/Country			W/AUS
T	T 0.5		ng Details	1	December		g Details	D 11-	Maria Con I I a I a	Mud Volum		400.0
Туре	O.D	I.D.	Weight	Length	Description	O.D - Weight		Depth	Mud in Hole		Active Pits	196.3
	(in.)	(in.)	(lbs/ft)	(m)	01	(in lbs/ft)	(in.)	to (m)	Circ Vol	216.4	Ann Vol	
					Cond.	9.625	8.921	12.0	Displ Vol	40.4	String Vol	
					Inter.	7	6.360	156.0	Reserve	12.4	ECD (ppg) KCL/Polymo	or
					Prod.				Mud Type	Circulatio		31
	 				Liner				Pump Make/Mod		n Data	
											57.05	(0) @ 070/
0				Dit / E line / Oheles	0	Mud P	roperties		Liner x Stroke @			(0) @ 97%
Sample fro				Pit / F-line / Shake	er Suction				Bbl/stk	0.0426937		
	p (In / Out)			<u>°C</u>	45.00				Bbl/min	(D-i)	GPM	
Time Samp				Hrs.	15:00				Circulating Press			
Sample De	eptn			Meters					Bottoms Up Time			
Weight			0.0	ppg					Bottoms Up Stro			
Funnel Vis			°C	sec. / qt.					Total Circulation			
Plastic Visc		49	°C	ср					Total Circulation			
Yield Point				lb / 100ft2						Property S		
Gel Streng		10"/ 10' / 30'		/ 00 :	6/7				Weight		Viscosity	35-45
API Filtrate		.	90	cc / 30 min.	13.0				Filtrate		pН	8.5
HTHP Filtra		N/A	U	cc / 30 min.	1.0	+			KCI	2	YP	12-20
	kness API			1 / 32"		+			TIME	Solids Ar	naiysis	Т
	Retort Solid	is		% by Vol.	0.4	+			TIME	15:00	-	1
Retort Oil	14/-1			% by Vol.		+			% LGS	0.40	-	1
Corrected \				% by Vol.	99.6	_			% Barite	_		_
	tent (In / Ou			% by Vol.	0.8				ppb Bar			ļ
	Blue Capac		ppb	Equivalent Bentonite					% Bent equ.	0.55		
pH		Meter			8.9				ppb Ben eq.	5.00		
Alkalinity M		••		cc N/50 H2SO4 Acid					% DS	-0.15		
	Filtrate (Pf/N	VIt)		cc N/50 H2SO4 Acid					ppb DS	-1.36	<u> </u>	
Chlorides				mg/l						Rheometer	Readings	Т
Total Hardi				mg / I					600 rpm	22		
	K+ precipita	ation test)		% by Weight					300 rpm	18		
K+				mg / I					200 rpm	15		
Ca++				mg / I					100 rpm	12		
CaCl ₂				% by Weight					6 rpm	6		
NaCl				% by Weight	3.34				3 rpm	5		
									Annular Hydrau	lics	(DP/OH)	(DC/OH)
Sulphite				mg / I					Velocity (ft/min)			
S.G Brine	0 (0 1:1			s.g.					Eff. Viscosity (cp			ļ
Average S	G of Solids			s.g.					Critical Velocity (
			alysis (bbls)		Bit Data		IADC Code		Critical F/Rate (g			
Volume Mi		Da	aily	Well Total	Size (in.)		Jets(Nr x 32 nd)		Transport Eff. (%			ļ
Salvage Mu				224.0	NB O/N DEED		Hrs.today/total	/ 0	Cuttings Conc. (ļ
Drill/Rain W				204.8	S/N REED		W.O.B		Effective M.WT (L	
Recycled W		3	5.0	23.0	Depth In		RPM		Surge & Swab Pre			/
Chemical A		_		6.1	Drilled meter		TFA (in²)		Surge (ppg):		Swab (ppg):	
Total Added		3	3.0	233.9	N		draulics		Total Annular Pres			
Solids Cont					Nozzle Veloc				Total Annular Pres			
Down hole	iosses				Bit Pressure					lids Control	Equipment	
Dumped	1			5.0	Hyd. Horsep				Total Circulating		4	Screens
Other surfa				5.0		in ² (HHP/in ²)			Shaker 1: Hours	run:		20/120/120/1
Corrections	<u>, </u>	1			Impact Force	= (IDf)			Shaker 2		1	20/120/120/17
Tatall									Maria Ci	A/A C C	-	
Total Losse		<u> </u>	•	5.0	ı				Mud Cleaner - S'		UE WE	
_	s Summary				_					Hrs Run:	UF WT	bbls/hr
Cemented	7 " casing,	wait on cemer	nt. Current op	erations, nipple up BC)P.				De-sander			ļ
									(2-cones)			<u> </u>
												ļ
									De-silter	1	1	1
									(12-cones)	_		_
Fluid O.			1								<u> </u>	
Fluid Sum		h b :	J		=-		a tamba di didi di		D-9-14	Cost Brea		
			. Notice cemen	t return to surface while	cementing 7 " c	asıng. Circulatin	g tanks via mixing li	nes in order	Daily Mud Cost		\$	-
to avoid settling of solids.									Prev Mud Cost		\$	2,106.89
											2,106.89	
									Daily Eng. Cost		\$	850.00
F	T	4-1		Int	700 0000	lvar	.04 7 0700 000		Prev Eng. Cost		\$	2,550.00
Eng.:	Tapan Pa		LITE		723-3699		+61-7-3723-369		Total Eng. Cost		\$	3,400.00
Contr.:	AUSTKAL	LIAN MUD CO			723-3688	Mobile:	+61-4-03545-32		Overall Cost		\$	5,506.89
				endation expressed orally of								
		or warranty	is made by ours	elves or our agents as to it	s correctness or c	completeness, and	110 flability is assumed	ı ıor any damaç	jes resulting from the u	ise of the same.		



				<u> </u>				NO :				
	STATE	COUNTRY	Australia			Date	10-Feb-17		T.D. (MD/TVD)	Meters	213.0	
WELL						Spud Date	06-Feb-17		Bit @ (MD/TVD)		213.0	
Operator		InGauge		Contract		TDC			Activity @ 2400 l	nrs:	Drilling 6	1/8" section
Report for		Scott Hobda		Report fo		Phil			Rig No.			
Well Name	and No.	Plumb Road		Field or E	Block No.				State/Country			V/AUS
			ng Details	,			g Details			Mud Volum		
Type	O.D	I.D.	Weight	Length	Description	O.D - Weigh		Depth	Mud in Hole		Active Pits	139.6
	(in.)	(in.)	(lbs/ft)	(m)		(in lbs/ft)	(in.)	to (m)	Circ Vol		Ann Vol	15.5
DP	3.5000	2.6500		90.16	Cond.	9.625	8.921	12.0	Displ Vol		String Vol	4.0
			L		Inter.	7	6.360	156.0	Reserve		ECD (ppg)	10.038
HWDP	3.5000	2.2500		27.75	Prod.				Mud Type		KCL/Polyme	er
DC	4.7500	2.2500		82.57	Liner					Circulatio	n Data	
Tools	4.7500	2.0600		12.52					Pump Make/Mod			
		part of Kelly of	rilled.	BHA = 122.84			Properties		Liner x Stroke @			0) @ 99%
Sample from				Pit / F-line / Shaker	Suction	Suction			Bbl/stk	0.0480816		110
Mud Temp				°C					Bbl/min		GPM	222
Time Samp				Hrs.	13:00	6:00			Circulating Press			375
Sample De	:pth			Meters	156.0	198.0			Bottoms Up Time			3
Weight				ppg	8.70	9.10			Bottoms Up Stro	kes		322
Funnel Viso			°C	sec. / qt.	36	37			Total Circulation	Time (min.)		30
Plastic Visc	cosity @	49	°C	ср	5	5			Total Circulation	Strokes		3,307
Yield Point				lb / 100ft2	10	14			Muc	Property S	pecification	s
Gel Strengt	th	10"/ 10' / 30'			5/6	5/			Weight	ALAP	Viscosity	35-45
API Filtrate				cc / 30 min.	13.0	7.0			Filtrate		рН	8.5
HTHP Filtra	ate @	N/A	°C	cc / 30 min.	NA	NA			KCI	2	ΥP	12-20
Cake Thick		HTHP		1 / 32"	1.0	1.0				Solids Ar	nalysis	
	Retort Solid			% by Vol.	0.5	2.0			TIME	13:00	6:00	
Retort Oil				% by Vol.	1	1			% LGS	0.47	1.95	1
Corrected V	Water			% by Vol.	99.5	98.0			% Barite	1		1
Sand Conte	ent (In / Ou	t)		% by Vol.	0.5	0.5			ppb Bar			
Methylene I			daa	Equivalent Bentonite	5.0	7.5			% Bent equ.	0.55	0.82	
pH		Meter			8.8	9.0			ppb Ben eq.	5.00	7.50	
Alkalinity M	lud (Pm)			cc N/50 H2SO4 Acid	0.20	0.80			% DS	-0.08	1.12	
Alkalinity Fi		/f)		cc N/50 H2SO4 Acid	0.1/0.25	0.4/1.5			ppb DS	-0.71	10.24	
Chlorides		,		mg/I	32,000	55,000				Rheometer		
Total Hardn	ness			mg/l	480	400			600 rpm	20	24	
KCI (from K		tion test)		% by Weight	2.50	3.50			300 rpm	15	19	
K+		,		mg/I	13,300	18,700			200 rpm	14	14	
Ca++	-		-	mg/I	NA	NA			100 rpm	11	11	
CaCl ₂	-			% by Weight	NA	NA			6 rpm	5	8	
NaCl	-		-	% by Weight	3.19	6.00			3 rpm	4	4	
				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					Annular Hydrau	lics	(DP/OH)	(DC/OH)
Sulphite				mg/I					Velocity (ft/min)			364
S.G Brine	-		-	s.g.	1.0373	1.0634			Eff. Viscosity (cp)	1		16
Average SC	G of Solids		-	s.g.	2.50	2.50			Critical Velocity (326
		Volume Ana	alvsis (bbls)	g-	Bit Data		IADC Code		Critical F/Rate (g			199
Volume Mix	xed		aily	Well Total	Size (in.)	6.125	Jets(Nr x 32 ^{na})		Transport Eff. (%			79.53
Salvage Mu					NB		Hrs.today/total	/ 0	Cuttings Conc. (\			
Drill/Rain W			-	204.8	S/N REED		W.O.B	, 0	Effective M.WT (
Recycled W				23.0	Depth In		RPM		Surge & Swab Pre		/ Mud Density	/
Chemical A		8	.3	14.4	Drilled meters	s 213.0	TFA (in²)	0.371	Surge (ppg):		Swab (ppg):	8.721
Total Added			.3	242.2			draulics		Total Annular Pres			13.8 psi
Solids Conti			.5	4.5	Nozzle Veloci			192	Total Annular Pres			34.1 psi
Down hole le		·	-	0	Bit Pressure			299		lids Control		
Dumped		28	3.3	28.3	Hyd. Horsepo			39	Total Circulating		, , , ,	Screens
Other surfa	ice losses		0.0	25.0	Hyd. HP per i			1.32	Shaker 1: Hours		24.0	20/120/120/1
Corrections					Impact Force			201	Shaker 2		24.0	20/120/120/1
201100110113						\.~1/		201	C.IGNOI Z		2 7.0	-5/125/125/11
Total Losses	·s	51	2.8	57.8	1				Mud Cleaner - S\	NACO		
Operations			i i	07.0	1			<u> </u>	aa oloanoi - o	Hrs Run:	UF WT	bbls/hr
			e came Made	up 6 1/8" BHA. Rigge	dun and run v	wire line survey	TIH to 130m Dr	illed out	De-sander		<u> </u>	
				vell to 9ppg mud. Drille	•							
iloat, silve ti	iack allu la	it flole to 1561	ii. Displaced v	veii to appg muu. Diille	a siii new noi	e nom 156m t	o To Till. Circulate	u noie clean.	(2 001103)			
									De-silter	24.0 hrs		0.19
									(12-cones)	27.U IIIS		0.19
									(12-cones)	1		
Fluid Sumr	marv:								 	Cost Pros	kdows	1
		e system to in-	reaso KCI ac-	contration to desire level	Miyod And Da	y and Yan Barr	to decrease fluid la	ee and	Cost Bre			2 150 50
Added 2 % KCL into active system to increase KCL concentration to desire le increase low end rheology.					. wiixeu Auu-De	aliu vali-pole	to decrease fluid 10	ss dilu	Daily Mud Cost		\$	2,150.59
norease low end ineclogy.									Prev Mud Cost Total Mud Cost		\$	2,106.89
											\$	4,257.48
									Daily Eng. Cost		\$	850.00
F	Tanan P	4-1		Dhana. 04 = 05	700 0000	Meneli	. 64 7 9700 000		Prev Eng. Cost		\$	3,400.00
Eng.:	Tapan Pa) I TD		723-3699		+61-7-3723-369		Total Eng. Cost \$ 4,250.00			
Contr.:	AUSTRAL	IAN MUD CO			723-3688	Mobile:	+61-4-03545-32		Overall Cost		\$	8,507.48
				endation expressed orally or								
		or warranty	is made by ourse	elves or our agents as to its	correctness or co	ompleteness, and	no liability is assumed	ior any damag	es resulting from the u	se of the same.		



API S	STATE	COUNTRY		<u>9</u>	 .	Date	11-Feb-17	140 .	T.D. (MD/TVD)	Meters	475.0	475.0
WELL	SIAIL	COUNTRI	Australia			Spud Date	06-Feb-17		Bit @ (MD/TVD)		475.0	
Operator		InGauge		Contrac	or	TDC	0010011		Activity @ 2400 l			ng 6 1/8"
Report for		Scott Hobda	ıv	Report f		Phil			Rig No.			.g c ./c
Well Name a	and No.	Plumb Road			Block No.				State/Country		NS	W/AUS
	u		g Details	1 1010 01	1	Casin	g Details			Mud Volum		
Туре	O.D	I.D.	Weight	Length	Description	O.D - Weight		Depth	Mud in Hole		Active Pits	169.
,,	(in.)	(in.)	(lbs/ft)	(m)		(in lbs/ft)	(in.)	to (m)	Circ Vol		Ann Vol	36.
DP	3.5000	2.6500	(/	352.16	Cond.	9.625	8.921	12.0	Displ Vol		String Vol	9.
					Inter.	7	6.360	156.0	Reserve		ECD (ppg)	10.35
HWDP	3.5000	2.2500		27.75	Prod.				Mud Type		KCL/Polym	
DC	4.7500	2.2500		82.57	Liner				71	Circulation	n Data	
Tools	4.7500	2.0600		12.52					Pump Make/Mod	lel		
Length of DP	includes	part of Kelly d	Irilled.	BHA = 122.84		Mud F	roperties		Liner x Stroke @	% eff	5 x 8 (0) @ 99%
Sample from				Pit / F-line / Shake	r				Bbl/stk	0.0480816		115
Mud Temp				°C					Bbl/min	5.53	GPM	232
Time Sample	e Taken			Hrs.	15:00	5:30			Circulating Press	ure (Psi)	•	670
Sample Dep	oth			Meters	320.0	475.0			Bottoms Up Time	e (min.)		7
Weight				ppg	9.70	9.80			Bottoms Up Stro	kes		761
Funnel Visco	ositv @		°C	sec. / qt.	34	37			Total Circulation			39
Plastic Visco		49	°C	ср	6	8			Total Circulation			4,488
Yield Point	, -			lb / 100ft2	11	12				Property S	pecification	
Gel Strength	h	10"/ 10' / 30'		157.00112	3/4	3/4			Weight	ALAP	Viscosity	35-45
API Filtrate				cc / 30 min.	10.0	7.5			Filtrate	<= 9	pH	8.5
HTHP Filtrat	te @	N/A	°C	cc / 30 min.	NA NA	NA	†		KCI	2	YP	12-20
Cake Thickn			-	1 / 32"	1.0	1.0	†		1	Solids Ar		
Corrected Re				% by Vol.	4.9	4.4	†		TIME	15:00	5:30	
Retort Oil	Oonu			% by Vol.	7.5	, -			% LGS	4.72	5.19	1
Corrected W	/ater			% by Vol.	95.1	94.6			% Barite	12	0.10	†
Sand Conter		t)		% by Vol.	0.8	0.8			ppb Bar	1	-	1
Methylene B			nnh	Equivalent Bentonite	7.5	7.5			% Bent equ.	0.82	0.82	
pH	nue Capac	Meter	ррь	Equivalent Dentonite	8.9	8.9			ppb Ben eq.	7.50	7.50	
Alkalinity Mu	ıd (Pm)	IVICTO		cc N/50 H2SO4 Acid	0.20	0.20			% DS	3.89	4.36	
Alkalinity Filt		/f\		cc N/50 H2SO4 Acid	0.15/0.35	0.1/0.2			ppb DS	35.44	39.69	
Chlorides	liale (FI/II	/11)			84,000	89,000				Rheometer		
Total Hardne	000			mg / l mg / l	340	520	 		600 rpm	23	28	1
KCI (from K-		tion test\		mg / i % by Weight	4.00	4.00	+ -		300 rpm	17	28	1
KCI (from K4	+ precipita	uon test)			21,500	21,500	 		200 rpm	17	15	
Ca++				mg / I mg / I	21,500 NA	21,500 NA	 		100 rpm	10	11	1
Ca++ CaCl ₂				mg / i % by Weight	NA NA	NA NA	 			4	5	1
NaCl				% by Weight	9.93	10.65	+ -		6 rpm 3 rpm	3	3	1
Naci				76 by Weight	9.93	10.03			Annular Hydrau		(DP/OH)	(DC/OH)
Sulphite				ma / I					Velocity (ft/min)	lics	225	380
S.G Brine				mg / I	1.0957	1.1012			Eff. Viscosity (cp	١	34	17
Average SG	of Solide			s.g. s.g.	2.50	2.50			Critical Velocity (266	314
Average 3G	01 301105	Volume Ana	alvoio (bblo)	s.y.	Bit Data	2.50	IADC Code		Critical Velocity (274	192
Volume Mix				Well Total		6.125	Jets(Nr x 32 ^{na})		Transport Eff. (%		88.14	81.71
Salvage Mud		Da	ily	well rotal	Size (in.)	0.125		/ 0	Cuttings Conc. (88.14	81.71
			2.0	204.0	NB S/N REED		Hrs.today/total	/ 0				-
Drill/Rain Wa Recvcled Wa		60	0.0	264.8		 	W.O.B		Effective M.WT (Mud Dec "	
,			\ 7	23.0	Depth In	475.0	RPM	0.074	Surge & Swab Pre			
Chemical Ad			5.7	31.1	Drilled meters		TFA (in²)	0.371	Surge (ppg): Total Annular Pres		Swab (ppg):	9.535
Total Added			5.7	318.9	NII N/ I		draulics	001			,	21.5 psi
Solids Contro			.5	9.1	Nozzle Veloc			201	Total Annular Pres			45.2 psi
Down hole lo	sses	5	.0	5.0	Bit Pressure			352		lids Control	Equipment	
				28.3	Hyd. Horsepo			48	Total Circulating			Screens
Dumped		. 16	6.5	41.5	Hyd. HP per			1.62	Shaker 1: Hours	run:	24.0	20/120/120/
Other surfac	ce losses	10		1	Impact Force	(lb _f)		236	Shaker 2		24.0	20/120/120/
Dumped Other surfac Corrections	ce losses	10									1	ļ
Other surfac Corrections												1
Other surfac Corrections Total Losses		26	3.0	83.9					Mud Cleaner - S			
Other surfac Corrections Total Losses Operations	Summary	26	5.0	83.9						WACO Hrs Run:	UF WT	bbls/hr
Other surfac Corrections Total Losses Operations	Summary	26	5.0	83.9					Mud Cleaner - S' De-sander		UF WT	bbls/hr
Other surfac Corrections Total Losses Operations	Summary	26	3.0	83.9							UF WT	bbls/hr
Other surfactorrections Total Losses Operations	Summary	26	3.0	83.9					De-sander (2-cones)	Hrs Run:	UF WT	
Other surfactorrections Total Losses Operations	Summary	26	5.0	83.9					De-sander (2-cones)		UF WT	0.19
Other surfactorrections Total Losses Operations	Summary	26	5.0	83.9					De-sander (2-cones)	Hrs Run:	UF WT	
Other surfac Corrections Fotal Losses Derations 5 Drilling 6 1/8	Summary " section t	26	3.0	83.9					De-sander (2-cones)	Hrs Run:	UF WT	
Other surfac Corrections Total Losses Operations 5 Drilling 6 1/8	Summary " section t	26	5.0	83.9					De-sander (2-cones) De-silter (12-cones)	Hrs Run:		
Other surfac Corrections Total Losses Operations Drilling 6 1/8'	Summary " section t	26 7: 0 475 meters		83.9	emixes at regurla	ar interval and b	lending them back i	nto system	De-sander (2-cones)	Hrs Run:		0.19
Other surfac Corrections Total Losses Operations Orilling 6 1/8'	Summary " section t	26 7: 0 475 meters			emixes at regurla	ar interval and b	lending them back i	nto system	De-sander (2-cones) De-silter (12-cones)	Hrs Run:	kdown	0.19
Other surface Corrections Total Losses Operations 9 Drilling 6 1/8' Fluid Summ Continue treati	Summary " section t	26 7: 0 475 meters			emixes at regurla	ar interval and b	lending them back i	nto system	De-sander (2-cones) De-silter (12-cones) Daily Mud Cost	Hrs Run:	kdown \$	0.19 3,324.79 4,257.44
Other surface Corrections Fotal Losses Departions 5 Drilling 6 1/8' Fluid Summ Continue treati	Summary " section t	26 7: 0 475 meters			emixes at regurla	ar interval and b	ending them back i	nto system	De-sander (2-cones) De-silter (12-cones) Daily Mud Cost Prev Mud Cost	Hrs Run:	kdown \$ \$	3,324.7 ¹ 4,257.4 ¹ 7,582.2
Other surface Corrections Fotal Losses Departions 5 Drilling 6 1/8' Fluid Summ Continue treati	Summary " section t	26 7: 0 475 meters			emixes at regurla	ar interval and b	lending them back i	nto system	De-sander (2-cones) De-silter (12-cones) Daily Mud Cost Prev Mud Cost Total Mud Cost Daily Eng. Cost	Hrs Run:	kdown \$ \$	3,324.79 4,257.44 7,582.21 850.00
Other surface Corrections Total Losses Operations Drilling 6 1/8 Fluid Summ Continue treatislowly.	Summary " section t	26 o 475 meters		and KCL via building pr	emixes at regurla		lending them back i	·	De-sander (2-cones) De-silter (12-cones) Daily Mud Cost Prev Mud Cost Total Mud Cost Daily Eng. Cost Prev Eng. Cost	24.0 hrs Cost Brea	kdown \$ \$ \$ \$ \$ \$ \$ \$ \$	3,324.7: 4,257.4: 7,582.2: 850.00 4,250.00
Other surface Corrections Total Losses Operations Prilling 6 1/8' Fluid Summ Continue treatillowly.	Summary " section to hary: ting active s	26 o 475 meters	hbore, Aus-Dex	and KCL via building pr	·		_	9	De-sander (2-cones) De-silter (12-cones) Daily Mud Cost Prev Mud Cost Total Mud Cost Daily Eng. Cost	24.0 hrs Cost Brea	kdown \$ \$ \$	



API	STATE	COUNTRY	Auctralia				Date	12-Feb-17		T.D. (MD/TVD)	Meters	642.0	642.0
WELL	STATE	COUNTRY	Australia				Spud Date	06-Feb-17		Bit @ (MD/TVD)		335.0	
Operator		InGauge			Contracto	or	TDC	00-1 05-17		Activity @ 2400 h			 ООН
Report for		Scott Hobda	ay		Report fo		Phil			Rig No.			
Well Name	and No.	Plumb Road			Field or E	Block No.				State/Country		NSV	V/AUS
		Drill Strin	ng Details					Details			Mud Volum		
Туре	O.D	I.D.	Weight	Leng		Description	O.D - Weight		Depth	Mud in Hole		Active Pits	173.4
	(in.)	(in.)	(lbs/ft)	(m)			(in lbs/ft)	(in.)	to (m)	Circ Vol		Ann Vol	62.0
DP	3.5000	2.6500		212.1	16	Cond.	9.625	8.921	12.0	Displ Vol		String Vol	6.7
LINANDO	0.5000	0.0500				Inter.	7	6.360	156.0	Reserve	46.5	ECD (ppg) KCL/Polyme	
HWDP	3.5000	2.2500		27.7 82.5		Prod.				Mud Type	Circulatio		er .
DC Table	4.7500 4.7500	2.2500 2.0600	1	12.5		Liner				Pump Make/Mod		n Data	
Tools		part of Kelly of	l rillad	BHA = 12			Mud D	roperties		Liner x Stroke @		5 v 9 (0) @ 99%
Sample fron		part of Kelly C	illieu.	Pit / F-line		Suction	IVIUG P	roperties		Bbl/stk	0.0480816		1) @ 9976
Mud Temp				1 11 / 1 -11110	°C	Suction				Bbl/min	0.0400010	GPM	
Time Sampl	le Taken				Hrs.	16:00				Circulating Press	ure (Psi)	O. W.	
Sample Dep					Meters	580.0				Bottoms Up Time			
Weight	P 11.1				ppg	9.90				Bottoms Up Strol			
Funnel Visc	cosity @		°C	5	sec. / qt.	36				Total Circulation			
Plastic Visco			°C		ср	9 11				Total Circulation			
Yield Point										Mud	Property S	pecification	s
Gel Strengtl		10"/ 10' / 30'				5/8				Weight	ALAP	Viscosity	35-45
API Filtrate					30 min.	9.5				Filtrate	<= 9	рН	8.5
HTHP Filtra		N/A	°C	cc /	30 min.	NA				KCI		ΥP	12-20
Cake Thickr					1 / 32"	1.0				<u> </u>	Solids An	alysis	1
Corrected R	Retort Solid	S			by Vol.	6.7				TIME	16:00		
Retort Oil	Vata-				by Vol.	20.0	1			% LGS	6.54		
Corrected W Sand Conte		+\			by Vol.	93.2 0.9				% Barite ppb Bar			
						7.5				рро ваг % Bent equ.	0.82		
Methylene E pH	Siue Capac	Meter	рры	Equivalent B	entonite	8.8				ppb Ben eq.	7.50		
Alkalinity Mu	ud (Pm)	Meter		cc N/50 H2S	O4 Acid	0.15				% DS	5.71		
Alkalinity Fil		/f)		cc N/50 H2S		0.1/0.15				ppb DS	51.97		
Chlorides	111010 (1 1/11	,,		0014/001120	mg/l	82,000					Rheometer	Readings	I
Total Hardn	ess				mg/I	540				600 rpm	29	.cuugc	
KCI (from K-		tion test)		% by	Weight	3.50				300 rpm	20		
K+	' '	,			mg/I	18,700				200 rpm	18		
Ca++					mg/I	NA				100 rpm	12		
CaCl ₂					Weight	NA				6 rpm	5		
NaCl				% by	Weight	10.00				3 rpm	4		
										Annular Hydrau	lics	(DP/OH)	(DC/OH)
Sulphite					mg / I					Velocity (ft/min)			
S.G Brine					s.g.	1.0931				Eff. Viscosity (cp)			
Average SG	of Solids				s.g.	2.50		14 00 0 1		Critical Velocity (f	t/min)		
\/ - I		Volume Ana		14/-U.T	-1-1	Bit Data	0.405	IADC Code		Critical F/Rate (g			
Volume Mix Salvage Muc		Da	aily	Well T	otai	Size (in.) NB	6.125	Jets(Nr x 32 nd) Hrs.today/total	/ 0	Transport Eff. (% Cuttings Conc. (\			
Drill/Rain Wa		10	0.0	304.	0	S/N REED		W.O.B	/ 0	Effective M.WT (p	/01 %)		
Recycled Wa			5.1	48.1		Depth In		RPM		Surge & Swab Pre		Mud Doneity	<u> </u>
Chemical Ad			1.3	33.4		Drilled meters	642.0	TFA (in²)	0.371	Surge (ppg):		Swab (ppg):	9.556
Total Added			7.4	386.		Dilliod Illotoic		draulics	0.07 1	Total Annular Press			19.6 psi
Solids Contro			5.8	12.8		Nozzle Veloci				Total Annular Press			العظم عدد
Down hole lo		Ĭ		5.0		Bit Pressure I					lids Control		
Dumped		10	0.0	38.3		Hyd. Horsepo				Total Circulating			Screens
Other surface	ce losses			41.5		Hyd. HP per i	A \ / A			Shaker 1: Hours		24.0	20/120/120/1
Corrections						Impact Force				Shaker 2			20/120/120/1
Total Losses			3.8	97.6	3					Mud Cleaner - S\			
Operations											Hrs Run:	UF WT	bbls/hr
Drilled 6 1/8'	" to depth (of 642 meters	then started	POOH.						De-sander			
										(2-cones)	ļ		
										De eilter	00.0 !		0.10
										De-silter	20.0 hrs		0.19
										(12-cones)			-
Fluid Summ	narv:									Cost Breakdown		I	
		vstem with KC	L. Aus-Dex and	Xanbore via n	remixes to	maintain desire	e mud specificat	ions.		Daily Mud Cost	JUJI DI CA	\$	920.32
Jonanus IIsal	401146 3	, 5.0	_,	aəorə via p		ataiii uesiit	aa opoomoat			Prev Mud Cost		\$	7,582.27
										Total Mud Cost		\$	8,502.59
										Daily Eng. Cost		\$	850.00
										Prev Eng. Cost		\$	5,100.00
Eng.:	Tapan Pa	tel		Phone:	+61-7-37	23-3699	Warehouse:	+61-7-3723-369	9	Total Eng. Cost		\$	5,950.00
	AUSTRAL	IAN MUD CO	LTD	Fax:	+61-7-37	23-3688	Mobile:	+61-4-03545-32	3	Overall Cost		\$	14,452.59
										so elects, however, no			<u> </u>
		or warranty	is made by ours	elves or our age	nts as to its	correctness or co	ompleteness, and	no liability is assumed	for any damag	es resulting from the u	se of the same.		



Well Completion Report



Appendix 10 – Cement Reports

InGauge Ltd. Level 1, 27 Parkview Street Milton, QLD, 4064

Plumb Road 1 Cementing Operations End Of Well Report

Prepared for Kelvin Wuttke

Monday, 6 March 2017

Submitted by Brendon Fischer

Halliburton Australia Pty Ltd



1.0 Summary of Operations

The Plumb Road 1 well was cemented with a 7in surface casing and a 4-1/2in production casing.

The 7in surface casing was cemented on 8th February 2017, with 20bbl fresh water spacer, followed by 12.6bbls of 12.5ppg lead slurry and 7.1bbls of 15.6ppg tail slurry. Please see job logs (**Section 4**) for more details.

The 4-1/2in production casing was cemented on 14th February 2017, with 10bbls of Gelled Spacer at 9.8ppg pumped, followed by 41.1bbls of 12.5ppg lead slurry and 9.5bbls of 15.8ppg tail slurry. Please see job logs (**Section 4**) for more details.

1.1 Lessons Learnt

Jobs were performed as per planned with no HSE incidents

TDC Drilling

POST JOB REPORT CEMENTING/PUMPING

Well: Plum Road #1

Rig: TDC Drilling

Surface & Production casing - 7521 & 7525

Prepared for Hobday, Scott

14-February-2017

Prepared by Marshall, Scott

HALLIBURTON

The Future is Working Together.

Notice: Although the information contained in this report is based on sound engineering practices, the copyright owner(s) does (do) not accept any responsibility whatsoever, in negligence or otherwise, for any loss or damage arising from the use of the information given in this report.

JOB SUMMARY

PERSONNEL

SAP No.	PERSONNEL	HOURS	SAP No.	PERSONNEL	HOURS	SAP No.	PERSONNEL	HOURS
445514	Luck, Robert	24	0	Scatt, Mick	96	515931	Marshall, Scott	84
	***************************************							***************************************

EQUIPMENT

SAP No.	PUMPING / MIXING	HOURS	SAP No.	BULK SUPPLY	HOURS
11923852	Single Pump #11923852 (767-QVA)	192	11520333	BULKER#11520333 (892-QRV)	192
SAP No.	VEHICLES / TRAILER	HOURS	SAP No.	OTHER	HOURS
12054757	Dally #12054757 (SY9-4DC)	192			***
12240451	Kenworth T659#12240451 (SB8-7GR)	192			

FLOAT AND CASING EQUIPMENT

CATEGORY	SAP NUMBER	DESCRIPTION	SUPPLIER	QTY
CASING ATTACHMENTS		Centralizers Surface Casing	HALLIBURTON	7
CASING ATTACHMENTS		Centralizers Production casing	HALLIBURTON	27
PLUGS		7" Top plug (Surface casing)		1
PLUGS		4.5" Top and Bottom plug		1
FLOAT EQUIPMENT		7" float collar and 7" guide shoe (Surface Casing)		1
FLOAT EQUIPMENT		4.5" float collar and 4.5" guide shoe (Production Casing)		1

WELL PROFILE

Was the casing tally provided? YES

WELL COMPONENT	SIZE	WEIGHT	GRADE	THREAD	TOP (MD)	END (MD)	END (TVD)	EXCESS	LENGTH
	(in)	(lb/ft)			(m)	(m)	(m)	%	(m)
Pervious Casing	9 5/8	36	k-55	btc	0.0	10.0			10.0
OPEN HOLE	8.5		~~~		10.0	100.0		75%	90.0
Open Hole	8.5		***************************************		100.0	156.0		50%	56.0
Pervious Casing	7"	23			0.0	156.0			156.0
Open Hole	6 1/8					***************************************		50%	640.0



FI	UID SUMMARY	,							
-	uid Type: SPACER		Fluid Name	e: Water 20 bl	bls / sı	urface ca	sing		
S	Lab Report			Chemicals	Conce	ntration	TO.	TAL	Notes
PROPERTIES	Volume Pumped	bbl							
岸	Estimated Top	m							
	Density	lb/gal	8.33						
풉	Volume Mixed	bbl	20						
	Source V	Vater truc	k						
F ₂ 0	Volume	bbl	20						
	Chlorides	ppm	0						
Flu	uid Type: CEMENT	•	Fluid Name	e: Lead Ceme	nt / sı	ırface cas	ing		
	Lab Report	236	64984-2	Chemicals	Conce	ntration	тот	AL	Notes
ပ္သ	Volume Pumped	bbl	12.6	LAP-1	0.6	%BWOC	20	lb	
IË	Estimated Top	m	0	CFR-3	0.3	%BWOC	10	lb	
買	Density	lb/gal	12.5	CaCl2	1	%BWOC	33	lb	
PROPERTIES	Yield	cuft/sk	1.85	D-Air 3000L	0.05	gal/sk	2	gal	added during mixing
급	Water Requirement	gal/sk	9.92	Econolite Powder	1.5	%BWOC	50	lb	
	Mix Fluid Required	gal/sk	9.97						
	Source	vater truc	k						
H ₂ O	Volume	bbl	9						
	Chlorides	ppm	0						
CMT	35:65 Pozmix GP	lb/sk	87						
ਠ	Total Used	sk	38						
Flu	uid Type: CEMENT	•	Fluid Name	e: Tail Cemen	t /sur	face casir	ng		
	Lab Report	236	6181-1	Chemicals	Conce	ntration	тот	AL	Notes
ပ္သ	Volume Pumped	bbl	7.1	CaCl2	1	%BWOC	32	lb	added to mix water on unit
PROPERTIE	Estimated Top	m	108	D-Air 3000L	0.05	gal/sk	2	gal	added during mixing
ᇦ	Density	lb/gal	15.6						
ΙÖ	Yield	cuft/sk	1.19						
풉	Water Requirement	gal/sk	5.25						
	Mix Fluid Required	gal/sk	5.32						
	Source v	vater truc	k						
H ₂ O	Volume	bbl	7.1						
	Chlorides	ppm	0						
CMT	Class GP	lb/sk	94						
ਠ	Total Used	sk	34						



Flu	Fluid Type: SPACER Fluid Name: Gelled Spacer 9.8 ppg / Production Casing										
ES	Lab Report			na		Chemicals	Concer	tration	тот	AL	Notes
Z I	Volume Pum	ped	bbl	10		NaCl	113.94	lb/bbl	1,139	lb	supplied by rig
	Estimated To	ор	m	0		WG-19	2.5	lb/bbl	25	lb	mixed on unit
S	Density		lb/gal	9.8		Acetic Acid 60%	0.05	gal/bbl	1	gal	mixed on unit
	Volume Mixe	d	bbl	10							
	Source	V	vater truc	k							
H ₂ 0	Volume		bbl	8.4							
	Chlorides		ppm	0							

FI	Fluid Type: CEMENT Fluid Name: Lead Cement / Production Casing										
	Lab Report		236	64984-2		Chemicals	Conce	ntration	тоти	AL	Notes
ES	Volume Pump	ed	bbl	41.1		Econolite Powder	1.5	%BWOC	163	lb	
ΙĘ	Estimated Top)	m	0		LAP-1	0.6	%BWOC	65	lb	
띪	Density		lb/gal	12.5		CFR-3	0.3	%BWOC	33	lb	
ROP	Yield		cuft/sk	1.85		CaCl2	1	%BWOC	109	lb	
ᇤ	Water Require	ement	gal/sk	4.97		D-Air 3000L	0.05	gal/sk	7	gal	added during mixing
	Mix Fluid Req	uired	gal/sk	5.04							
	Source	W	vater truc	:k							
H ₂ O	Volume		bbl	29.5							
	Chlorides		ppm	0							
CMT	35:65 Pozmix	GP	lb/sk	87							
5	Total Used		sk	125							

0	Total Used	sk	125										
Flo	Fluid Type: CEMENT Fluid Name: Tail Cement / Production Casing												
	Lab Report	236	66677-2		Chemicals	Conce	ntration	тот	AL	Notes			
ကြ	Volume Pumped	bbl	9.5		HALAD-413	0.5	%BWOC	22	lb	MF mixed on unit			
RTIE	Estimated Top	m	540		CFR-3	0.25	%BWOC	11	lb	MF mixed on unit			
牖	Density	lb/gal	15.8		D-Air 3000L	0.01	gal/sk	1	gal	added during mixing			
lo	Yield	cuft/sk	1.15										
R	Water Requirement	gal/sk	4.97										
	Mix Fluid Required	gal/sk	5.04										
	Source v	vater truc	k										
P2	Volume	bbl	5.45										
	Chlorides	ppm	0										
CMT	Class GP	lb/sk	94										
ర్	Total Used	sk	46										

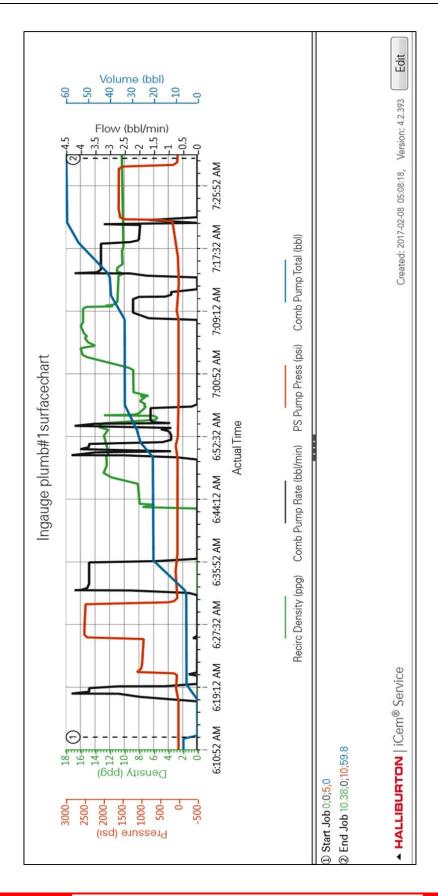
ΗΔΙΙ	_IRI II	BTC	NC	C	ementi	ing	CUSTOMER	Start D	ate	End Date		
HALLIBURTON							TDC Drilling	07-Feb		14-Feb-17		
WELL Name & Number RIG Name & Number				LOC	ATION/ FI	IELD	BDA	HES R	EP	CUSTOMER REP		
Plum Road #1 TDC Drilling				Nam			Brisbane		II, Scott	Hobday, Scott		
VELL TYPE		В ТҮРЕ			PURPOS			Progra	m Rev.	SALES ORDER N		
6 Water	Cas	sing Job		Surf	ace & Proc		sing - 7521 & 7525	V1		903831282		
						JOB L	.ogs					
I FAD CEM	ENT PUMPE	-m- [12.6 / 45	bbl		SPACEE	TO SURFACE:	20. / 10.	ьы	Add Row		
			7.1 / 10.6						bbl	Add Hote		
	ENT PUMPEI) .					TO SURFACE:	3 / 14.4	-	Delete Row		
SPACER(S) PUMPED:	Į	20. / 10.	bbl		LOST R	ETURNS:	0	bbl	Delete now		
ATE	TIME	VOLUM	IE PR	ESSU	RE (psi)	RATE	JOB DESCRIPTION	DN				
AY-MTH-YR	HRS:MIN	BBLS	HIG	Н	LOW	ВРМ	REMARKS/DETA	IL S				
										e to Namabri NSW		
							08/02/20	17 Scott Ma	rshall crew c	hange Rob Luck 12:00		
06-Feb-17										cement and chemicals		
							pre	epaire to mob	Tize / weed o	certify equipment		
87 F-L 47		•							=			
07-Feb-17	6:00 7:00							Pre Mobilisation Safety Huddle Depart Roma				
	16:30							A	e Location 5			
	16:40								Talk with OC			
	10.40									4 1 1 1 1 1 1 1 1 1 1		
	16:55							5	pot Equipme	श्रा		
	17:20								& Runup E			
	17:25								Test Kickour			
	18:00								Standby for j			
08-Feb-17	5:00								Called to rig			
	6:00	•					anive					
	6:30							pre	job safty me	eting		
	6:50							rig up	floor / load t	op plug		
		•			***************************************							
	7:20	5.0	70	l		3.7		Pri	ime surface l	ines		
	7:26		94	5					ron Low Pre			
	7:28		2,50	ю (Surface I	ron High Pre	ssure Test		
	7:33		0						bleed off			
	7:34	15.0	80			4			bbls freshwa			
	7:40							•		ith 32 lb CaCt2		
	7:45	12.6	50)		4 2				12.6 bbls12.5 ppg		
	8:04	7.1				2	mix and pump			bbls using inside Mix F		
	8:15	19.0				3.3		displac	e freshwater	·····		
	8:24	19.0				2			bump plug			
	8:24		1,50						ssure Test C			
	8:30	0.3	0						off / Record	·····		
							ceme			s into displacement		
	8:30								Down/was			
	9:10							Move 6	equipment of	LIOCATION		
	9:30								longel I a a e t			
	9:30								Depart Locati			
							KOD	······································		crew change with		
	16:20								Scott Marsha ett Marshall			
	16:30							300	ott Marshall <i>i</i>			

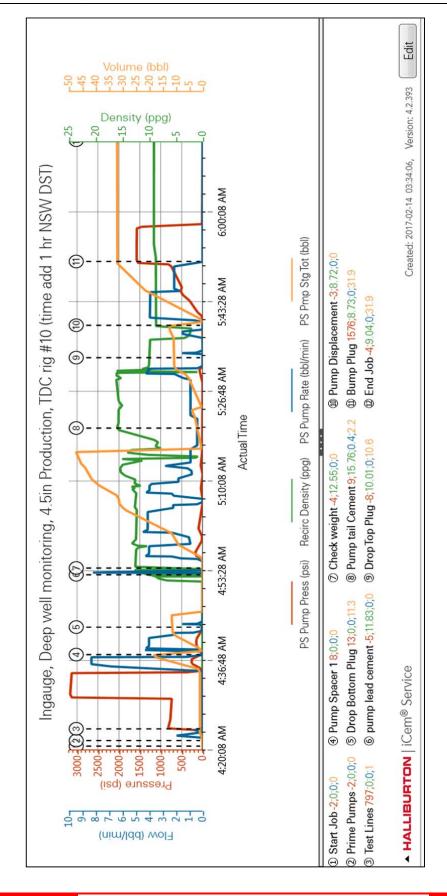
17:00

sign into civeo camp



09-Feb-17	7:00					arrive location
0010017	7:05					brief OCR Scott Hobday
	7:15					site inductions
	8:00					check equipment - run up
	10:00					depart location
	11:00					stanby at Civeo Rig camp
10-Feb-17	9:00					arrive location - perform equipment maintenance due to
						rust and gravel in pump afer previous wash up
	10:30					depart location
						standby at civeo rig camp
11-Feb-17						standby at civeo rig camp / red alert day extreame heat
						in forestry area
12-Feb-17	9:00					rig crew stood down due to extreame heat in forestry
						potential fire risks (day and night shift)
13-Feb-17						arrive location / review program
						spot equipment
						rig up
						run up - clean out unit flushing out rust and sediment
						from pump unit
						water test
						mix up NaCl for spacer 9.8 ppg
						depart location / standby for rig to run casing
14-Feb-17	3:00					call to rig
	4:00					brief OCR
	4:15					mix up chemical for tail MF with 1 bbls dead volume
						Halad - 413 ; 26 lb used, CFR 3 ; 13 lb used
	4:35					pre job safety meeting with rig crew
	4:50					mix up 10 bbls gelled spacer 9.8 ppg
	5:05					rig up floor
	5:25	1.0	30		2	prime pumps freshwater
	5:27		800	738		pressure test surface lines 500 psi
	5:33		3,167	3,131		pressure test surface lines 3000 psi
	5:38					mix up gelled spacer
	5:41	10.0	154		4	pump 10 bbls 9.8 ppg gelled spacer
	5:45	10.0	101		'	release bottom plug
	5:50	45.0	400		4 1	open cement head load closing plug
	5:57	45.0	180	50		mix and pump 41.1 bbls 12.5 ppg lead slurry
	6:18	10.6	100	30	4 1	mix and pump 9.5 bbls tail cement 15.8 ppg
						using MF made up in displacement tank
						during mixing of lead and tail - bulk delivery to unit was not stead
	6:37					flush surface lines
	6:42	31.9	528	215	4	displace with freshwater 31.6 bbl max 32.2 bbl (1/2 shoe volume)
	6:54	31.9	820		2	bump plug
	6:54	ļ	1,575	1,573		pressure test casing 1500 psi 5 min as instructed by OCR
	7:00	0.2		0		bleed off / check floats / record returns
	7:05					rig down
	7:15					wash up
	8:00					moved equipment off location
	8:45					depart location
						breakfast
						
	10:00					Daberwork
	10:00 12:00					paperwork check over equipment





InGauge Ltd. Level 1, 27 Parkview Street Milton, QLD, 4064

Plumb Road 2 Cementing Operations End Of Well Report

Prepared for Kelvin Wuttke

Monday, 6 March 2017

Submitted by Brendon Fischer

Halliburton Australia Pty Ltd



1.0 Summary of Operations

The Plumb Road 2 well was cemented with a 7in surface casing and a 4-1/2in production casing.

The 7in surface casing was cemented on 16th February 2017, with 20bbl fresh water spacer, followed by 12.6bbls of 12.5ppg lead slurry and 7.1bbls of 15.6ppg tail slurry. Please see job logs (**Section 4**) for more details.

The 4-1/2in production casing was cemented on 19th February 2017, with 10bbls of Gelled Spacer at 9.8ppg pumped, followed by 21.3bbls of 12.5ppg lead slurry and 8.9bbls of 15.8ppg tail slurry. Please see job logs (**Section 4**) for more details.

1.1 Lessons Learnt

Jobs were performed as per planned with no HSE incidents



TDC Drilling

POST JOB REPORT CEMENTING/PUMPING

Well: Plum Road well # 2
Rig: TDC Drilling

Surface & Production casing - 7521 & 7525

Prepared for Hobday, Scott 18-February-2017

Prepared by Marshall, Scott

HALLIBURTON

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HALLIB	IDTON	Cementing	CUSTOMER	Start Date	End Date
HALLIB	DA I CIV		TDC Drilling	15-Feb-17	18-Feb-17
WELL Name & Number	RIG Name & Number	LOCATION/ FIELD	BDA	HES REP	CUSTOMER REP
Plum Road well #2	TDC Drilling	Narrabri	Brisbane	Marshall, Scott	Hobday, Scott
WELL TYPE	JOB TYPE	JOB PURPOSE CODE	•	Program Rev.	SALES ORDER No.
06 Water	Casing Job	Surface & Production ca	asing - 7521 & 7525	V1	903831284

JOB SUMMARY

PERSONNEL

SAP No.	PERSONNEL	HOURS	SAP No.	PERSONNEL	HOURS	SAP No.	PERSONNEL	HOURS
515931	Marshall, Scott		0	Scott, Mick				

EQUIPMENT

SAP No.	PUMPING / MIXING	HOURS	SAP No.	BULK SUPPLY	HOURS
11923852	Single Pump #11923852 (767-QVA)		11520333	BULKER#11520333 (892-QRV)	92
					A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-
SAP No.	VEHICLES / TRAILER	HOURS	SAP No.	OTHER	HOURS
12054757	Dolly #12054757 (SY9-4DC)				
12240451	Kenworth T659#12240451(SB8-7GR)				

FLOAT AND CASING EQUIPMENT

CATEGORY	SAP NUMBER	DESCRIPTION	SUPPLIER	QTY
CASING ATTACHMENTS		Central izers Surface Casing	HALLIBURTON	6
CASING ATTACHMENTS		Centralizers Production casing	HALLIBURTON	17
PLUGS		7" Top plug (Surface casing)		1
PLUGS		4.5"Top and Bottom plug		1
FLOAT EQUIPMENT		7" float collar and 7" guide shoe (Surface Casing)		1
FLOAT EQUIPMENT		4.5" float collar and 4.5" guide shoe (Production Casing)		1

WELL PROFILE

Was the	casing tal	ly provided?	YES
---------	------------	--------------	-----

WELL COMPONENT	SIZE	WEIGHT	GRADE	THREAD	TOP (MD)	END (MD)	END (TVD)	EXCESS	LENGTH
	(in)	(lb/ft)			(m)	(m)	(m)	%	(m)
Pervious Casing	9 5/8	36	k-55	btc	0.0	10.0			10.0
OPEN HOLE	8.5				10.0	100.0		75%	90.0
Open Hole	8.5				100.0	156.0	***************************************	50%	56.0
Pervious Casing	7"	23			0.0	154.4		0%	154.4
Open Hole	6 1/8				154.4	388.0		50%	233.6



=	LUID SUMMAR	Y								
lı	uid Type: SPACE	R	Fluid Nan	ne	: Water 20 bl	bls / s	urface cas	sing		
	Lab Report				Chemicals	Conce	ntration	то	TAL	Notes
1	Volume Pumped	bbl							\top	
ľ	Estimated Top	m								
ľ	Density	lb/gal	8.33							
ľ	Volume Mixed	bbl	20							
ľ	Source	Water truc	:k							
	Volume	bbl	20							
ľ	Chlorides	ppm	0						1	
Ξ Ir	uid Type: CEMEN	JT	Fluid Nar	me	: Lead Ceme	nt / sı	irface cas	ina		
Ì	Lab Report		64984-2		Chemicals		ntration	тот	ΓAL	Notes
)	Volume Pumped	bbl	12.6		LAP-1	0.6	%BWOC	20	lb	
	Estimated Top	m	0		CFR-3	0.3	%BWOC	10	lb	
	Density	lb/gal	12.5		CaCl2	1	%BWOC	33	lb	
,	Yield	cuft/sk	1.85		D-Air 3000L	0.05	gal/sk	2	gal	added during mixing
	Water Requirement	gal/sk	9.92		Econolite Powder	1.5	%BWOC	50	lb	-
	Mix Fluid Required	gal/sk	9.97			+			+	
Ì	Source	water truc	:k			+			+	+
2	Volume	bbl	9			+	†		+	†
I	Chlorides	ppm	0			1			1	
Ī	35:65 Pozmix GP	lb/sk	87			1			1	1
5	Total Used	sk	38			†			†	
= Ir	uid Type: CEMEN	1T	Fluid Nan	ne	: Tail Cement	t / sur	face casir	ng		
	Lab Report		66181-1		Chemicals		ntration	тот	ΓAL	Notes
9	Volume Pumped	bbl	7.1		CaCl2	1	%BWOC	32	lb	added to mix water on unit
	Estimated Top	m	108		D-Air 3000L	0.05	gal/sk	2	gal	added during mixing
	Density	lb/gal	15.6			1			\top	
į	Yield	cuft/sk	1.19			†			1	1
É	Water Requirement	gal/sk	5.25			†			\top	1
1	Mix Fluid Required	gal/sk	5.32			†			\top	
Ī	Source	water truc	;k						1	
2	Volume	bbl	7.1						1	
	Chlorides	ppm	0						1	
Ξ	Class GP	lb/sk	94						1	
2/		-			4	_	_			-

34

Total Used



Flu	Fluid Type: SPACER Fluid Name: Gelled Spacer 9.8 ppg / Production Casing												
S	Lab Report			na		Chemicals	Concen	tration	тоти	\L	Notes		
RTIE	Volume Pum	ped	bbl	10		NaCl	113.94	lb/bbl	1,139	lb	supplied by rig		
	Estimated To	ор	m	0		WG-19	2.5	lb/bbl	25	lb	mixed on unit		
ROF	Density		lb/gal	9.8		Acetic Acid 60%	0.05	gal/bbl	1	gal	mixed on unit		
	Volume Mixe	d	bbl	10									
	Source	v	vater truc	k									
F20	Volume		bbl	8.4									
	Chlorides		ppm	0									

Lab Repor	rt	236	4984-2	Chemicals	Conce	ntration	TO	TAL	Notes
Volume P		bbl	21.3	Econolite Powder	1.5	%BWOC	85	lb	
Estimated Density Yield Water Red	d Тор	m	0	LAP-1	0.6	%BWOC	34	lb	
Density	II.	b/gal	12.5	CFR-3	0.3	%BWOC	17	lb	
Yield	CI	uft/sk	1.85	CaCl2	1	%BWOC	57	lb	
Water Red	quirement g	gal/sk	4.97	D-Air 3000L	0.05	gal/sk	4	gal	added during mixing
Mix Fluid	Required g	gal/sk	5.04						
Source	wate	er trucl	k						
Volume		bbl	29.5						
Chlorides	ţ	ppm	0						
35:65 Poz	miv CD		07						
E	IIIIX GF	lb/sk	87						
Total Used	d	sk	65						
Total Used	: CEMENT	sk	•	ne: Tail Cemer		oduction C		TAL	Notes
Total Used Fluid Type Lab Report Volume P	e: CEMENT	sk	65 Fluid Nar					TAL lb	Notes MF mixed on unit
Total Used Fluid Type Lab Report Volume P	c: CEMENT	sk 236	65 Fluid Nar 6677-2	Chemicals	Conce	ntration	TO		
Total Used Fluid Type Lab Report Volume P	c: CEMENT rt umped	sk 236 bbl	65 Fluid Nar 6677-2 8.9	Chemicals HALAD-413	Conce 0.5	ntration %BWOC	TO 20	lb	MF mixed on unit
Total Used Fluid Type Lab Report Volume P	c: CEMENT rt umped d Top	sk 236 bbl m	65 Fluid Nar 6677-2 8.9 288	Chemicals HALAD-413 CFR-3	0.5 0.25	%BWOC %BWOC	20 10	lb lb	MF mixed on unit MF mixed on unit
Total Used Fluid Type Lab Report Volume P	e: CEMENT rt umped d Top	236 bbl m b/gal	65 Fluid Nar 6677-2 8.9 288 15.8	Chemicals HALAD-413 CFR-3	0.5 0.25	%BWOC %BWOC	20 10	lb lb	MF mixed on unit MF mixed on unit
Total Used Total Used Lab Report Volume P Estimated Density Yield	c: CEMENT It umped It Top It cut quirement g	236 bbl m b/gal uft/sk	65 Fluid Nar 6677-2 8.9 288 15.8 1.15	Chemicals HALAD-413 CFR-3	0.5 0.25	%BWOC %BWOC	20 10	lb lb	MF mixed on unit MF mixed on unit
Total Used Total Used Lab Report Volume P Estimated Density Yield Water Red Mix Fluid Source	c: CEMENT rt umped d Top It quirement g Required g	236 bbl m b/gal uft/sk gal/sk	65 Fluid Nar 6677-2 8.9 288 15.8 1.15 4.97 5.04	Chemicals HALAD-413 CFR-3	0.5 0.25	%BWOC %BWOC	20 10	lb lb	MF mixed on unit MF mixed on unit
Total Used Total Used Lab Report Volume P Estimated Density Yield Water Red Mix Fluid Source	c: CEMENT It umped d Top It cut quirement g Required g wat	236 bbl m b/gal uft/sk gal/sk	65 Fluid Nar 6677-2 8.9 288 15.8 1.15 4.97 5.04	Chemicals HALAD-413 CFR-3	0.5 0.25	%BWOC %BWOC	20 10	lb lb	MF mixed on unit MF mixed on unit
Total Used Fluid Type Lab Report Volume P Estimated Density Yield Water Red Mix Fluid Source	e: CEMENT It umped ITop It cut quirement g Required g wate	236 bbl m b/gal uft/sk gal/sk gal/sk	65 Fluid Nar 6677-2 8.9 288 15.8 1.15 4.97 5.04	Chemicals HALAD-413 CFR-3	0.5 0.25	%BWOC %BWOC	20 10	lb lb	MF mixed on unit MF mixed on unit
Total Used Fluid Type Lab Repoil Volume P Estimated Density Yield Water Red Mix Fluid Source Volume	e: CEMENT It umped ITop It cu quirement g Required g wate	sk 236 bbl m b/gal uft/sk gal/sk gal/sk ter truck	65 Fluid Nar 6677-2 8.9 288 15.8 1.15 4.97 5.04 k 5.2	Chemicals HALAD-413 CFR-3	0.5 0.25	%BWOC %BWOC	20 10	lb lb	MF mixed on unit MF mixed on unit

HALLIB	IDTON	Cementing	CUSTOMER	Start Date	End Date
HALLIB	DA I DIV	00	TDC Drilling	15-Feb-17	18-Feb-17
WELL Name & Number	RIG Name & Number	LOCATION/ FIELD	BDA	HES REP	CUSTOMER REP
Plum Road well # 2	TDC Drilling	Narrabri	Brisbane	Marshall, Scott	Hobday, Scott
WELL TYPE	JOB TYPE	JOB PURPOSE CODE		Program Rev.	SALES ORDER No.
06 Water	Casing Job	Surface & Production ca	asing - 7521 & 7525	V1	903831284

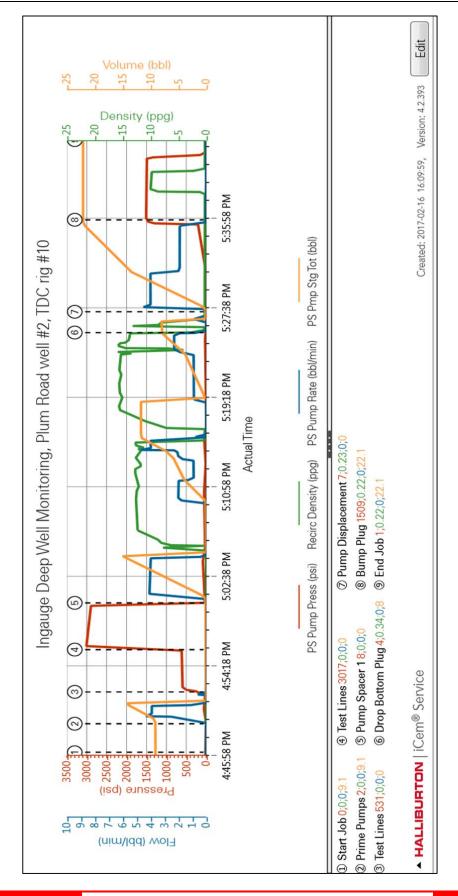
JOB LOGS

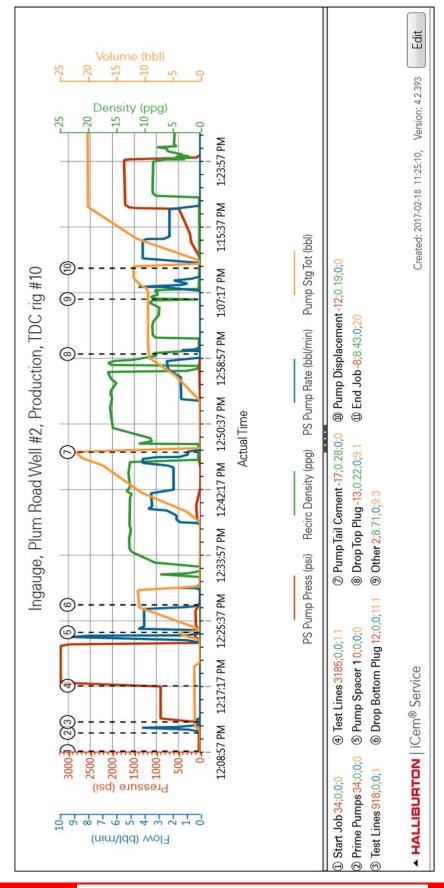
LEAD CEMENT PUMPED:	12.6 / 21.3	bbl	SPACER TO SURFACE:	20. / 10.	bbl	Add Row
TAIL CEMENT PUMPED:	7.1 / 8.9	bbl	CEMENT TO SURFACE:	4.6 / 4.7	bbl	
SPACER(S) PUMPED:	20. / 10.	bbl	LOST RETURNS:	O	bbl	Delete Row

, - 0=- 25.		. 7 TO. D.D.	'	LOST RE	
TIME	VOLUME	PRESSU	JRE (psi)	RATE	JOB DESCRIPTION
HRS:MIN	BBLS	HIGH	LOW	ВРМ	REMARKS/DETAILS
0:00					TDC rig is moving rig over to next well location on lease after
					finnishing Plum Road well #1
12:00					call to rig
13:00					brief with OCR Scott - Surface casing changed to 150m
					provisions made for program change - HB engineers
					additional cement will be required for production on Well #3
13:20					run up equipment / perform checks
14:00					spot equipment
14:30					water test / rig up
15:30					depart location
3:30					call to rig
4:15					turned around due to casing run got stuck
9:00					call to rig to move equipment
9:30					sent back / not required
					WO rig to pull casing and run wiper trip
16:00					call to rig
16:45					arrive
16:45					Brief OCR Scott
16:50			•		run up equipment
17:00					make up mix water for tail slurry 39 lb CaCl2 used
•		······································	***************************************		with 1 bbl dead volume
17:15					spot bulker
17:25		······································	***************************************		pre job safety meeting with rig crew
17:35			•••••		load top plug in CMT head / rig up floor
17:48	5.0	59	***************************************	4	pump 5 bbls freshwater spacer priming surface line
17:51		615			pressure test surface 500 psi lines
17:55		3,000	2,900		pressure test surface 2500 psi lines
18:00	15.0	70	-	4	pump 15 bbls freshwater spacer
18:05	12.6	50		4 2	pump 12.6 bbls 12.5 ppg lead cement
18:19	7.1	28		2	pump 7.1 bbls 15.6 ppg tail cement using MF
18:25					drop top plug
	19.4	180	40		displace freshwater
					bump plug
					pressure test casing 1500 psi 5 min
	0.4	0			bleed off / record returns / check floats
		_			rig down / wash up
					paperwork
					move equipment off location
					depart location
					standby
	TIME HRS:MIN 0:00 12:00 13:20 14:00 14:30 15:30 3:30 4:15 9:00 9:30 16:45 16:45 16:45 16:50 17:00 17:15 17:25 17:35 17:48 17:51 17:55 18:00 18:05 18:19	TIME HRS:MIN BBLS 0:00 12:00 13:00 13:20 14:00 14:30 15:30 3:30 4:15 9:00 9:30 16:00 16:45 16:45 16:45 16:50 17:00 17:15 17:25 17:35 17:48 5.0 17:51 17:55 18:00 15:0 18:05 12.6 18:19 7.1 18:25 18:26 19:4 18:34 18:34 18:40 0.4 18:43 19:30 19:35 20:00	TIME HRS:MIN BBLS HIGH 0:00 12:00 13:00 13:20 14:00 14:30 15:30 3:30 4:15 9:00 9:30 16:00 16:45 16:45 16:45 16:45 16:50 17:00 17:15 17:25 17:35 17:48 5.0 59 17:51 615 17:55 3,000 18:00 18:00 15:34 18:05 12:6 50 18:19 7.1 28 18:25 18:26 19.4 180 18:34 180 18:34 180 18:34 180 18:34 180 18:34 19:30 19:35 20:00	TIME HRS:MIN BBLS HIGH LOW 0:00 12:00 13:00 13:20 14:00 14:30 15:30 3:30 4:15 9:00 9:30 16:00 16:45 16:45 16:45 16:50 17:00 17:15 17:25 17:35 17:48 5.0 59 17:51 615 17:55 3,000 2,900 18:05 18:05 18:05 18:19 7.1 28 18:25 18:26 19.4 180 18:34 180 18:34 180 18:34 19:30 19:35 20:00	TIME HRS:MIN BBLS HIGH LOW BPM 0:00 12:00 13:00 13:00 14:30 14:30 15:30 3:30 4:15 9:00 9:30 16:00 16:45 16:45 16:45 16:45 16:50 17:00 17:15 17:25 17:35 17:48 5.0 59 4 17:51 615 17:55 3,000 2,900 18:00 18:05 18:00 18:05 18:26 19.4 18:34 18:34 18:34 18:34 18:34 18:34 18:34 18:30 19:35 20:00 19:35 20:00



17-Feb-17						
	12:30					call to rig
	13:30					raining - spot equipment - run up
	14:00					rig up
	14:30					water test
	14:40					review program / casing tally
	15:00					weigh out chemicals for tail cement allowing 1 bbl dead volume
						Halad 413 - 24lb, CFR3 -12lb
	15:30					depart location - rig drilling
	16:10					standby
19-Feb-17	10:22					call to rig
	11:00					arrive
	11:05					brief with OCR Scott - calculations / review program
	11:10					run up equipment / mix up MF for tail cement
						mix up gelled spacer - weighed @ 9.5 ppg Oked by OCR
	11:45					pre job safety meeting with rig crew
	11:55					rig up floor / bottom plug loaded in cementing head
	12:11	1.0	56		1	prime surface lines with freshwater
	12:12		904	884		pressure test surface lines 500 psi - pressure rise
	12:17		3,178	3,160		pressure test surface lines 3000 psi - pressure rise
	12:22		0			bleed off
	12:23	4.0			9	mix acid into gelled spacer running on itself, on pump unit
	12:24	10.0	115	105	4	pump 10 bbls 9.5 ppg gelled spacer
	12:28	0.1			1	drop bottom plug
	12:30					reset plug plunger / load top plug into cementing head
	12:35	21.3	100		3.5	mix and pump 21.3 bbls 12.5 ppg lead cement
	12:47	8.9	30		2.5	mix and pump 8.9 bbls 15.8 ppg tail cement running of MF
	12:59					drop top plug
	13:03					flush lines into cellar
	13:11	19.5	490		4 2	displace top plug with freshwater
	13:18		490			bump plug
	13:18	***************************************	1,727			pressure test casing 1500 psi 5min as requested by OCR
	13:23	0.2	0			bleed off / record returns / check floats hold
	13:25					rig down / wash up
	14:00					move equipment off location
	14:30					paperwork
	14:50					depart location
	16:00					make provisions for next job due to cement contingancy
						para production and the desired and to define a desired and the desired and th





InGauge Ltd. Level 1, 27 Parkview Street Milton, QLD, 4064

Plumb Road 3 Cementing Operations End Of Well Report

Prepared for Kelvin Wuttke

Monday, 6 March 2017

Submitted by Brendon Fischer

Halliburton Australia Pty Ltd



1.0 Summary of Operations

The Plumb Road 3 well was cemented with a 7in surface casing and a 4-1/2in production casing.

The 7in surface casing was cemented on 19th February 2017, with 20bbl fresh water spacer, followed by 12.6bbls of 12.5ppg lead slurry and 7.1bbls of 15.6ppg tail slurry. Please see job logs (**Section 4**) for more details.

The 4-1/2in production casing was cemented on 21st February 2017, with 10bbls of Gelled Spacer at 9.8ppg pumped, followed by 16.9bbls of 12.5ppg lead slurry and 8.9bbls of 15.8ppg tail slurry. Please see job logs (**Section 4**) for more details.

1.1 Lessons Learnt

Jobs were performed as per planned with no HSE incidents



TDC Drilling

POST JOB REPORT CEMENTING/PUMPING

Well: Plum Road well # 3
Rig: TDC Drilling

Surface & Production casing - 7521 & 7525

Prepared for Hobday, Scott

22-February-2017

Prepared by Marshall, Scott

HALLIBURTON

The Future is Working Together.

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HALLIB	IDTON	Cementing	CUSTOMER	Start Date	End Date
HALLIB	DA I DIV		TDC Drilling	19-Feb-17	22-Feb-17
WELL Name & Number	RIG Name & Number	LOCATION/ FIELD	BDA	HES REP	CUSTOMER REP
Plum Road well #3	TDC Drilling	Narrabri	Brisbane	Marshall, Scott	Hobday, Scott
WELL TYPE	JOB TYPE	JOB PURPOSE CODE		Program Rev.	SALES ORDER No.
06 Water	Casing Job	Surface & Production ca	sing - 7521 & 7525	V0	903829300

JOB SUMMARY

PERSONNEL

SAP No.	PERSONNEL	HOURS	SAP No.	PERSONNEL	HOURS	SAP No.	PERSONNEL	HOURS
515931	Marshall, Scott	48	0	Scott, Mick	48			***************************************

EQUIPMENT

SAP No.	PUMPING / MIXING	HOURS	SAP No.	BULK SUPPLY	HOURS
11923852	Single Pump #11923852 (767-QVA)	96	11520333	BULKER#11620333 (892-QRV)	48
			12277395	Bulker Convair #12277395 (SY4-6EA)	48
SAP No.	VEHICLES / TRAILER	HOURS	SAP No.	OTHER	HOURS
12054757	Dolly #12054757 (SY9-4DC)	96			
12240451	Kenworth T 659 #12240451 (SB8-7GR)	96			

FLOAT AND CASING EQUIPMENT

CATEGORY	SAP NUMBER	DESCRIPTION	SUPPLIER	QTY
CASING ATTACHMENTS		Centralizers Surface Casing	HALLIBURTON	6
CASING ATTACHMENTS		Centralizers Production casing	HALLIBURTON	14
PLUGS		7" Top plug (Surface casing)		1
PLUGS		4.5" Top and Bottom plug		1
FLOAT EQUIPMENT		7" float collar and 7" guide shoe (Surface Casing)		1
FLOAT EQUIPMENT		4.5" float collar and 4.5" guide shoe (Production Casing)		1

WELL PROFILE

Was the	casing	tally	provided?	YES
---------	--------	-------	-----------	-----

WELL COMPONENT	SIZE	WEIGHT	GRADE	THREAD	TOP (MD)	END (MD)	END (TVD)	EXCESS	LENGTH
	(in)	(lb/ft)			(m)	(m)	(m)	%	(m)
Pervious Casing	9 5/8	36	k-55	btc	0.0	10.0			10.0
OPEN HOLE	8.5	***************************************			10.0	100.0		75%	90.0
Open Hole	8.5				100.0	156.0		50%	56.0
Pervious Casing	7"	23			0.0	154.4		0%	154.4
Open Hole	6 1/8				154.4	336.0		50%	181.6



FI	UID SUMMARY	,										
	uid Type: SPACER		Fluid Name	e: Water 20 bl	bls / sı	urface ca	sing					
S	Lab Report			Chemicals	Conce	ntration	TO:	TAL	Notes			
PROPERTIES	Volume Pumped	bbl										
岸	Estimated Top	m										
Ö	Density	lb/gal	8.33									
풉	Volume Mixed	bbl	20									
	Source V	Vater truc	k									
F ₂ 0	Volume	bbl	20									
	Chlorides	ppm	0									
Fluid Type: CEMENT Fluid Name: Lead Cement / surface casing												
	Lab Report	236	64984-2	Chemicals	Conce	ntration	тот	AL	Notes			
ပ္သ	Volume Pumped	bbl	12.6	LAP-1	0.6	%BWOC	20	lb				
ΙË	Estimated Top	m	0	CFR-3	0.3	%BWOC	10	lb				
買	Density	lb/gal	12.5	CaCl2	1	%BWOC	33	lb				
PROPERTIES	Yield	cuft/sk	1.85	D-Air 3000L	0.05	gal/sk	2	gal	added during mixing			
급	Water Requirement	gal/sk	9.92	Econolite Powder	1.5	%BWOC	50	lb				
	Mix Fluid Required	gal/sk	9.97									
	Source	vater truc	k									
H ₂ O	Volume	bbl	9									
	Chlorides	ppm	0									
CMT	35:65 Pozmix GP	lb/sk	87									
ਠ	Total Used	sk	38									
Flu	uid Type: CEMENT	•	Fluid Name	e: Tail Cemen	t /sur	face casir	ng					
	Lab Report	236	6181-1	Chemicals	Conce	ntration	тот	AL	Notes			
ပ္သ	Volume Pumped	bbl	7.1	CaCl2	1	%BWOC	32	lb	added to mix water on unit			
PROPERTIE	Estimated Top	m	108	D-Air 3000L	0.05	gal/sk	2	gal	added during mixing			
ᇦ	Density	lb/gal	15.6									
ΙÖ	Yield	cuft/sk	1.19									
풉	Water Requirement	gal/sk	5.25									
	Mix Fluid Required	gal/sk	5.32									
	Source v	vater truc	k									
H ₂ O	Volume	bbl	7.1									
	Chlorides	ppm	0									
CMT	Class GP	lb/sk	94									
ਠ	Total Used	sk	34									



Flu	uid Type:	SPACER		Fluid Nar	me:	Gelled Spa	cer 9.8	ppg / Pro	oduction (Casing	3
ES	Lab Report		na			Chemicals	Concer	tration	тоти	\L	Notes
=	Volume Pum	ped	bbl	10		NaCl	113.94	lb/bbl	1,139	lb	supplied by rig
ŽER	Estimated To	ор	m	0		WG-19	2.5	lb/bbl	25	lb	mixed on unit
Ö	Density		lb/gal	9.8		Acetic Acid 60%	0.05	gal/bbl	1	gal	mixed on unit
F	Volume Mixe	d	bbl	10							
	Source	V	vater truc	k							
2 F	Volume		bbl	8.4							
	Chlorides		ppm	0							

Lab Report	236	64984-2	Chemicals	Conce	ntration	TO	TAL	Notes
Volume Pumped	bbl	16.9	Econolite Powder	1.5	%BWOC	67	lb	
Estimated Top	m	0	LAP-1	0.6	%BWOC	27	lb	
Density	lb/gal	12.5	CFR-3	0.3	%BWOC	13	lb	
Estimated Top Density Yield	cuft/sk	1.85	CaCl2	1	%BWOC	44	lb	
Water Requirement	gal/sk	9.92	D-Air 3000L	0.05	gal/sk	3	gal	added during mixing
Mix Fluid Required	gal/sk	9.97						
Source	water truc	k						
Volume	bbl	12.1						
Chlorides	ppm	0						
35:65 Pozmix GP	lb/sk	87						
Total Used	sk	51 Fluid Nai	ne: Tail Cemen	t / Pro	oduction C	asing		
Total Good	IT	-	me: Tail Cemen		oduction C		TAL	Notes
luid Type: CEMEN Lab Report Volume Pumped	IT	Fluid Na					TAL Ib	Notes MF mixed on unit
luid Type: CEMEN Lab Report Volume Pumped	IT 236	Fluid Nai	Chemicals	Conce	ntration	TO		
luid Type: CEMEN Lab Report Volume Pumped	LT 236	Fluid Nai 66677-2 8.9	Chemicals HALAD-413	Conce 0.5	ntration %BWOC	TO 20	lb	MF mixed on unit
luid Type: CEMEN Lab Report Volume Pumped	JT 236	Fluid Nai 66677-2 8.9 288	Chemicals HALAD-413 CFR-3	0.5 0.25	%BWOC	20 10	lb lb	MF mixed on unit MF mixed on unit
Lab Report Volume Pumped Estimated Top Density	bbl m lb/gal	Fluid Nat 66677-2 8.9 288 15.8	Chemicals HALAD-413 CFR-3	0.5 0.25	%BWOC	20 10	lb lb	MF mixed on unit MF mixed on unit
Lab Report Volume Pumped Estimated Top Density Yield	bbl m lb/gal cuft/sk	Fluid Nat 66677-2 8.9 288 15.8 1.15	Chemicals HALAD-413 CFR-3	0.5 0.25	%BWOC	20 10	lb lb	MF mixed on unit MF mixed on unit
Lab Report Volume Pumped Estimated Top Density Yield Water Requirement Mix Fluid Required Source	bbl m lb/gal cuft/sk gal/sk	Fluid Nat 66677-2 8.9 288 15.8 1.15 4.97 5.04	Chemicals HALAD-413 CFR-3	0.5 0.25	%BWOC	20 10	lb lb	MF mixed on unit MF mixed on unit
Lab Report Volume Pumped Estimated Top Density Yield Water Requirement Mix Fluid Required	bbl m lb/gal cuft/sk gal/sk gal/sk	Fluid Nat 66677-2 8.9 288 15.8 1.15 4.97 5.04	Chemicals HALAD-413 CFR-3	0.5 0.25	%BWOC	20 10	lb lb	MF mixed on unit MF mixed on unit
Lab Report Volume Pumped Estimated Top Density Yield Water Requirement Mix Fluid Required Source	bbl m lb/gal cuft/sk gal/sk gal/sk water truc	Fluid Nat 66677-2 8.9 288 15.8 1.15 4.97 5.04	Chemicals HALAD-413 CFR-3	0.5 0.25	%BWOC	20 10	lb lb	MF mixed on unit MF mixed on unit
Lab Report Volume Pumped Estimated Top Density Yield Water Requirement Mix Fluid Required Source Volume	bbl m lb/gal cuft/sk gal/sk gal/sk water truc	Fluid Nat 66677-2 8.9 288 15.8 1.15 4.97 5.04 k	Chemicals HALAD-413 CFR-3	0.5 0.25	%BWOC	20 10	lb lb	MF mixed on unit MF mixed on unit

			CUSTOMER	Start Date	End Date
HALLIBURTON		Cementing	TDC Drilling	19-Feb-17	22-Feb-17
			ů		
WELL Name & Number	RIG Name & Number	LOCATION/ FIELD	BDA	HES REP	CUSTOMER REP
Plum Road well # 3	TDC Drilling	Narrabri	Brisbane	Marshall, Scott	Hobday, Scott
WELL TYPE	JOB TYPE	JOB PURPOSE CODE	•	Program Rev.	SALES ORDER No.
06 Water	Casing Job	Surface & Production ca	asing - 7521 & 7525	V0	903829300

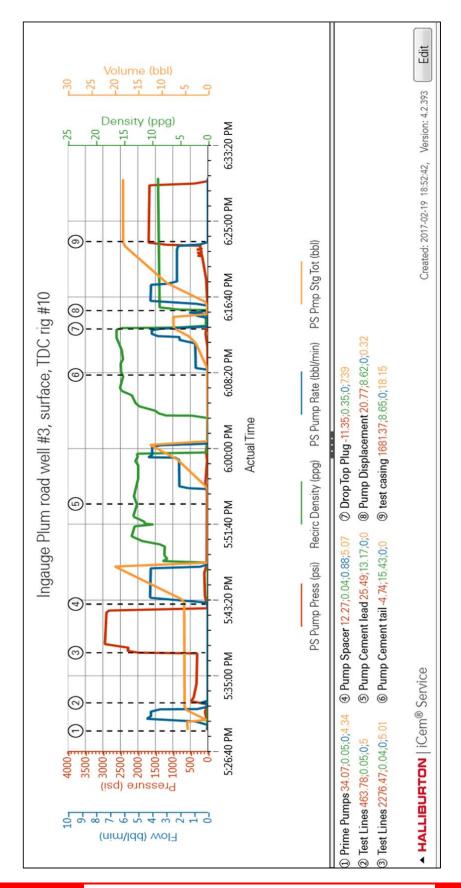
JOB LOGS

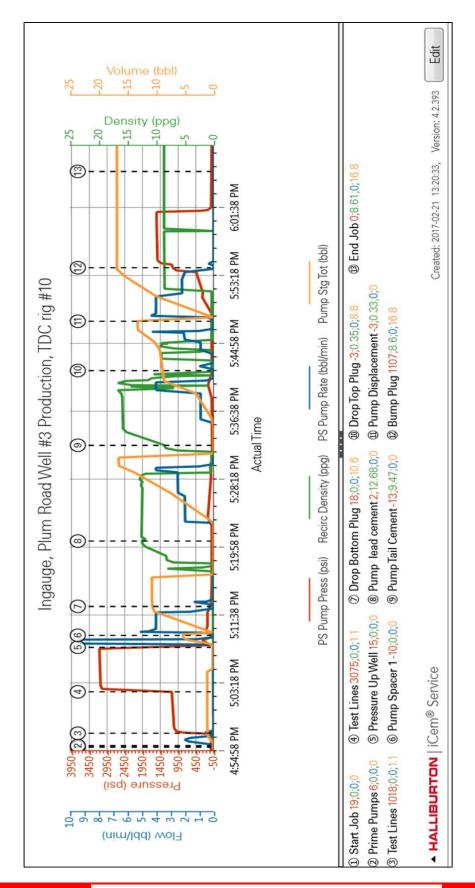
LEAD CEMENT PUMPED:	12.6 / 16.9 bbi	SPACER TO SURFACE:	20. / 10. bbl	Add Row
TAIL CEMENT PUMPED:	7.1 / 8.9 bbl	CEMENT TO SURFACE:	5.2 / 7.6 bbl	
SPACER(S) PUMPED:	20. / 10. bbl	LOST RETURNS:	0 bbl	Delete Row

SPACER(S) PUMPED:	20). / 10. <i>bbl</i>	'	LOST RET	URNS: 0 bbl Delete Now
DATE	TIME	VOLUME	PRESSU	JRE (psi)	RATE	JOB DESCRIPTION
AY-MTH-YR	HRS:MIN	BBLS	HIGH	LOW	ВРМ	REMARK S/DETAIL S
19-Feb-17	9:00					arrive rig
	9:05					brief with OCR Scott
	9:30			•		spot unit
	9:50					nig up
	10:10					water test - weigh out chemical with 1 bbls dead volume
						CaCL2 - 39lb used
	10:30					depart location
	10.50					uopait totakoi
	15:50					call to rig
	-					
	14:35					arrive
	14:45					run up equipment / mix up chemical for tail MF
	17:20					pre job safety meeting with rig crew
	17:30					rig up floor
	17:45	5.0	80		4	pump 5 bbls freshwater spacer
	17:47		444	306		pressure test surface lines 500 psi
	17:52		2,949	2,905		pressure test surface lines 2500 psi
	17:57		0			bleed off 0
	17:58	15.0	100		4	pump 15 bbls freshwater spacer
	18:05	12.6	80	30	42	pump 12.6 bbls 12.5 ppg lead cement
	18:16	7.1	60	20	4 1	pump 7.1 bbls 15.6 ppg tail cement
	18:28	***************************************		•		drop top plug
	18:30	19.2	300	0	42	displace top plug with freshwater
	18:38		300		2	bump plug
	18:38		1,679			pressure test casing 1500 psi 5 min OCR request
	18:44	0.3	0			bleed off / record returns / check floats hold
	18:46			••••••		rig down / wash up
	19:20					weight out chemicals for production job
	13.20					
						and load bulker for return trip to Roma
	ļ					addition bulker sent with lead cement for Production
						organised to leave in the morning
						Additional cement required due to depth changes to
						well design
	20:00					depart location
20-Feb-17	7:00					bulker depart Roma
	15:30	•				Bulker arrive at rig 560 km
	<u> </u>					drop off with 51 sk lead cement
						Bulker return to Roma with chemicals to re - stock of
	<u> </u>					un-open sks - Calcium Chloride 55lb, CFR 3 - 50lb, Halad 413- 50
						bulker returning had been blown empty having lead cement
						of 41sks been used in overblown due to taking cement
						for each previous well for same bulk supply
						Chemicals - used in this volume
						LAP - 22lb, CFR3 - 11lb, econolite - 53lb, CaCL2 - 36



	16:00					run up bulker / function test - clean out bulker hose
	16:30					depart location - WO rig to drill - WO HP mud pump from Roma
	17:45					standby at camp
21-Feb-17	7:00					paperwork
	8:30					Standby for rig to call
	14:00					call to rig
	14:35					breif with OCR Scott
	14:50					spot bulker
	15:00					run up equipment
	15:30					Wo rig to run casing
	16:15					mix chemicals for tail and gelled spacer
	16:35					prejob safety meeting with rig crew
						project dately informing maning order
	16:45					rig up floor
						3 1
	16:55	1.0	30		2	prime surface lines
	16:57		1,127	1,071		pressure test surface lines 500 psi
	17:02		3,165	3,130		pressure test surface lines 3000 psi
	17:08	5.3	300	0,100	9	mix 10 bbls 9.8 ppg Gelled spacer
	17:09	10.0	133		4	pump 9.8 ppg Gelled spacer
	17:13	10.0	100		-	drop bottom plug
	17:17	16.9	65		4 2	mix and pump 16.9bbls 12.5 ppg lead cement
	17.17	10.9	- 05		4 2	mix and pump 10.900is 12.5 ppg lead cement
	17:32	8.9	65	-13	4 1	mix and pump 8.9 bbls 15.8 ppg tail cement
	17.02	0.0				running off MF
	17:44					drop top plug
	17:42	5.0			4 2	flush surface lines
	17:47	16.6	440		4 2	displace top plug with freshwater - cmt returns after 9 bbls disp
		10.0				
	17:54		440	4.740	2	bump plug
	17:54		1,757	1,740		pressure test casing 1500 psi
	18:00	0.2	0			bleed off / record returns / check floats hold
	18:03					rig down / wash up
	18:45					paperwork
	19:00					roadtrain up equipment
	17:30					depart location to Camp
22-Feb-17	6:00					depart location to Roma
	16:30					arrive roma
	17:00					Neat cement to be blown out of act pod. Ticket to
						be amended by taking off returns
						57 sks returned neat cement returned: initial ticket that
						got signed had chemicals subtracted from it with the full sks
						but still requires the 57 sks of neat subtracted
						Ticket amended in Roma







Well Completion Report



Appendix 11 – Cement Bond Logs

SKINETIC	ETIC	RADIAL C	EMENT B	RADIAL CEMENT BOND LOG FIELD COPY					
File No: Company	oany INGAUGE	,,,,							mages
Well	PLUMB ROAD 1	OAD 1							sts, dai
Field									ss, cos
Area	NARRABRI	RI Country	ntry AUSTRALIA	RALIA					any los
Location	5		Qt.	Other Services:	th		2/17		t, and do not gu esponsible for employees. The
Permanent Datum MSL		Elevation 0.0m		Elev K.B.	Dep		13/2		le or
Log Meas. From KB	M. ,	M. Above Datum	Ele	Elev G.L.			ATEC		e liab
Drilling Meas. From KB			XII.	KB - GL 3.8m)G D/		oart, b
Date	22 - FEB - 2017		Perforations				ELC		our _l
Run No	2		Density Shots	From To	_		SITI		on
DBTD Denth - Driller	70				del		MPC		jenc
Bottom Of Logged Interval	608.9m				Mo		СС		negli
Top Of Logged Interval	SURFACE						ETIC		llful mad
Metres Logged	608.9m						KINI		or w tion
Fluid Type	BRINE						TO		oss oreta
Fluid Level	SURFACE						ED.		of gro
Max. Temp.	31.8DEG C						ELA		ase any
Wireline Unit	WU - 17	Carrier Size	in Carri	Carrier Type	ype		RRI		the o
		Charge Size		Charge Type	T	+	СО		pt in ing f
Recorded By	D. PARRY	Phasing	in Entry	Entry Hole in	ו)		PTH		exce _l esult
Witnessed By	S. HOBDAY				e (in		DEF		ot, e ne re
Casing Record	(in)	Weight (lb/ft)	Тор	Bottom	Size				all no nyon
	4.5"	11.6PPF					LOG		we sha
						de	TION		s, and ustaine
							RELA	narks	tation
						Bridge Re-Ent	CORF	Rem	interpre

DSS HSR-20, 2 3/4" RBT CBL TOOL STRING

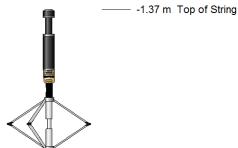
Max. Length: 6.06 m

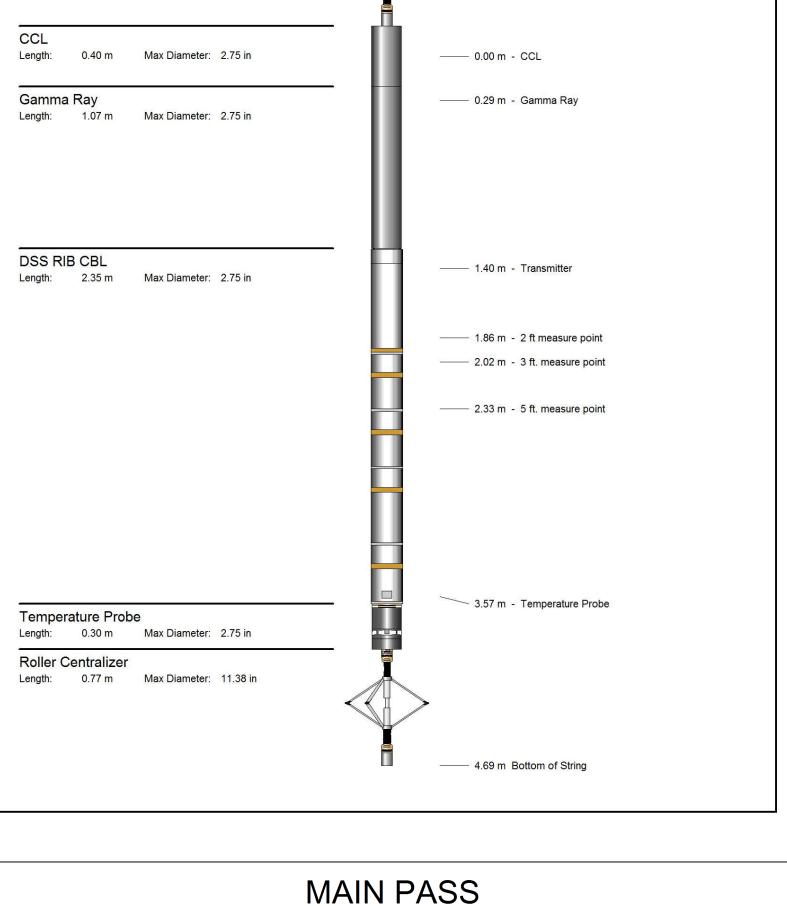
Cable Head

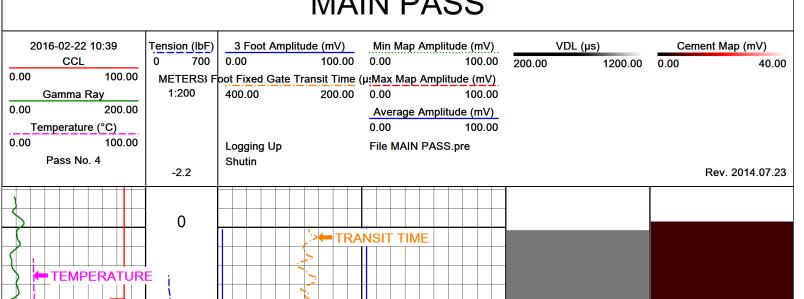
Length: 0.40 m Max Diameter: 1.44 in

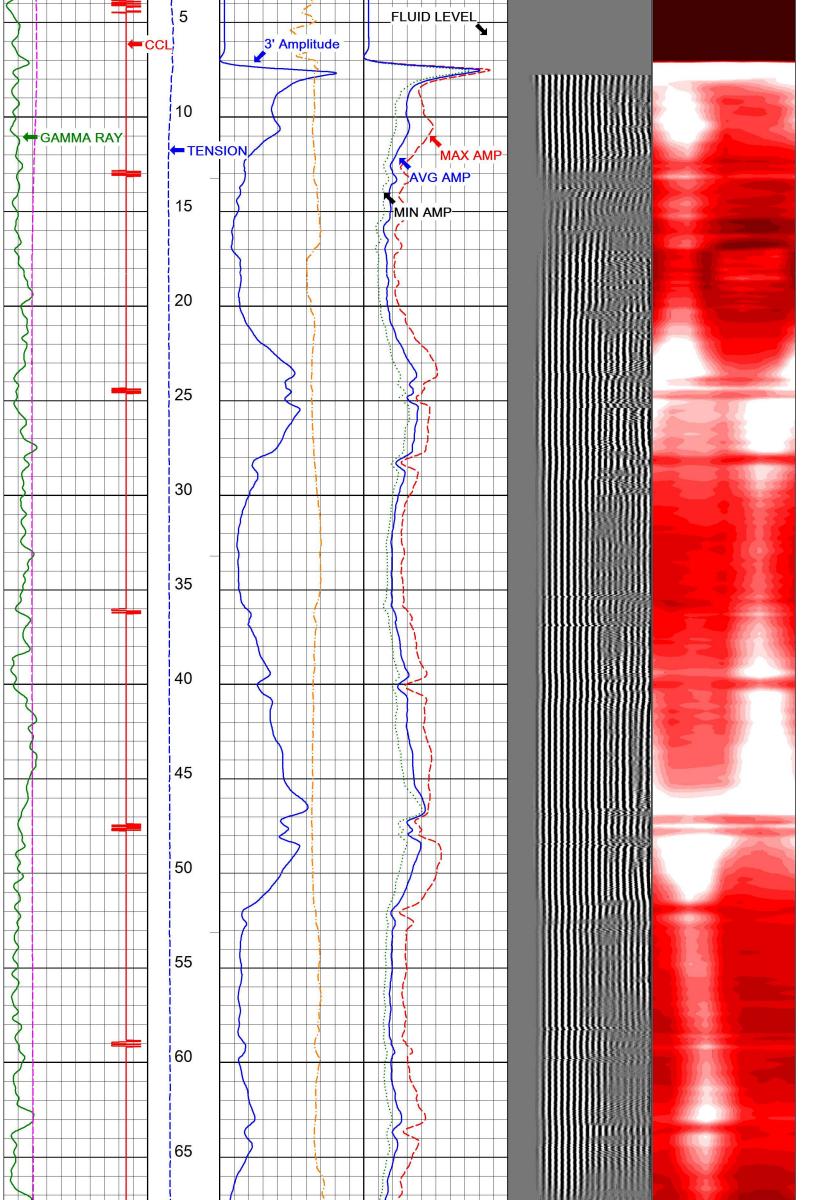
Centralizer

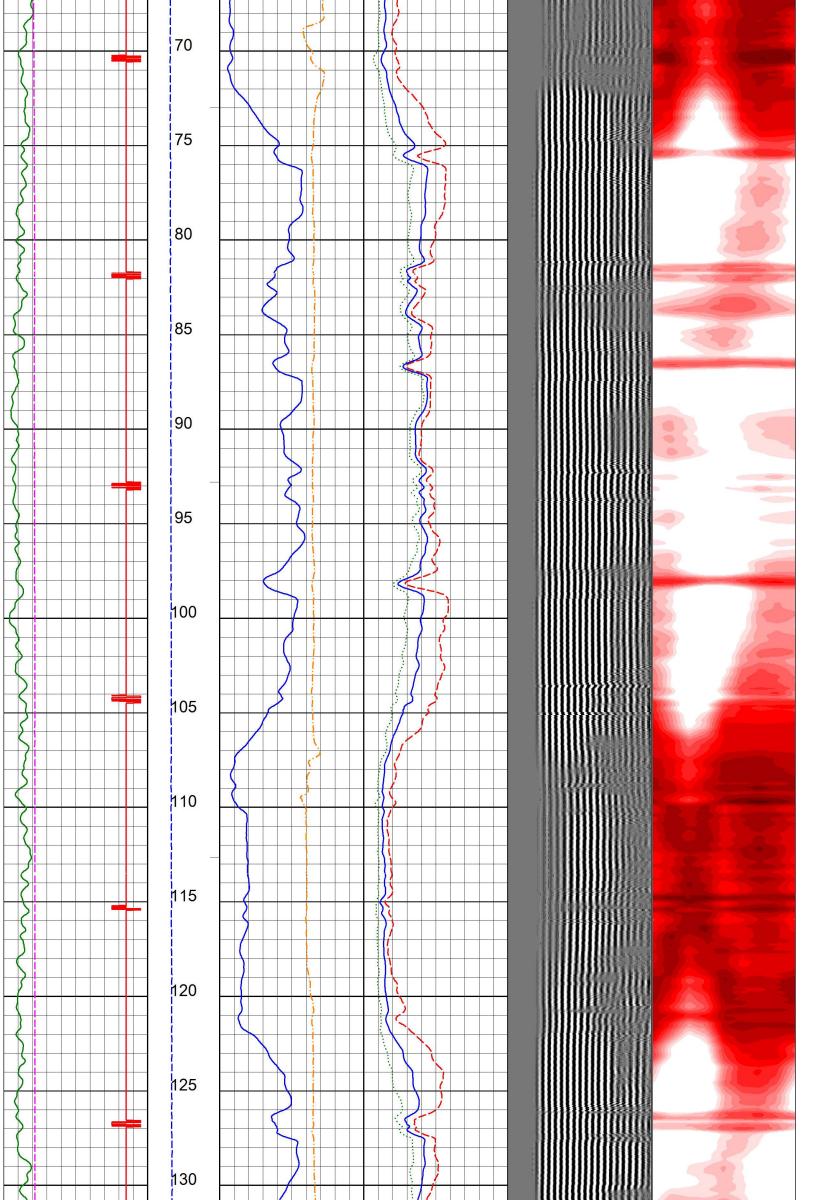
Length: 0.77 m Max Diameter: 11.38 in

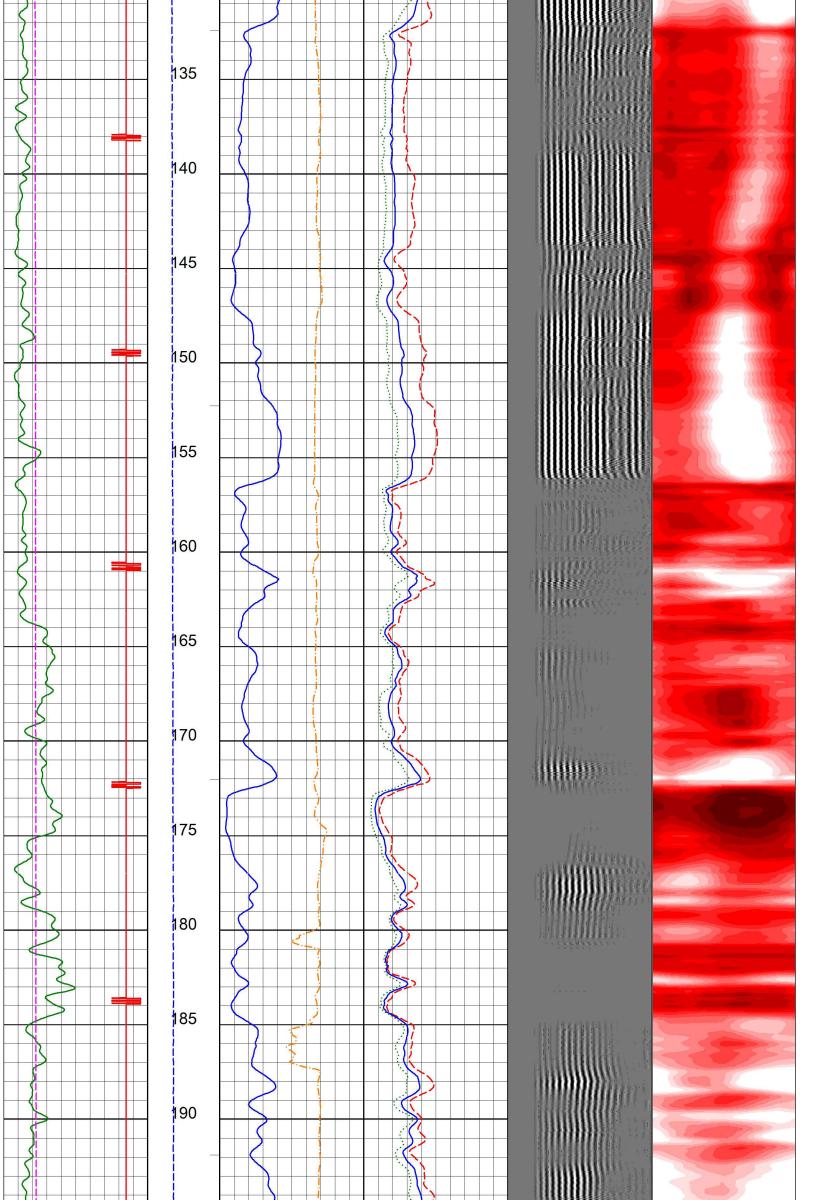


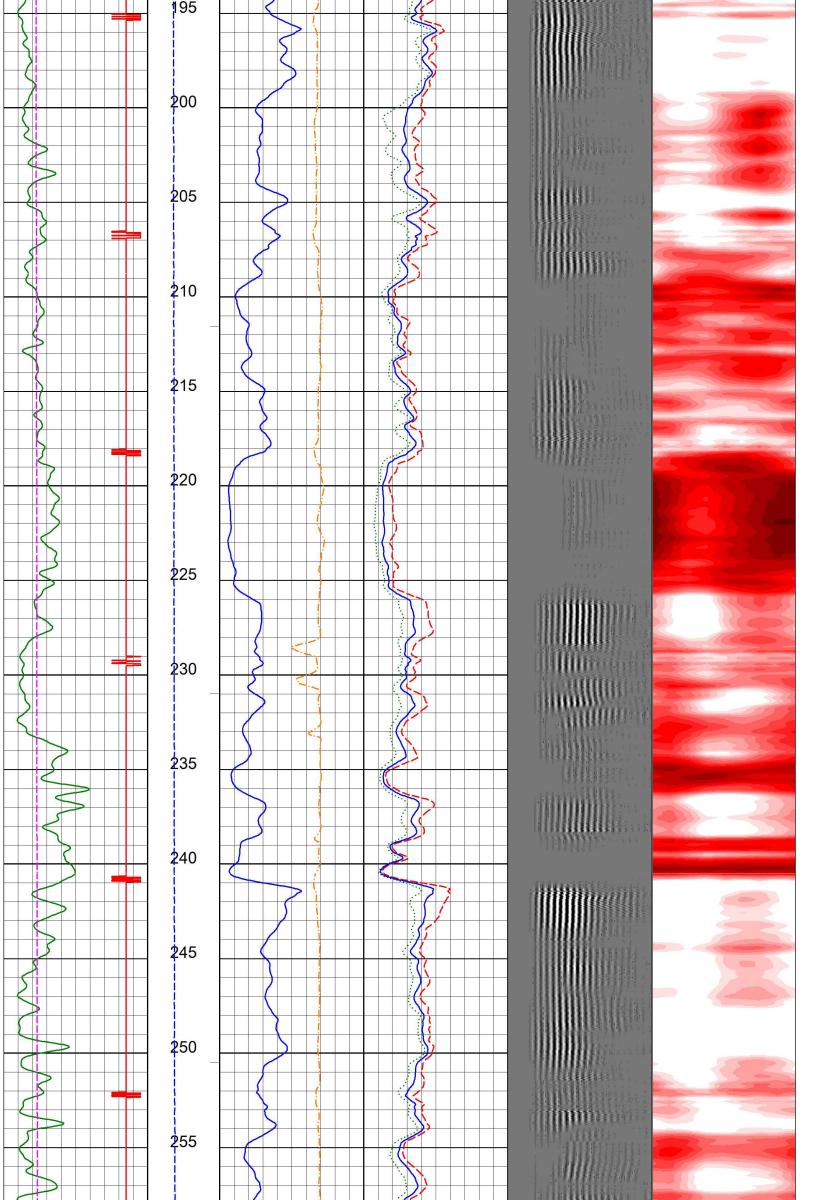


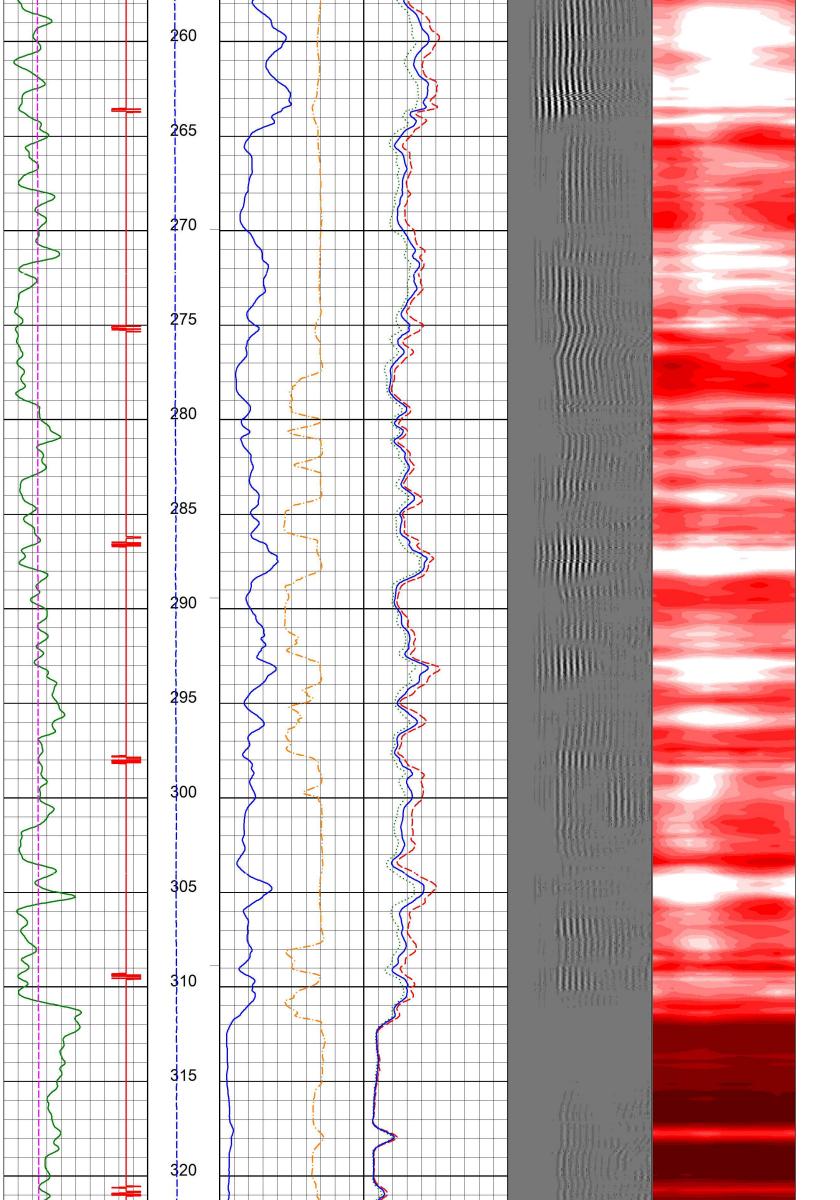


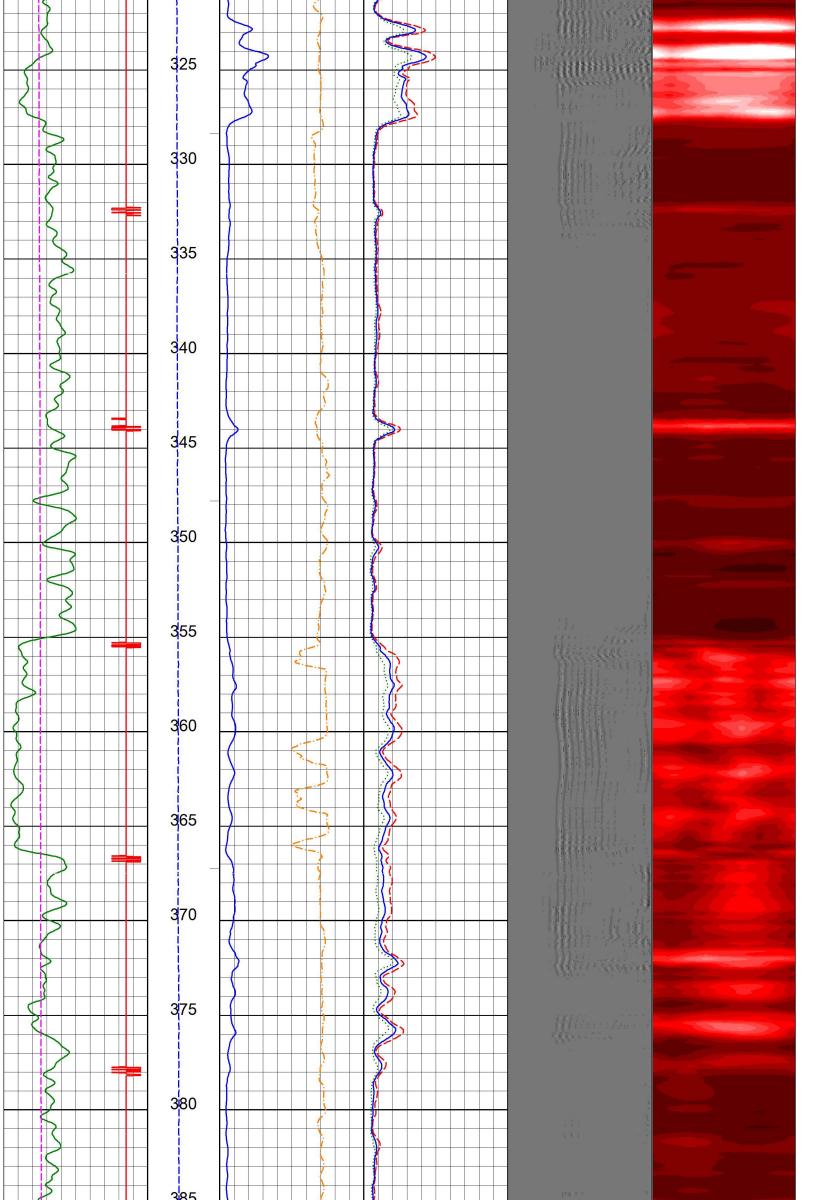


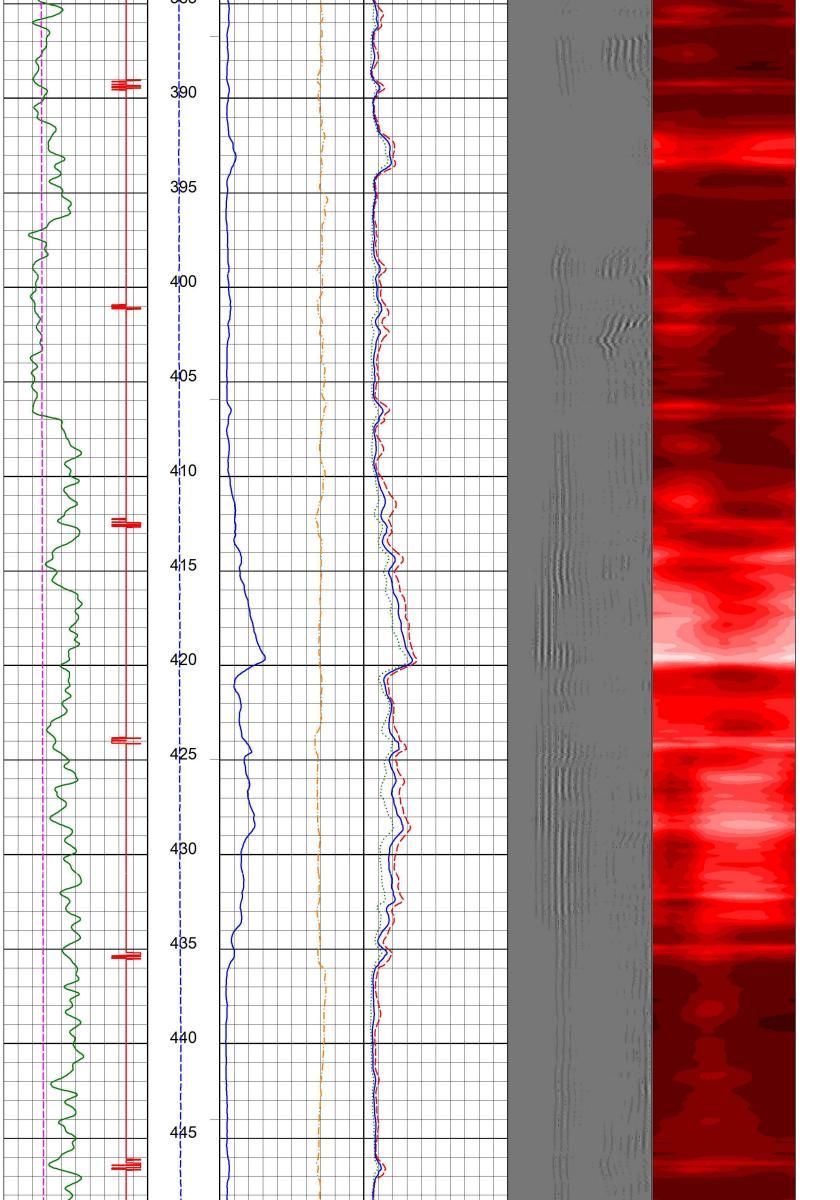


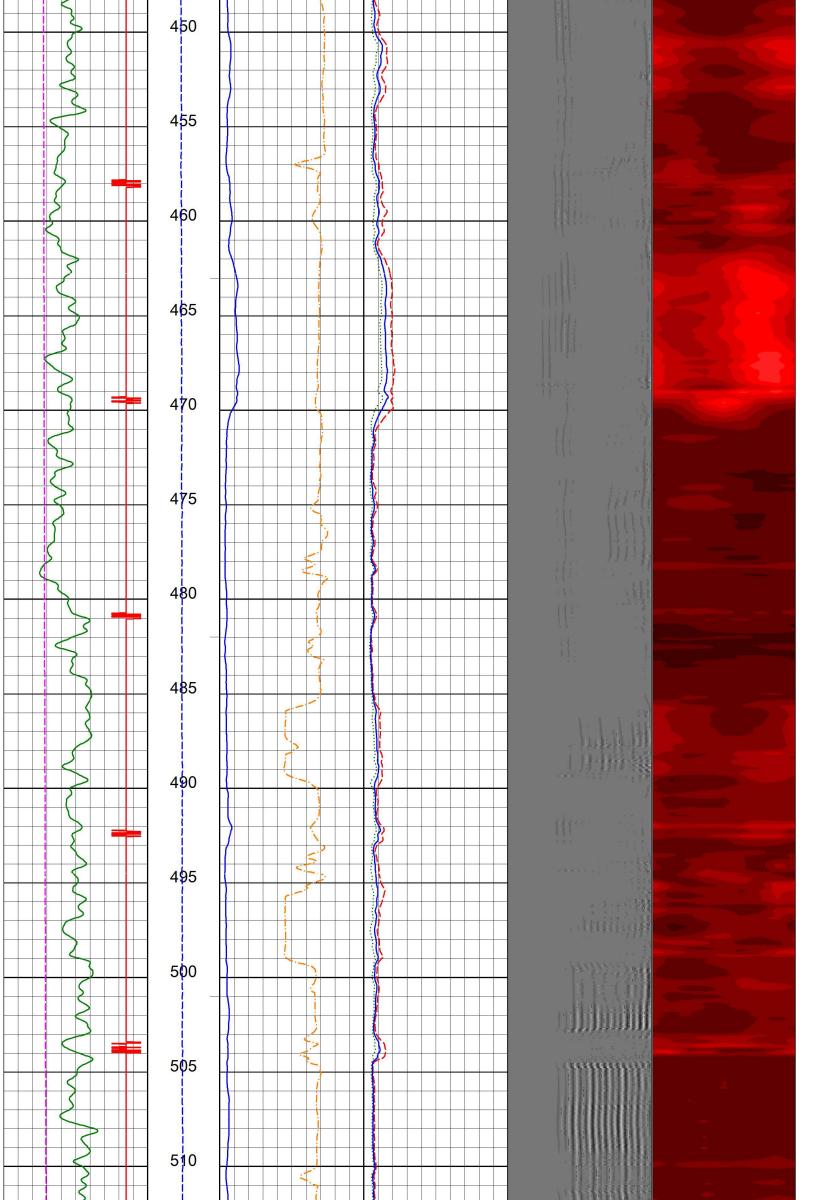


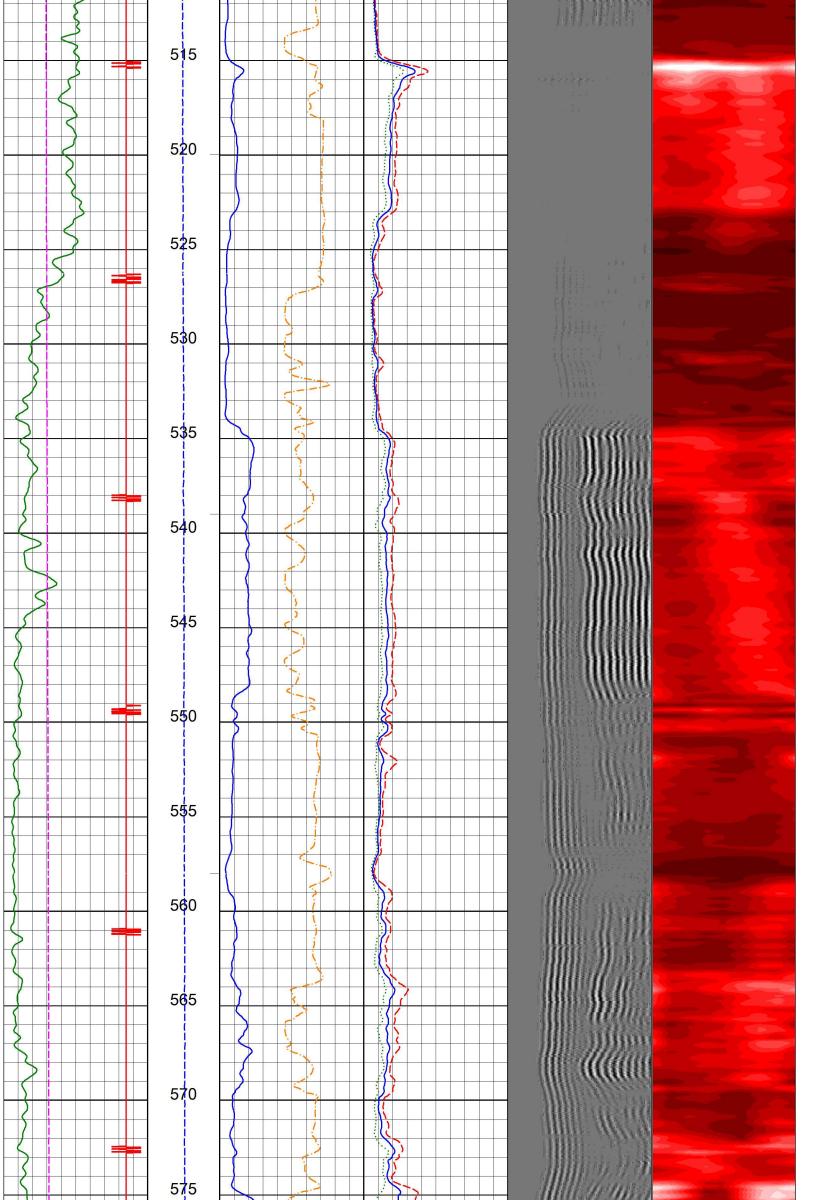


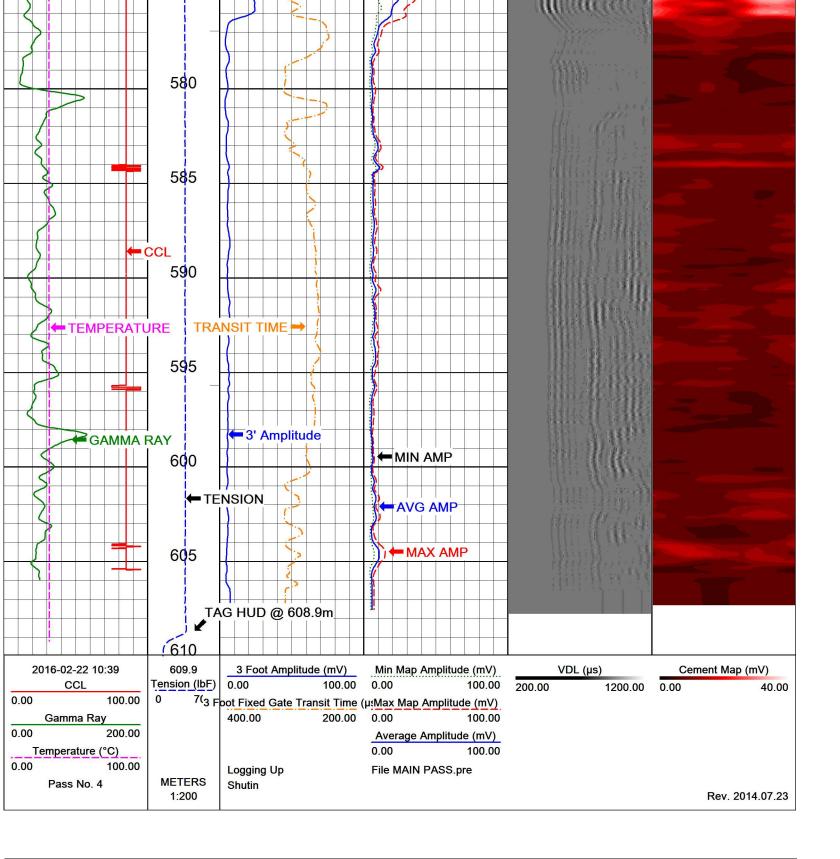


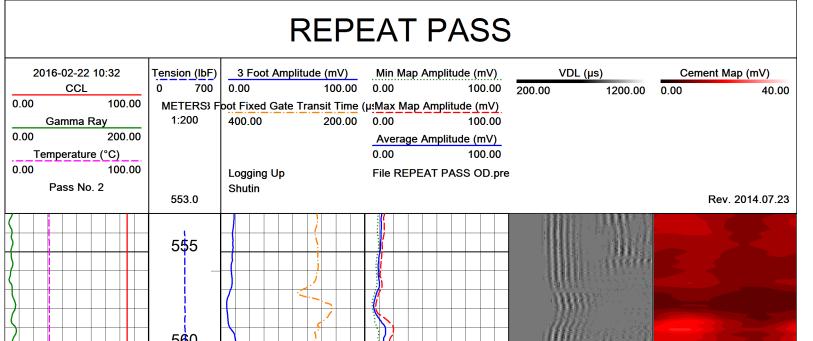


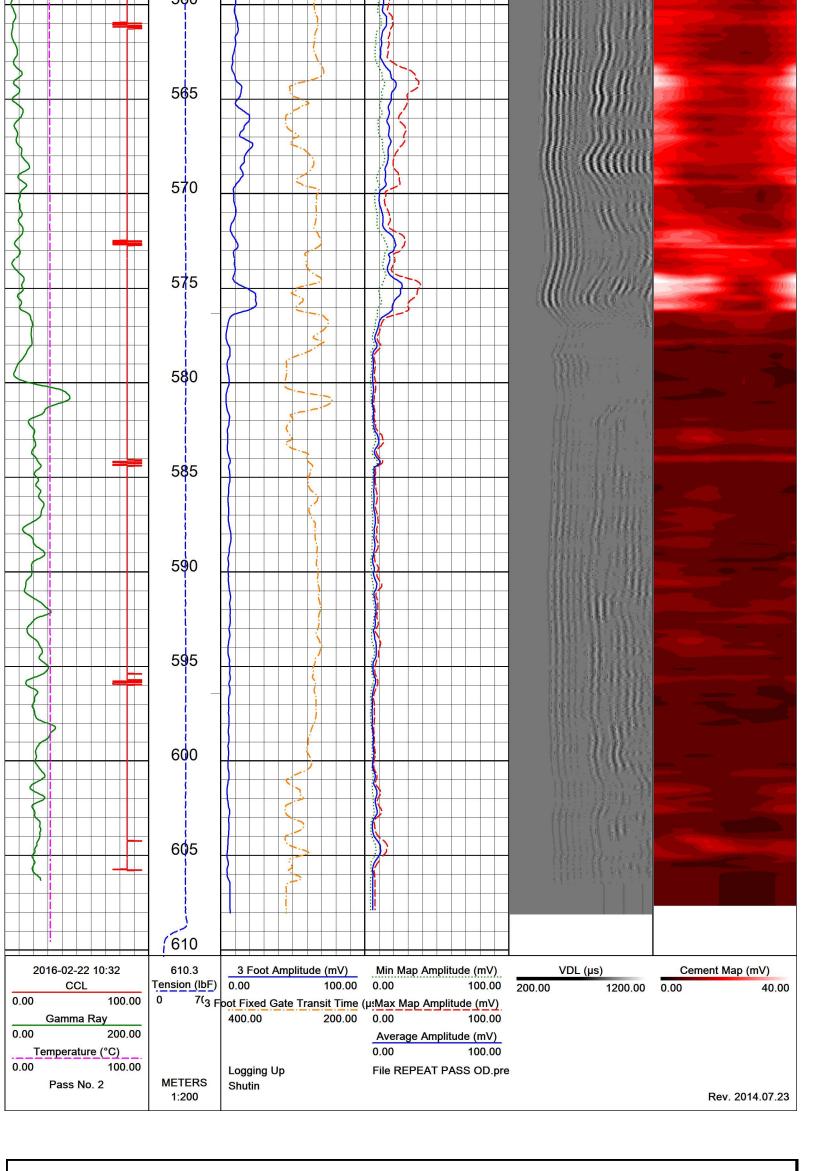












	e: 2016-02-22					
Waveforms	Free Pipe (mV)	Gain	Shift	Gate (us)	Width (us)	Polarity
Cal Pulse	100	1	0	242	95	Reversed
3 Foot	81	1.09093	3.2805	263	46	Normal
5 Foot	81	1.09531	3.26071	383	35	Normal
2 Foot	81	768.871	16.7627	200	50	Normal
Map1	81	0.563461	3.37417	204	40	Normal
Map2	81	0.546226	3.38375	206	39	Normal
Мар3	81	0.562688	3.36347	206	39	Normal
Мар4	81	0.574403	3.37923	206	39	Normal
Мар5	81	0.544949	3.38251	206	39	Normal
Мар6	81	0.523328	3.37937	206	39	Normal
Мар7	81	0.501417	3.36633	206	39	Normal
Map8	81	0.519631	3.37956	206	39	Normal



Company INGAUGE

Well PLUMB ROAD 1

Field

Area NARRABRI Country AUSTRALIA

Location

	KINETIC		E CEME	RADIAL CEMENT BOND LOG FIELD COPY	0 LOG		
File No: Co	Company INGAUGE	UGE					
Well Field		PLUMB ROAD 2					
Area		NARRABRI	Country	AUSTRALIA			
Loca	_ocation			Other Services	ces:	oth	10/17
Permanent Datum N	MSL	Elevation	0.0m	Elev K.B.		Dep	
Log Meas. From K	KB	M. Above Datum		Elev G.L.			A ===
Drilling Meas. From K	KB			KB - GL	2.15m		OT D
Date	22 - FEB - 2017		Perforations	S			
Run No	2		Density	Shots From	То		
PBTD Depth - Driller			<u> </u>			odel	
Bottom Of Logged Interval	375.8m		_	1		M	
Top Of Logged Interval	SURFACE						
Metres Logged	375.8m						
Fluid Type	BRINE						
Wellhead Pressure	0						
Max. Temp.	31.8DEG C						
Wireline Unit	WU - 17	Carrier Size		in Carrier Type		Гуре	
Recorded Ry	D DARRY	Charge Size	Size	gr Charge Type	ï		
Witnessed By	S. HOBDAY			L		e (in)	
Casing Record	Size (in)	Weight (lb/ft)	Тор	Bottom	n	Size	
	4.5"	11.6PPF					
							Guide
							Bridge Plug Re-Entry G
						Γ	R

CORRELATION LOG	DEPTH CORRELATED TO KINETIC COMPOSITE PLOT DATED 18/2/17
Remarks: EXPECTI	ED FREE PIPE AMPLITUDE IN 4.5" 11.6PPF CASING IS 81mV

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents, or employees. These interpretations are also subject to our general terms and conditions as set out in our current price schedule.

DSS HSR-20, 2 3/4" RBT CBL TOOL STRING

Max. Length: 6.06 m

Cable Head

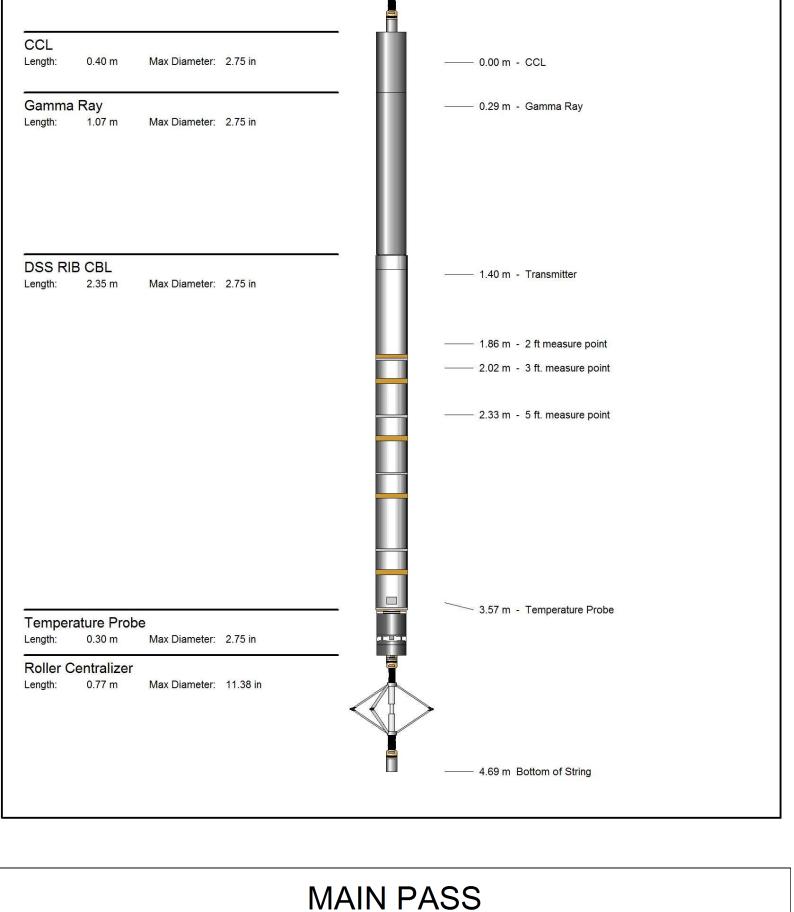
Length: 0.40 m Max Diameter: 1.44 in

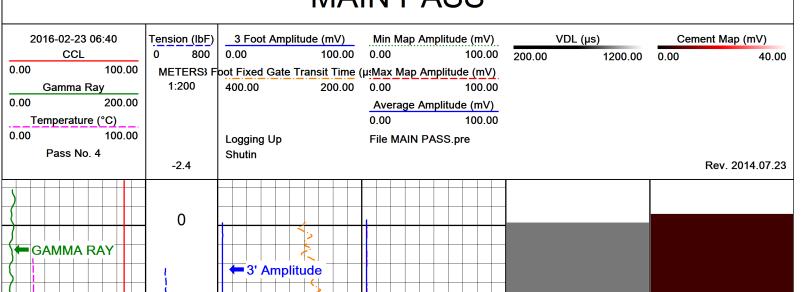
Centralizer

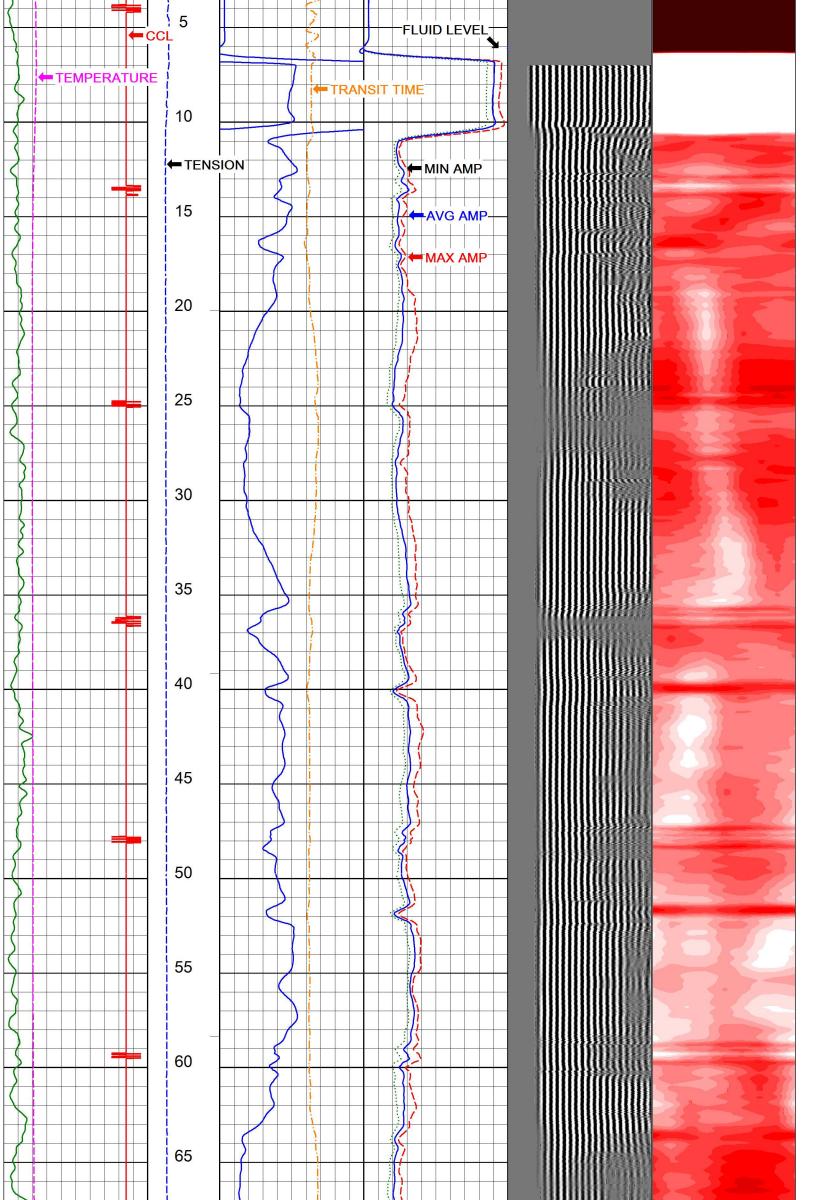
Length: 0.77 m Max Diameter: 11.38 in

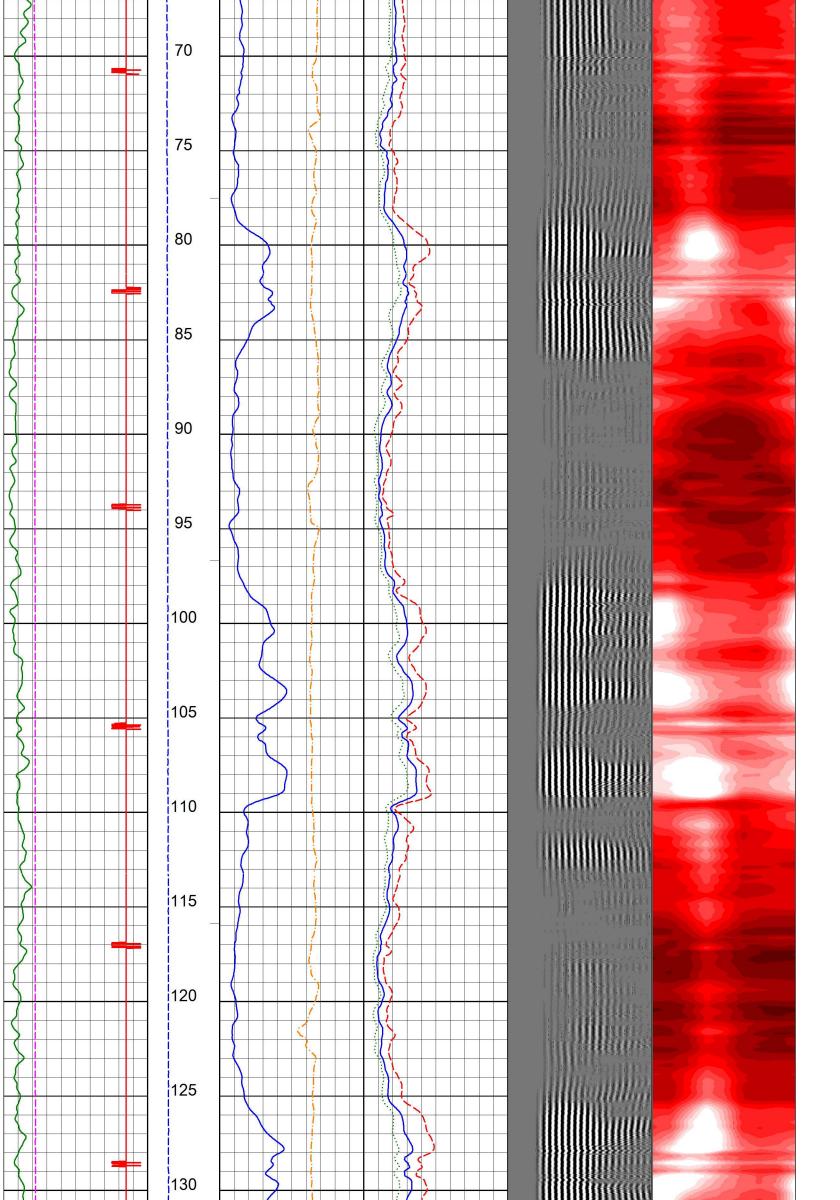


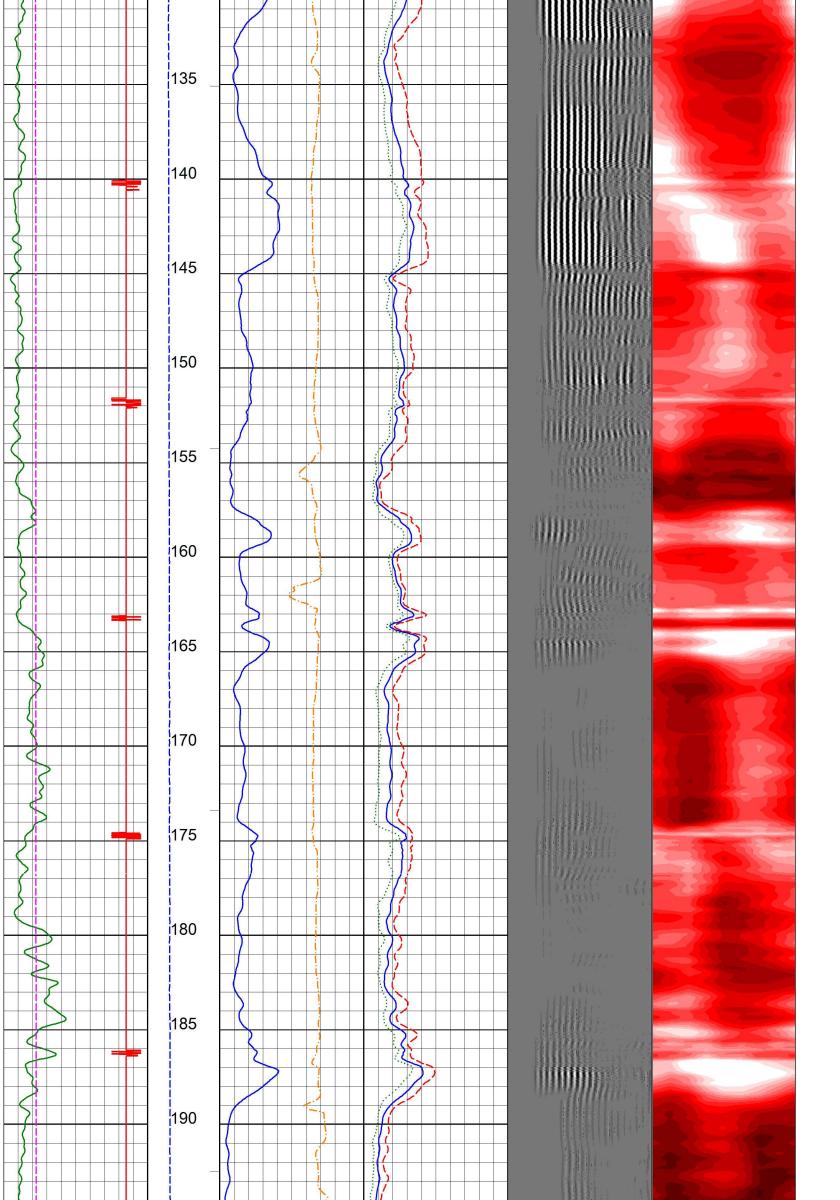
-1.37 m Top of String

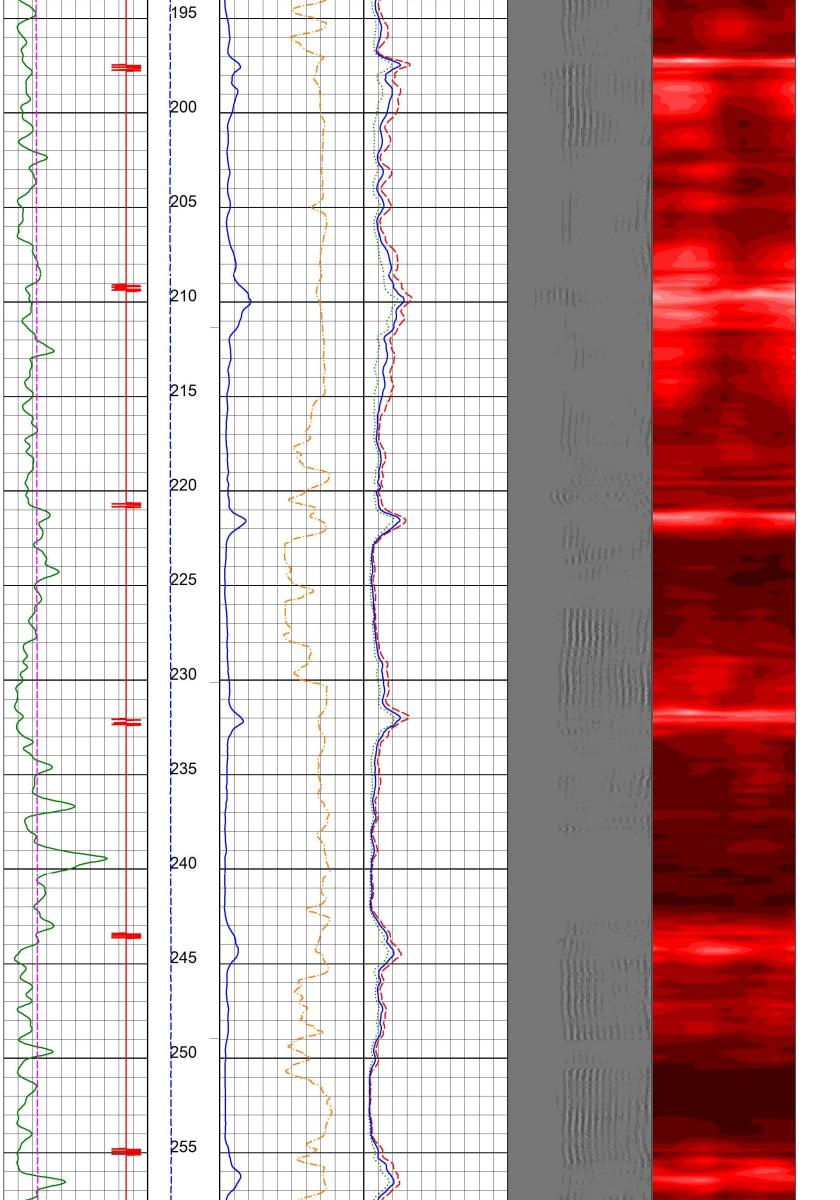


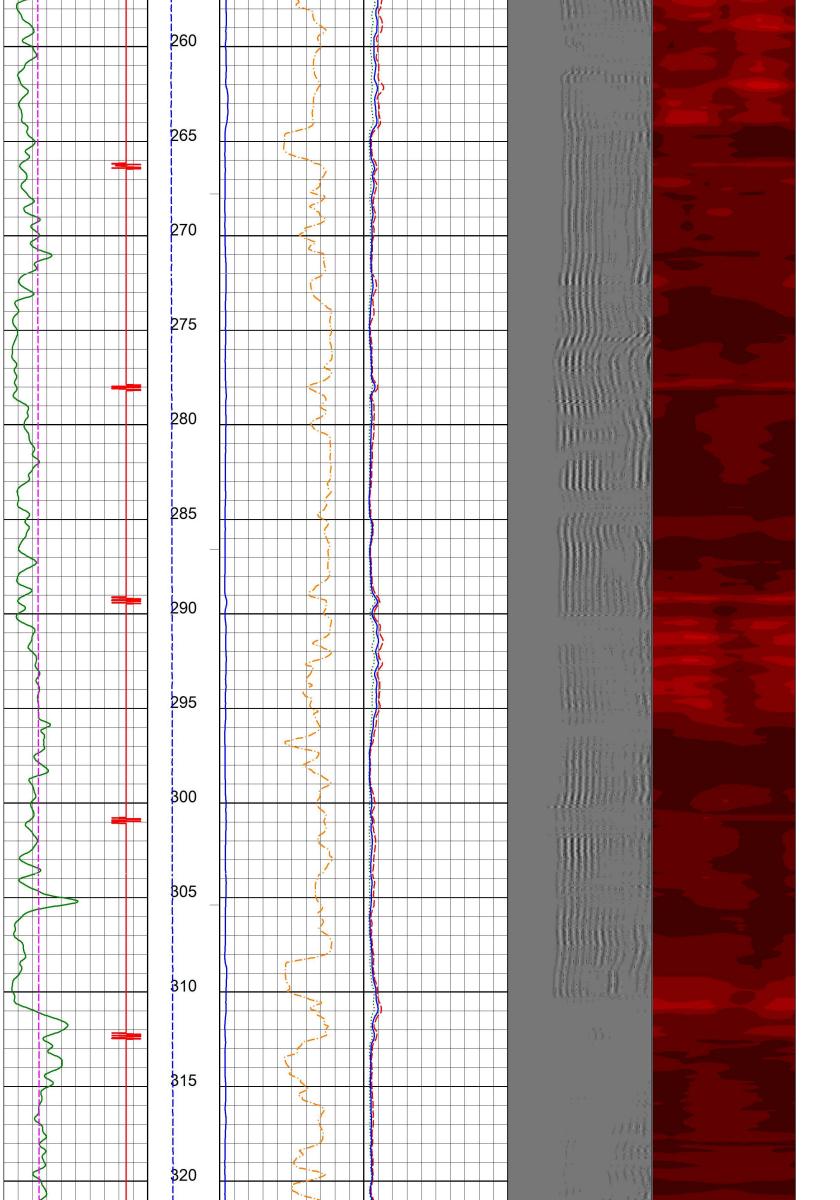


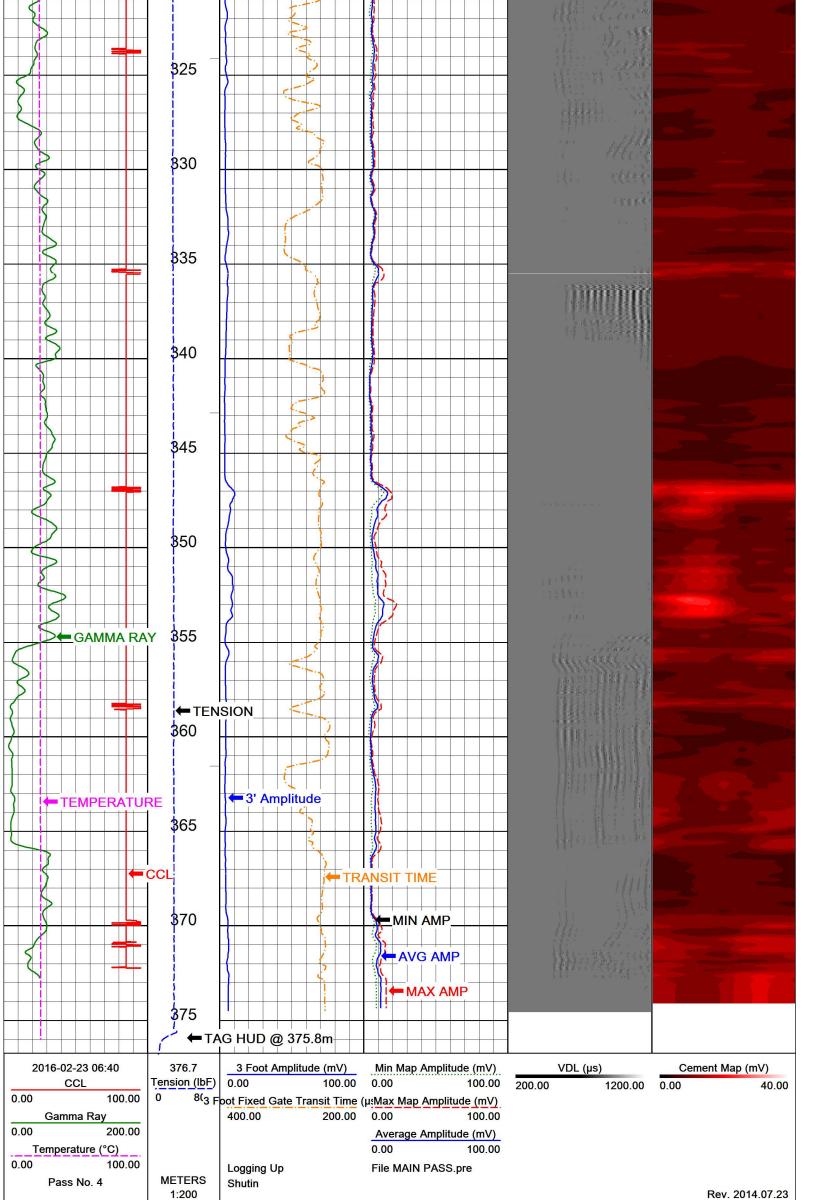


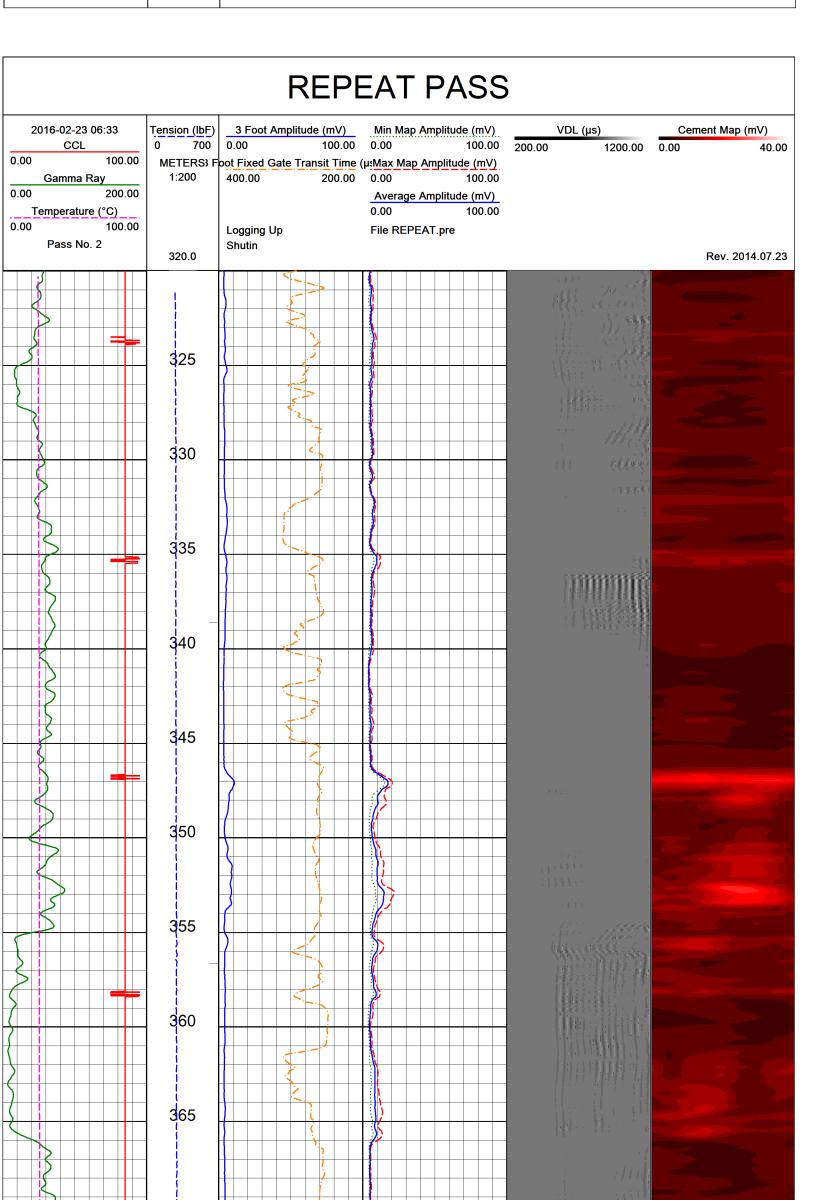


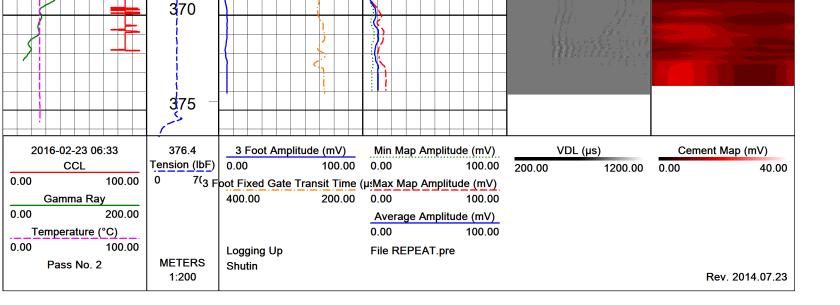












		Calibr	ation Summ	nary		
Serial Number:	DIGITAL RBT	4.000in Pl	umb Rd 2			
Calibration Date	e: 2016-02-23					
Waveforms	Free Pipe (mV)	Gain	Shift	Gate (us)	Width (us)	Polarity
Cal Pulse	100	1	0	242	95	Reversed
3 Foot	81	1.09093	3.2805	263	46	Normal
5 Foot	81	1.09531	3.26071	383	35	Normal
2 Foot	81	768.871	16.7627	200	50	Normal
Map1	81	0.563461	3.37417	204	40	Normal
Map2	81	0.546226	3.38375	206	39	Normal
Map3	81	0.562688	3.36347	206	39	Normal
Map4	81	0.574403	3.37923	206	39	Normal
Map5	81	0.544949	3.38251	206	39	Normal
Map6	81	0.523328	3.37937	206	39	Normal
Map7	81	0.501417	3.36633	206	39	Normal
Map8	81	0.519631	3.37956	206	39	Normal

Company INGAUGE



Well PLUMB ROAD 2

Field

Area NARRABRI Country AUSTRALIA

Location

X		KINETIC		DIAL C	EMEN LD	UT BO	RADIAL CEMENT BOND LOG FIELD COPY			
File No:	Company	NGAUGE	JGE							
	Well	PLUM	PLUMB ROAD 3	ω						
	Field									
	Area	NARRABRI	ABRI	Country		AUSTRALIA	LIA			
	Location					Other	Other Services:			
								.	otn	/2/17
Permanent Datum	MSL		Elevation	0.0m	3	Elev K.B.	(.B.	Dor	Dep	D 21
Log Meas. From	KB		M. Above Datum	atum		Elev G.L.	3.L.			ATE
Drilling Meas. From	Æ					KB - GL	3L 2.15m			.OT [
Date	23	23 - FEB - 2017			Perforations					. PL
Run No	2				Density S	Shots Fr	From To			SITE
Log Type	RBT	1								PO
PBTD Depth - Driller)				L	<u> </u>	Made	Mode	OM
For Of Logged Interval		SIDEACE				_	<u> </u> -	<u>_</u>	<u> </u>	
Metres Logged Interval		316.3m			<u> </u>	$\frac{1}{2}$	+	<u></u>		NET
Fluid Type	BR	BRINE								
Fluid Level	SU	SURFACE								
Wellhead Pressure	0									
Max. Temp.	25.	25.4DEG C								REL
Wireline Unit	WL	WU - 17	O	Carrier Size	in		Гуре	Turns	Туре	ORF
Recorded By	7	D PARRY	ט כ	Phasing	<u> </u>	gr Charge Type	lype	j		ΉС
Witnessed By	S	S. HOBDAY				-			(in))EP
Casing Record	Siz	Size (in)	Weight (lb/ft)	(lb/ft)	Тор		Bottom	Cina	Size	
	4.5"	5"	11.6PPF	F						LOG
									le	TION
										ELA
									ridge f e-Entr	ORR
										С

Remarks:	EXPECTED	FREE PIPE	AMPLITUDE	IN 4.5" 11	.6PPF CASING	IS 81mV

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DSS HSR-20, 2 3/4" RBT CBL TOOL STRING

Max. Length: 6.06 m

Cable Head

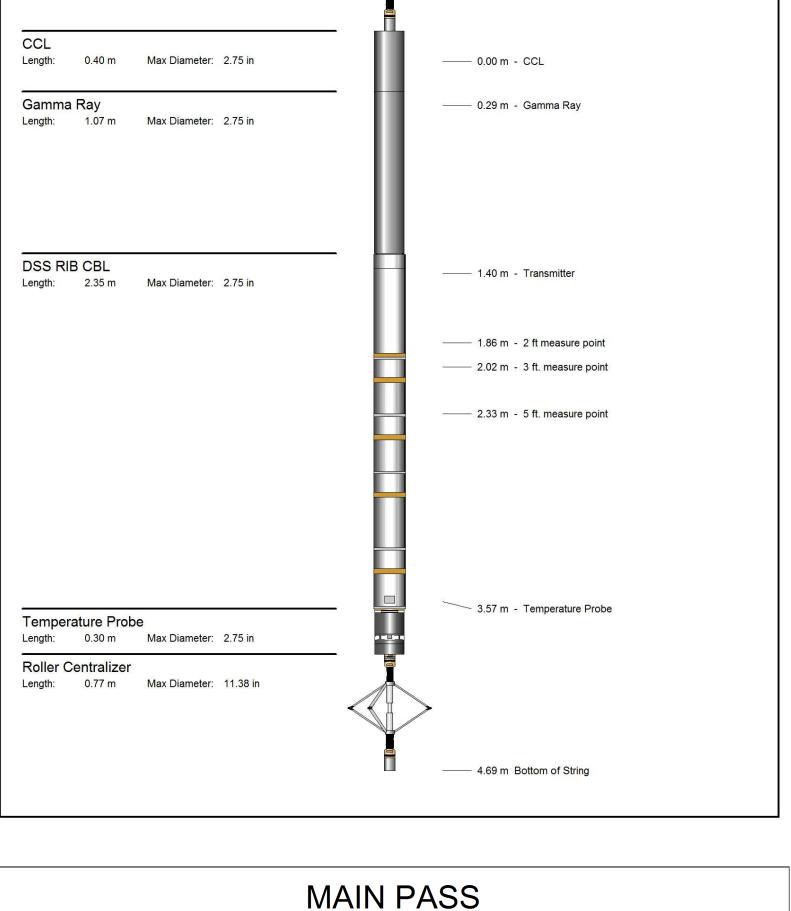
Length: 0.40 m Max Diameter: 1.44 in

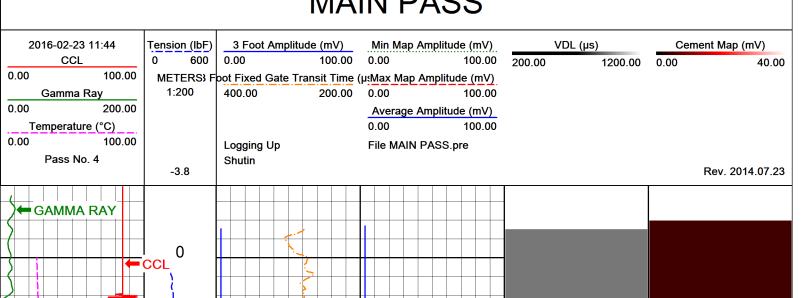
Centralizer

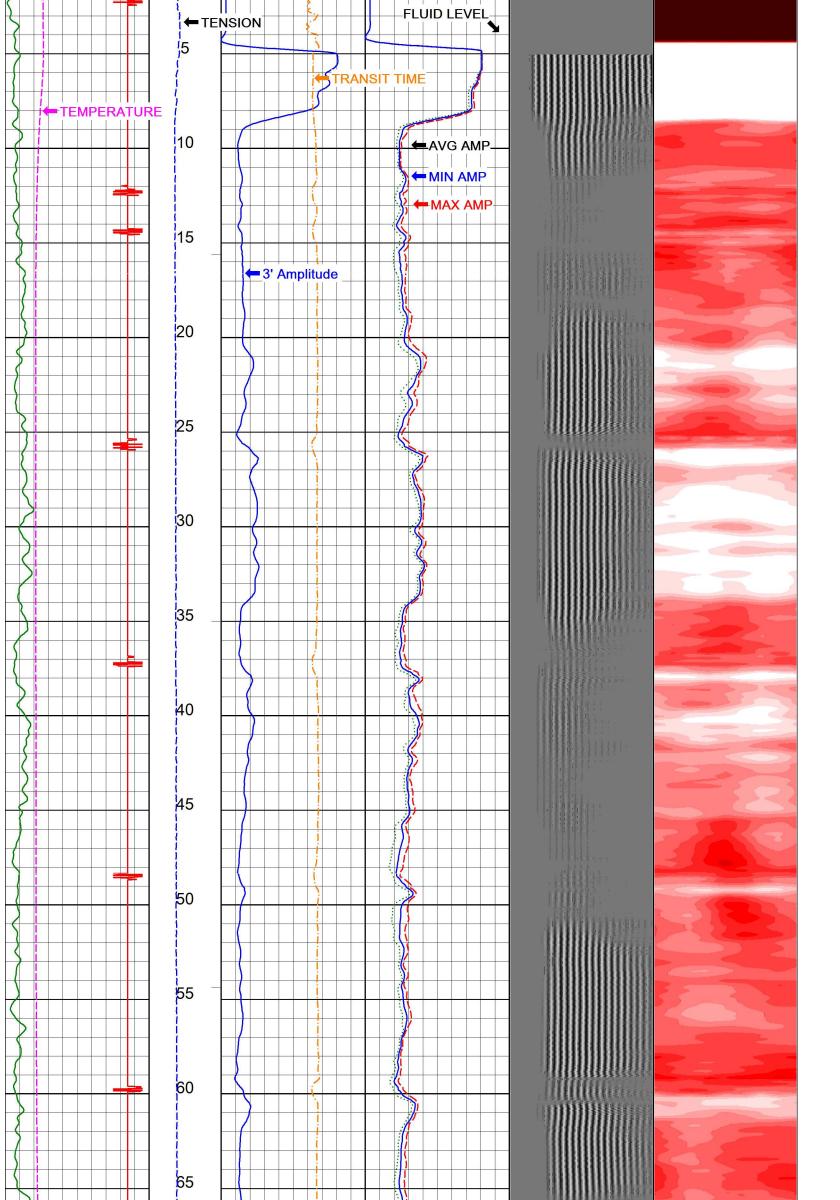
Length: 0.77 m Max Diameter: 11.38 in

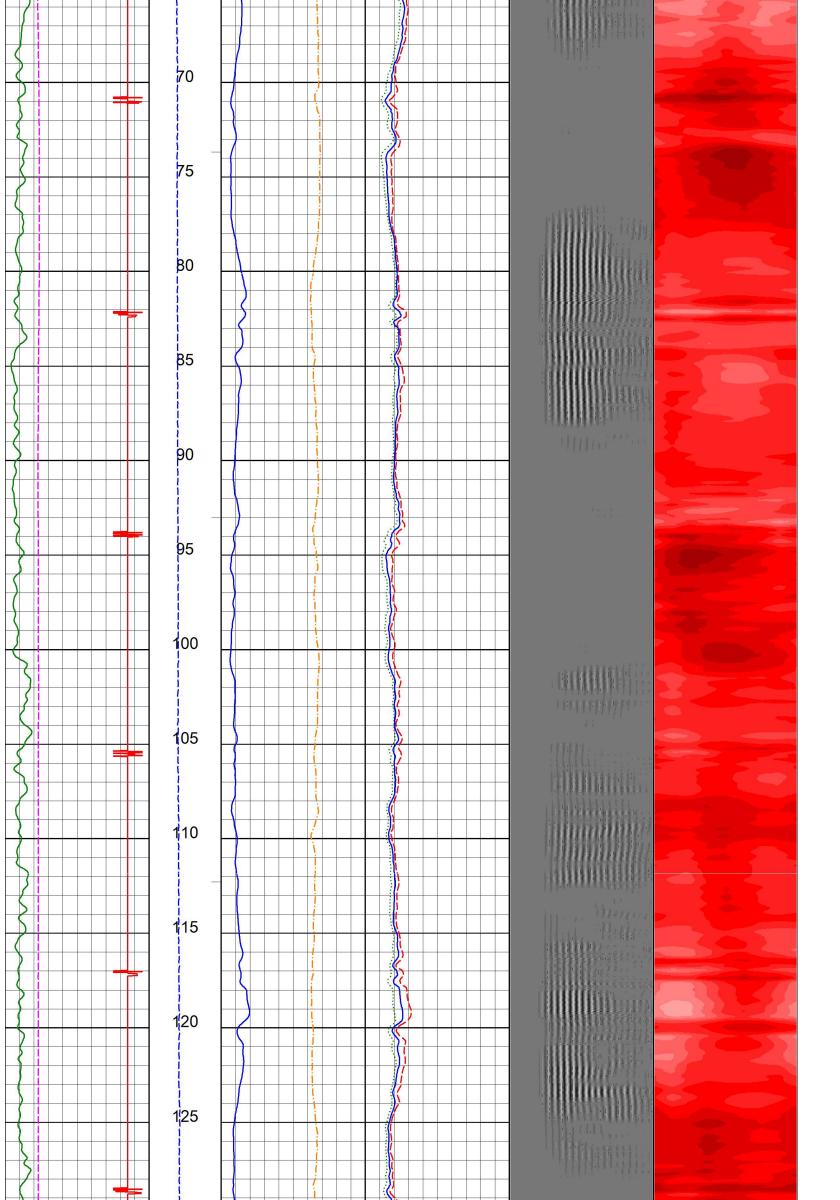


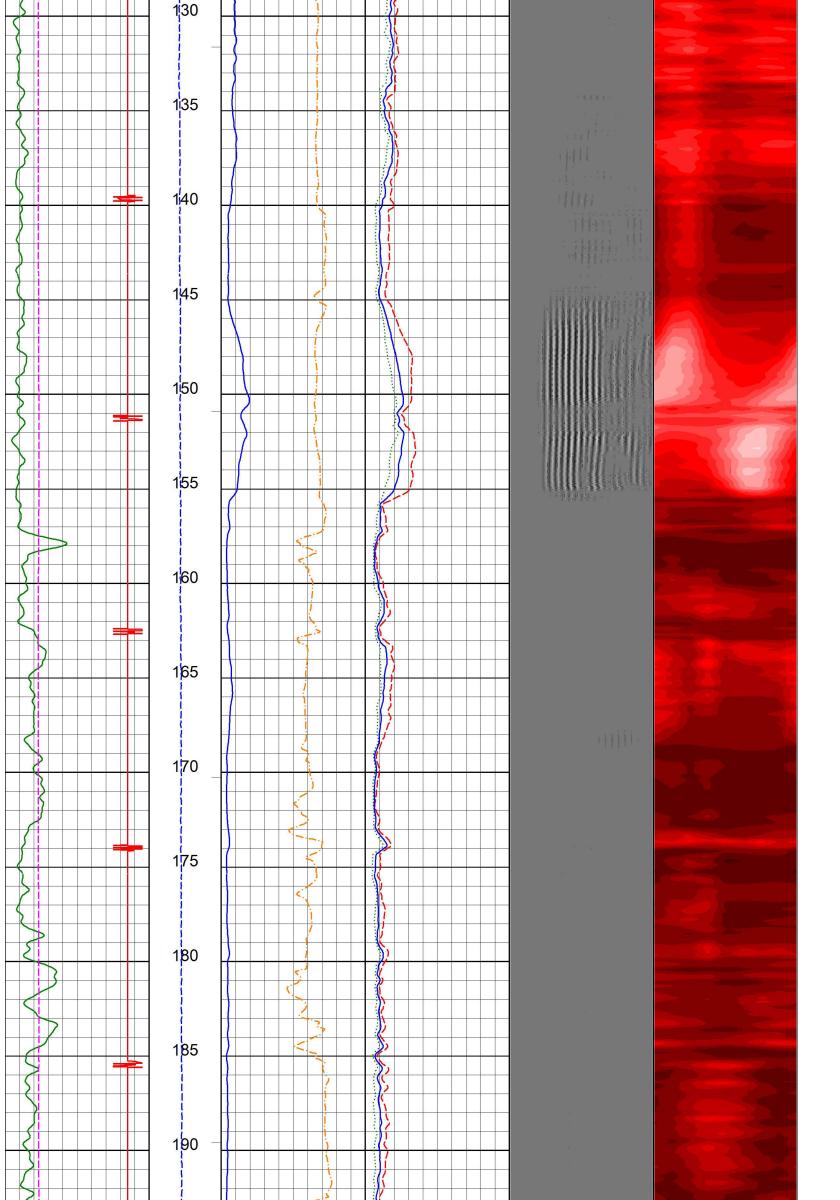
- -1.37 m Top of String

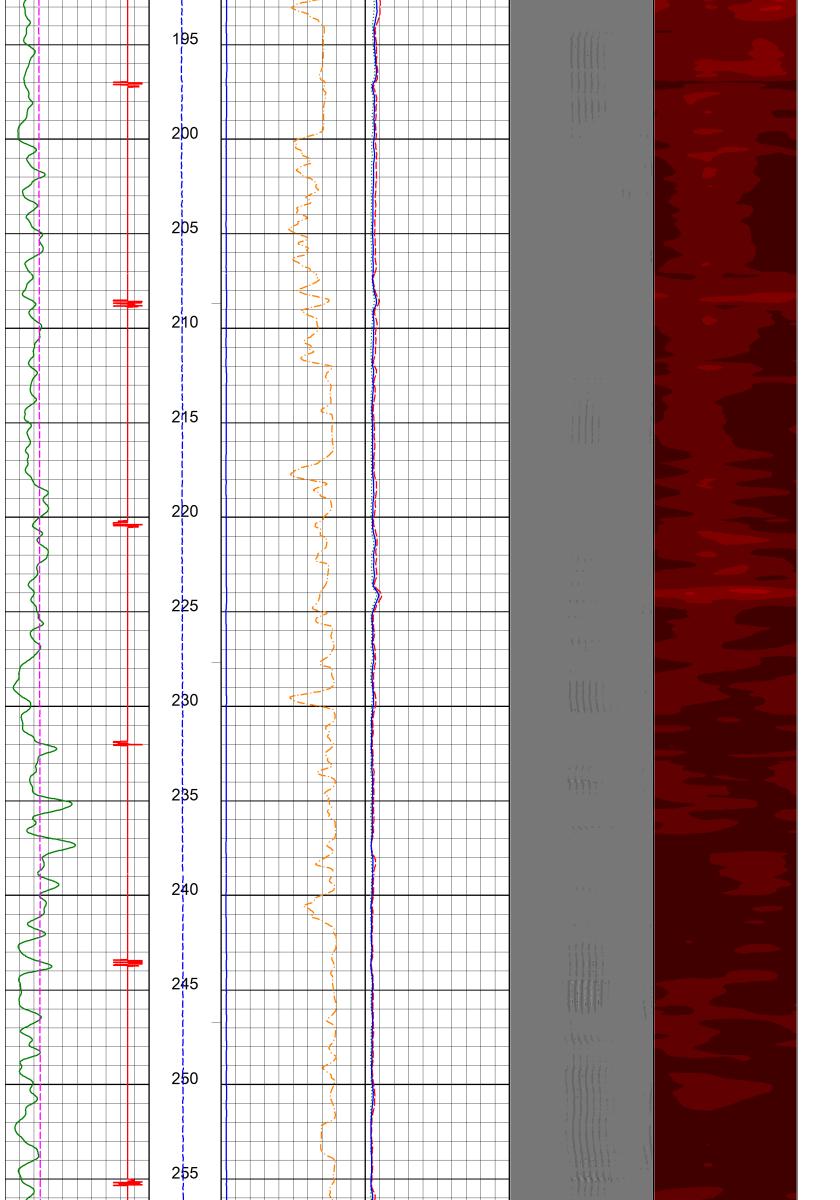


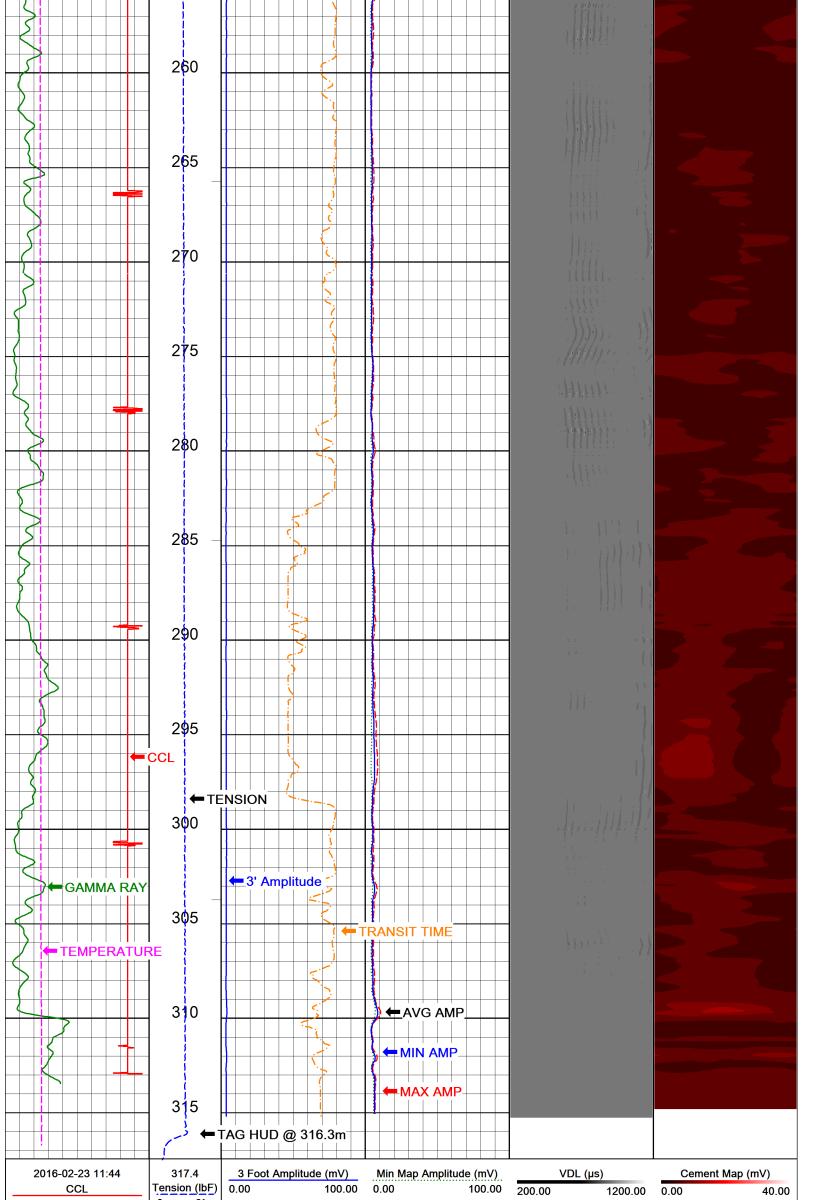




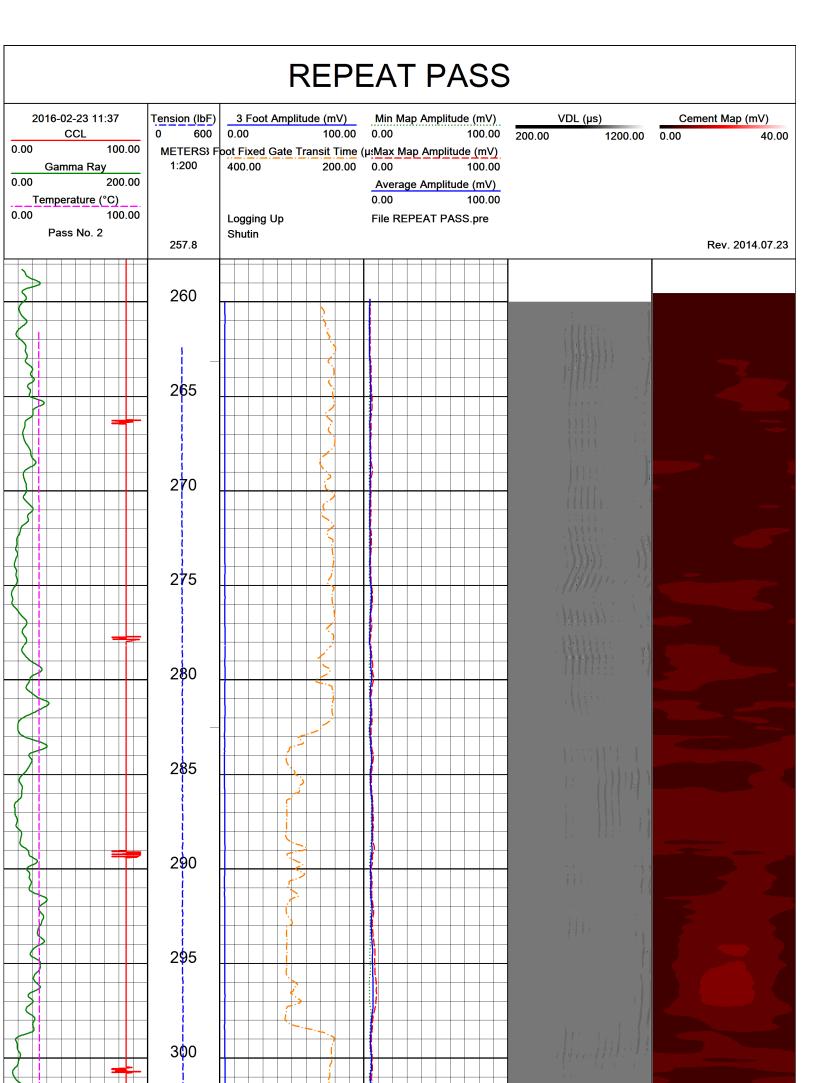


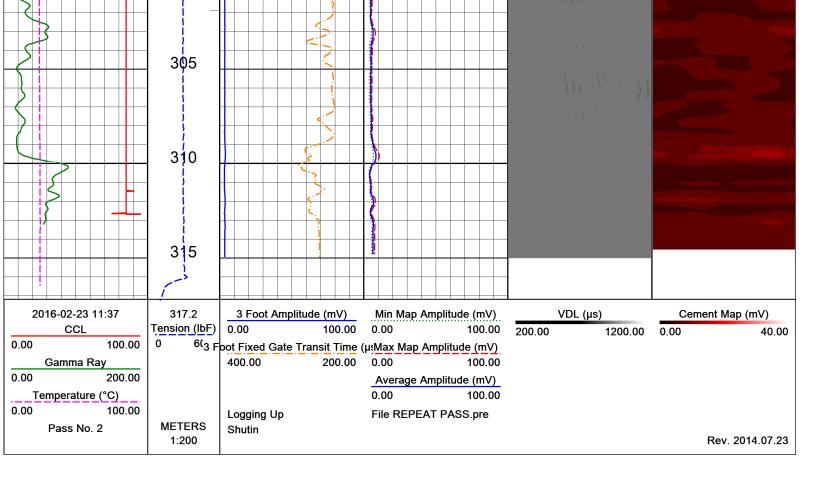






0.00 100.00	0 6(3 F	oot Fixed Gate Tra	nsit Time (μ:Max Map Amplitι	ude (mV)	
Gamma Ray		400.00	200.00	0.00	100.00	
0.00 200.00				Average Amplitu	ıde (mV)	
Temperature (°C)				0.00	100.00	
0.00 100.00		Logging Up		File MAIN PASS.	pre	
Pass No. 4	METERS	Shutin			•	
	1:200					Rev. 2014.07.23





		Calibr	ation Summ	nary		
Serial Number:		4.000in PI	umb Rd 3			
Waveforms	Free Pipe (mV)	Gain	Shift	Gate (us)	Width (us)	Polarity
Cal Pulse	100	1	0	242	95	Reversed
3 Foot	81	0.460614	3.25333	261	46	Normal
5 Foot	81	0.417005	3.22755	376	35	Normal
2 Foot	81	631.858	30.5549	200	50	Normal
Map1	81	0.430394	3.26665	201	40	Normal
Map2	81	0.42825	3.35097	204	39	Normal
Map3	81	0.425832	3.33071	204	39	Normal
Map4	81	0.422613	3.33714	204	40	Normal
Map5	81	0.423522	3.32787	203	39	Normal
Map6	81	0.424771	3.35524	204	39	Normal
Map7	81	0.42594	3.31447	203	39	Normal
Map8	81	0.428104	3.33524	204	39	Normal

Company INGAUGE



Well PLUMB ROAD 3

Field

Area NARRABRI Country AUSTRALIA

Location



Well Completion Report



Appendix 12 – Deviation Survey



VERTICALITY ANALYSIS

PLUMB-ROAD-1

COMPANY WELL	INGAUGE PLUMB-RO	AD-1	FIELD LOCATI		RRABRI IMB-ROAD-1	STATE COUNT	NSW TRY
ON: PLUMB-ROAD-1 NARRABRI NSW PLUMB-ROAD-1	PERM LOG N	ANENT DAT ANENT DAT MEASURED F ING MEASUR	UM ELEVATION RT	DN RT	ELEVA KB DF GL	TIONS:	REMARKS: 1. CS137
LOCATION: PLUMB-R FIELD: NARRABRI STATE: NSW WELL: PLUMB-ROAD COMPANY: INGAUGE	LICENSE	SECTION	TOWNSHIP	RANGE		ERVICES: 2.	2. CZ3956
DATE	02/13/17			R	ECORDED BY	DMB	
TIME	12:27:			٧	/ITNESSED BY		
RUN NUMBER	1			L	OGGING UNIT	V035	
DEPTH-DRILLER	642			R	IG NUMBER		
DEPTH-LOGGER	636.70			Т	OOL TYPE		
BIT SIZE	15.5			Т	OOL SERIAL NO.		
CASING TYPE	STEEL			L	ATITUDE		
CASING OD	17.01			L	ONGITUDE		
CASING BOTTOM	156.02			S	AMPLE INT.	.01	
FLUID TYPE	0			L	OG DIRECTION	U	
TRUCK CAL NO.	0.09792			F	EET OR METER	M	
WATER LEVEL				S	OURCE TYPE		SOURCE ID

IMPORTANT NOTE

The following interpretations are opinions based upon inferences from borehole logs, Kinetic Logging Services Pty Ltd cannot and does not guarantee the correctness or accuracy of any interpretations. Therefore Kinetic Logging Services Pty Ltd shall not be liable or responsible for any loss, damage, cost or expense incurred or sustained by anyone resulting from any interpretations.

CANGB

DEVIATION LIST

MNEMONIC DESCRIPTORS

SANGB SAMPLE ANGLE BEARING SANG

SAMPLE SLANT ANGLE (0 DEG = VERTICAL DOWN)

TVD TRUE VERTICAL DEPTH

EAST BOREHOLE EAST DEVIATION

NORTH BOREHOLE NORTH DEVIATION CDIST

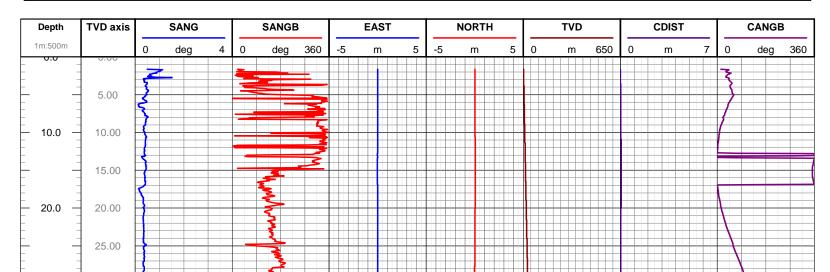
DEVIATED CLOSURE DISTANCE

DEVIATED CLOSURE ANGLE BEARING

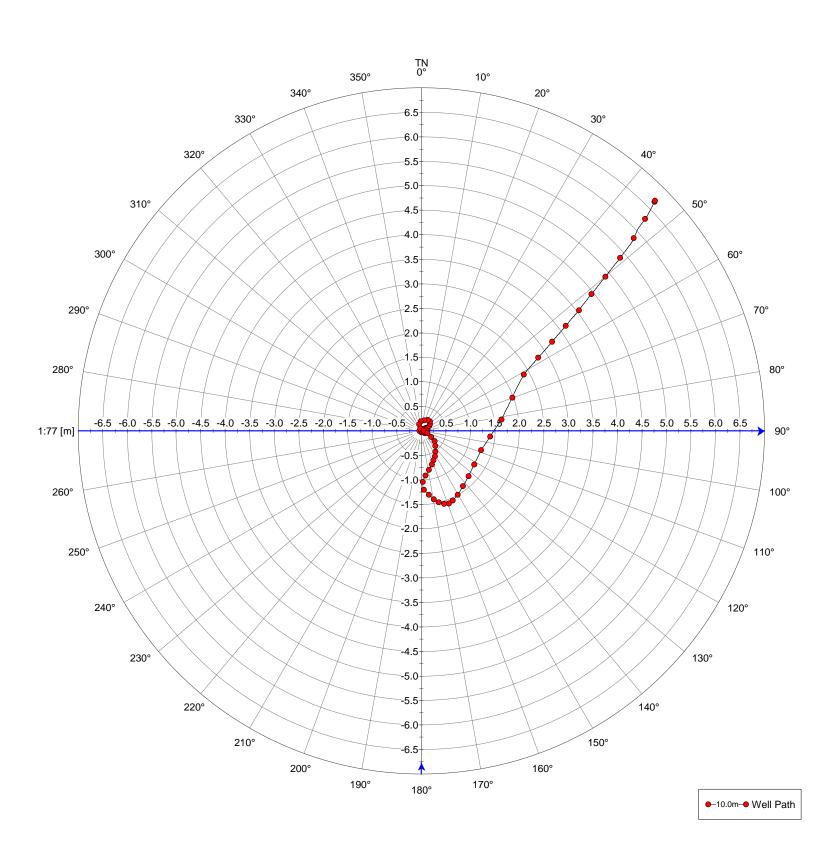
ALL CO-ORDINATES ARE PRESENTED ORIENTED TO TRUE NORTH MAGNETIC DECLINATION 10.83

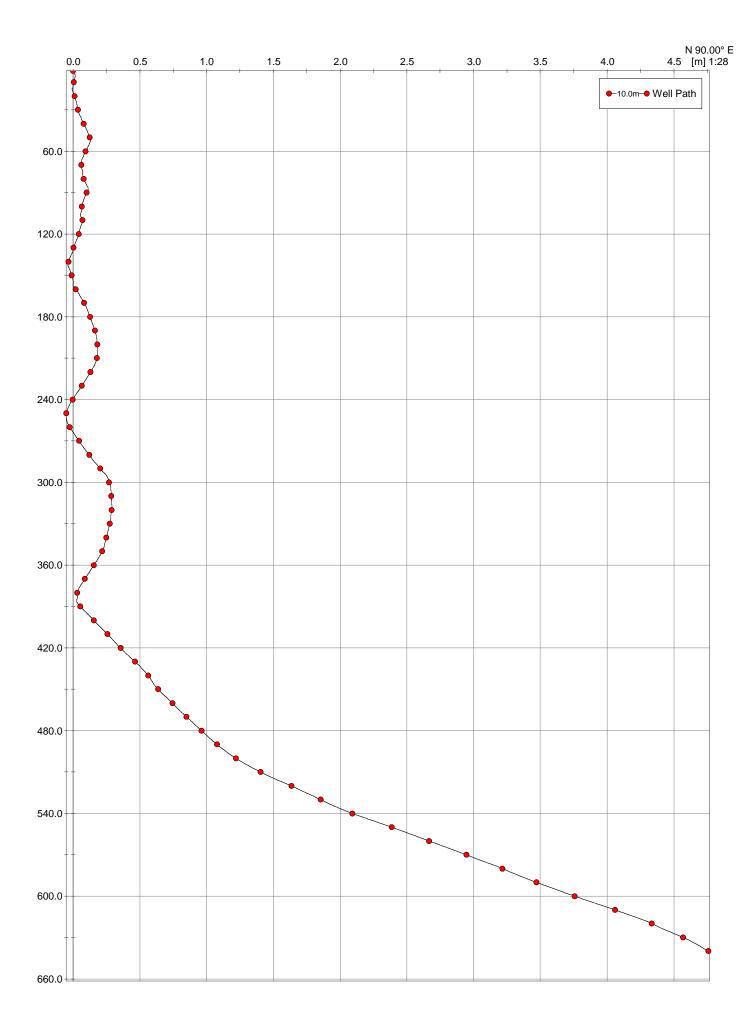
Depth	CANGB	CDIST	EAST	NORTH	SANG	SANGB	TVD
m	deg	m	m	m	deg	deg	m
0.00	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25
10.00	8.38353	0.0348836	0.00508598	0.0345108	0.381883	357.852	9.9997
20.00	14.8623	0.0410373	0.0105259	0.0396644	0.339853	150.434	19.9995
30.00	104.785	0.0371553	0.0359252	-0.00948163	0.34429	158.56	29.9993
40.00	101.305	0.0811038	0.0795301	-0.0158996	0.345343	85.0299	39.9991
50.00	79.7073	0.125601	0.123579	0.0224419	0.379025	29.6194	49.9989
60.00	56.4524	0.110601	0.0921775	0.0611211	0.3745	259.8	59.9987
70.00	69.9006	0.0648986	0.0609461	0.0223024	0.319405	160.45	69.9985
80.00	99 0937	0.0803483	0.0793384	-0.012699	0.329055	102 612	79 9983

90.00	102.279	0.104662	0.102268	-0.0222581	0.372047	193.793	89.9981
100.00	123.875	0.0790825	0.0656587	-0.0440793	0.334375	79.7963	99.998
110.00	108.589	0.0752913	0.0713636	-0.0240006	0.344198	13.4693	109.998
120.00	123.654	0.0507315	0.0422287	-0.0281144	0.262652	186.297	119.998
130.00	173.75	0.0289485	0.00315162	-0.0287764	0.375608	289.97	129.998
140.00	268.165	0.0353494	-0.0353312	-0.00113204	0.323747	277.793	139.997
150.00	302.876	0.013012	-0.0109281	0.00706325	0.256043	44.3408	149.997
160.00	29.2415	0.0422005	0.0206146	0.0368228	0.440048	96.1927	159.997
170.00	71.2968	0.0880601	0.0834098	0.0282379	0.357536	80.3884	169.997
180.00	65.0376	0.139522	0.126489	0.0588816	0.335839	46.6518	179.997
190.00	58.4641	0.191493	0.163212	0.100157	0.306147	38.0459	189.997
200.00	52.1475	0.229261	0.181023	0.140682	0.267678	14.293	199.996
210.00	43.2614	0.260733	0.178687	0.189874	0.301697	335.684	209.996
220.00	30.7554	0.256918	0.131381	0.220784	0.37068	284.013	219.996
230.00	16.6776	0.227622	0.0653244	0.218047	0.387271	258.749	229.996
240.00	358.738	0.19229	-0.00423459	0.192244	0.430718	241.011	239.996
250.00	339.429	0.141282	-0.049642	0.132274	0.483628	190.955	249.995
260.00	332.699	0.0536545	-0.0246093	0.047678	0.512841	135.449	259.995
270.00	84.7988	0.0451747	0.0449887	0.00409528	0.4311	116.349	269.995
280.00	112.041	0.130028	0.120525	-0.0487964	0.561348	130.538	279.994
290.00	120.962	0.236598	0.202885	-0.121722	0.716762	134.685	289.993
300.00	127.772	0.341854	0.270222	-0.209391	0.498901	156.152	299.993
310.00	137.434	0.422863	0.286044	-0.311436	0.694913	177.588	309.992
320.00	145.798	0.513331	0.288548	-0.424557	0.682284	183.57	319.992
330.00	152.074	0.587491	0.275137	-0.519082	0.565274	191.705	329.991
340.00	157.426	0.651728	0.250178	-0.601798	0.464002	201.987	339.991
350.00	162.271	0.718759	0.218877	-0.684622	0.645976	213.361	349.99
360.00	168.864	0.808622	0.156174	-0.793398	0.76045	210.721	359.99
370.00	174.44	0.911537	0.08831	-0.907249	0.817007	208.062	369.989
380.00	178.364	1.04237	0.0297678	-1.04194	0.913685	189.546	379.988
390.00	177.392	1.20455	0.0548016	-1.2033	0.828889	136.748	389.986
400.00	173.189	1.31049	0.155427	-1.30124	0.891102	135.307	399.985
410.00	169.552	1.41572	0.256736	-1.39224	0.8501	132.676	409.984
420.00	166.296	1.50133	0.355673	-1.45859	0.661151	114.864	419.983
430.00	162.735	1.5606	0.463177	-1.49028	0.602701	94.8049	429.983
440.00	159.17	1.58215	0.562611	-1.47874	0.50716	64.8275	439.982
450.00	155.773	1.55181	0.636795	-1.41513	0.727886	48.4226	449.982
460.00	150.239	1.49768	0.743431 0.850308	-1.30014	0.91289	35.1774	459.981 460.070
470.00 480.00	143.022	1.41362		-1.12928	1.28131	29.6214 25.3674	469.979 479.976
480.00	133.766	1.33325	0.962827	-0.922235	1.49641	25.3674	479.976
490.00	122.595	1.27887	1.07744	-0.688925	1.61299	25.036	489.972
500.00	108.004	1.28192	1.21915	-0.396226	2.07348	26.646	499.967
510.00	94.697	1.40923	1.4045	-0.115396	2.14838	35.7349	509.961 510.052
520.00	81.835	1.65226	1.63551	0.234662	2.72296	24.7945	519.952
530.00	69.8564	1.97538	1.85455	0.68027	2.78851	26.3542	529.94
540.00	61.2976	2.38585	2.09269	1.14583	3.02028	34.426	539.926
550.00	57.9293	2.81455	2.38503	1.49443	2.6066	43.7434	549.916
560.00	55.7371	3.22592	2.6661	1.81616	2.46157	42.1	559.907
570.00	54.0054	3.64139	2.94615	2.14007	2.33016	42.3447	569.898
580.00	52.5521	4.04993	3.21526	2.46252	2.16444	35.3493	579.889
590.00	51.1836	4.45212	3.46891	2.79071	2.53171	38.7153	589.88
600.00	50.0607	4.89936	3.75646	3.14527	2.5683	41.7724	599.87
610.00	48.9552	5.38107	4.05838	3.53348	2.98886	40.908	609.857
620.00	47.7913	5.85186	4.33449	3.93147	3.08833	24.5514	619.846
630.00	46.5467	6.2917	4.56736	4.3272	2.25593	40.9913	629.835
640.00	45.5104	6.6712	4.75908	4.67504	2.93603	22.9921	639.826
650.00	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25



DEVIATION PLOT







VERTICALITY ANALYSIS PLUMB ROAD 2

COMPANY WELL	TDC PLUMB RC	AD 2	FIELD LOCATI		RRABRI IMB ROAD 2	STATE COUNT	
ON: PLUMB ROAD 2 NARRABRI NSW PLUMB ROAD 2 NY: TDC	PERM LOG N	IANENT DATI IANENT DATI MEASURED F ING MEASUR	UM ELEVATIO	PN RT	ELEVA KB DF GL	TIONS:	REMARKS: 1. Log top measured from Rotary Table
LOCATION: PLU FIELD: NARRAB STATE: NSW WELL: PLUMB F COMPANY: TDC	LICENSE	SECTION	TOWNSHIP	RANGE		ERVICES: 2.	2.
DATE	18-02-2017			R	ECORDED BY	DMB	
TIME	06-48			V	/ITNESSED BY		
RUN NUMBER	1			L	OGGING UNIT	V035	
DEPTH-DRILLER	388m			R	IG NUMBER		
DEPTH-LOGGER	390.24m			Т	OOL TYPE	9057C	
BIT SIZE	15.5cm			Т	OOL SERIAL NO.	361	
CASING TYPE	STEEL			L	ATITUDE		
CASING OD	17.01cm			L	ONGITUDE		
CASING BOTTOM	154.75m			S	AMPLE INT.	.01m	
FLUID TYPE	0			L	OG DIRECTION	U	
TRUCK CAL NO.	0.09792			F	EET OR METER	М	
WATER LEVEL				s	OURCE TYPE		SOURCE ID

IMPORTANT NOTE

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CANGB

DEVIATION LIST

MNEMONIC DESCRIPTORS

SANGB SAMPLE ANGLE BEARING SANG

SAMPLE SLANT ANGLE (0 DEG = VERTICAL DOWN)

TVD TRUE VERTICAL DEPTH

EAST BOREHOLE EAST DEVIATION NORTH BOREHOLE NORTH DEVIATION CDIST

DEVIATED CLOSURE DISTANCE

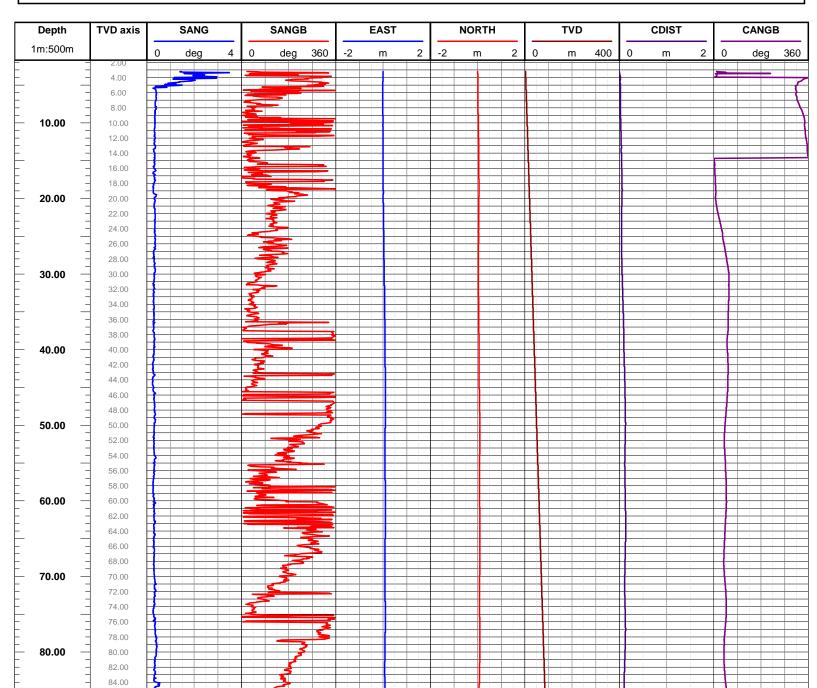
DEVIATED CLOSURE ANGLE BEARING

ALL CO-ORDINATES ARE PRESENTED ORIENTED TO TRUE NORTH

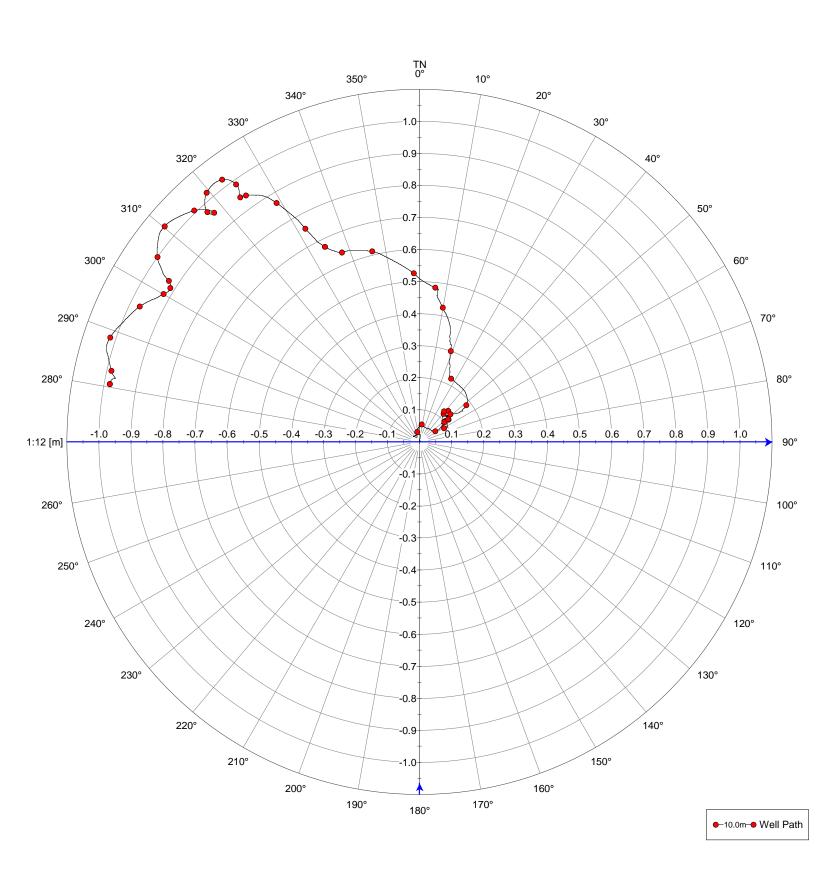
MAGNETIC DECLINATION 10.83deg

Depth	SANGB	SANG	EAST	NORTH	CDIST	CANGB	TVD
m	deg	deg	m	m	m	deg	m
0.00	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25
10.00	314.424	0.333967	-0.00718408	0.030365	0.0312032	346.689	9.99884
20.00	164.389	0.305575	0.00654592	0.0546398	0.0550305	6.83155	19.9987
30.00	64.0142	0.313404	0.0499383	0.0324442	0.0595522	56.9888	29.9985
40.00	53.152	0.305582	0.0777431	0.0612055	0.098945	51.7874	39.9984
50.00	293.502	0.310766	0.0895384	0.0969409	0.131965	42.7268	49.9982
60.00	177.386	0.308078	0.0968799	0.0863485	0.129776	48.2896	59.9981
70.00	146.375	0.321211	0.0755468	0.0869882	0.115214	40.9734	69.998
80.00	237 962	0.396045	0.0762898	0.0952698	0.122051	38 6869	79 9978

90.00	314.305	0.17052	0.0913022	0.0700198	0.11506	52.5154	89.9976
100.00	86.3274	0.437744	0.0769161	0.0429979	0.0881187	60.7938	99.9975
110.00	43.0376	0.62574	0.0899542	0.0705502	0.11432	51.8933	109.997
120.00	23.2758	0.718192	0.14669	0.114256	0.185936	52.0851	119.997
130.00	320.294	0.327567	0.098552	0.197066	0.220335	26.5695	129.996
140.00	3.54877	0.844969	0.0981708	0.282489	0.299061	19.1634	139.996
150.00	331.448	0.728243	0.0732716	0.417967	0.424341	9.94318	149.995
160.00	282.251	0.387955	0.0492741	0.480788	0.483307	5.85159	159.994
170.00	307.053	0.74489	-0.0175251	0.525759	0.526051	358.091	169.994
180.00	280.502	0.67015	-0.147864	0.594465	0.612578	346.032	179.993
190.00	262.769	0.269651	-0.241428	0.590842	0.638264	337.774	189.992
200.00	303.023	0.385933	-0.294906	0.608472	0.676171	334.142	199.992
210.00	318.615	0.596743	-0.355472	0.665048	0.754088	331.875	209.992
220.00	303.647	0.742997	-0.445321	0.744989	0.867939	329.131	219.991
230.00	252.658	0.378742	-0.541137	0.768315	0.939754	324.842	229.991
240.00	62.9243	0.0821988	-0.558943	0.762443	0.945376	323.755	239.99
250.00	313.962	0.315995	-0.571398	0.802378	0.985041	324.544	249.99
260.00	258.834	0.34201	-0.615687	0.817889	1.02373	323.028	259.99
270.00	205.618	0.392732	-0.663635	0.776572	1.02151	319.484	269.99
280.00	142.196	0.270912	-0.661252	0.717085	0.97543	317.32	279.99
290.00	333.954	0.142384	-0.640457	0.714906	0.959831	318.144	289.99
300.00	256.858	0.542841	-0.70234	0.721565	1.00694	315.774	299.99
310.00	222.319	0.659823	-0.794963	0.672043	1.04096	310.21	309.989
320.00	174.166	0.544464	-0.817407	0.576485	1.00024	305.194	319.988
330.00	143.184	0.352047	-0.781785	0.502367	0.92928	302.724	329.988
340.00	201.775	0.155792	-0.776474	0.479816	0.912762	301.714	339.988
350.00	255.382	0.265258	-0.797772	0.460525	0.921154	299.996	349.988
360.00	238.334	0.601592	-0.871991	0.422603	0.969	295.857	359.988
370.00	212.017	0.889593	-0.964746	0.325823	1.01828	288.661	369.987
380.00	164.937	0.56975	-0.960295	0.221291	0.985462	282.977	379.986
390.00	202.49	0.614669	-0.965745	0.180296	0.98243	280.575	389.986



DEVIATION PLOT



240.0 -

280.0 -

320.0 -

360.0 -

400.0





VERTICALITY ANALYSIS PLUMB ROAD 3

COMPANY WELL	TDC PLUMB RO	AD 3	FIELD NARRABRI LOCATION PLUMB ROAD 3				STATE NSW Country Austral	
ON: PLUMB ROAD 3 NARRABRI NSW PLUMB ROAD 3	PERM LOG N		UM ELEVATION SLIPS		ELEVA KB DF GL	TIONS:	REMARKS: 1. 2.	
LOCATION: PLL FIELD: NARRAB STATE: NSW WELL: PLUMB F COMPANY: TDC	LICENSE	SECTION	TOWNSHIP	RANGE		ERVICES: 2.		
DATE	21-02-2017			R	ECORDED BY	MSA		
TIME	10-24	10-24		W				
RUN NUMBER	1			L	OGGING UNIT	V035		
DEPTH-DRILLER	336m			R	IG NUMBER			
DEPTH-LOGGER	335.84m			T	OOL TYPE	9057C		
BIT SIZE	15.5cm			T	OOL SERIAL NO.	361		
CASING TYPE	STEEL			L	ATITUDE			
CASING OD	17.01cm			L	ONGITUDE			
CASING BOTTOM	155.16m			S	AMPLE INT.	.01m		
FLUID TYPE	0			L	OG DIRECTION	U		
TRUCK CAL NO.	0.09792			F	EET OR METER	М		
WATER LEVEL				s	OURCE TYPE		SOURCE ID	

IMPORTANT NOTE

SANG

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CANGB

DEVIATION LIST

MNEMONIC DESCRIPTORS

SANGB SAMPLE ANGLE BEARING

SAMPLE SLANT ANGLE (0 DEG = VERTICAL DOWN)

TVD TRUE VERTICAL DEPTH

EAST BOREHOLE EAST DEVIATION

NORTH
ICAL DOWN) CDIST

BOREHOLE NORTH DEVIATION

DEVIATED CLOSURE DISTANCE

DEVIATED CLOSURE ANGLE BEARING

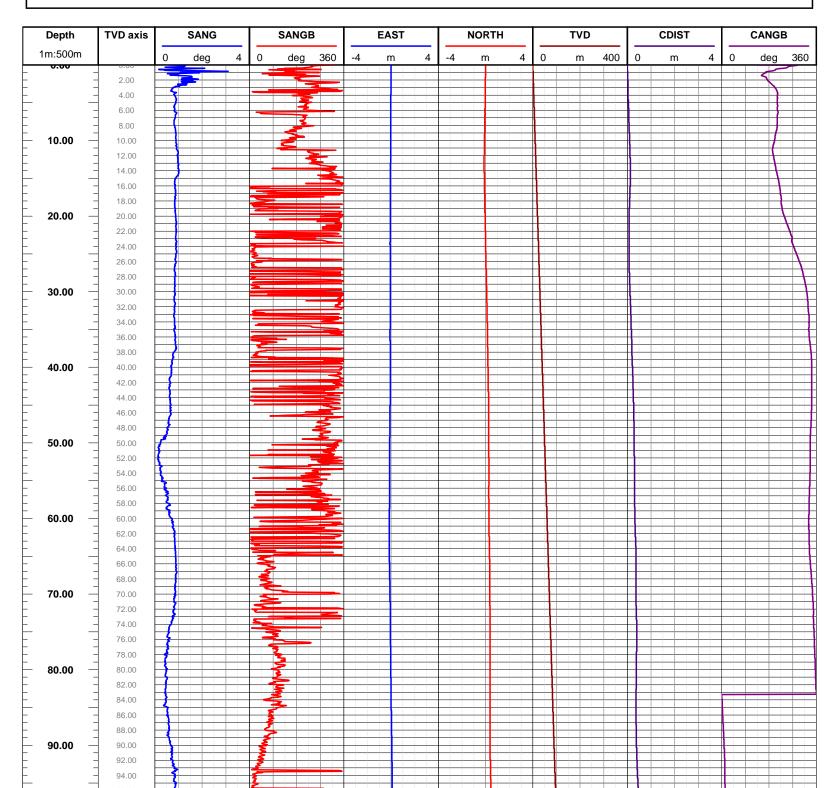
ALL CO-ORDINATES ARE PRESENTED ORIENTED TO TRUE NORTH

MAGNETIC DECLINATION 1

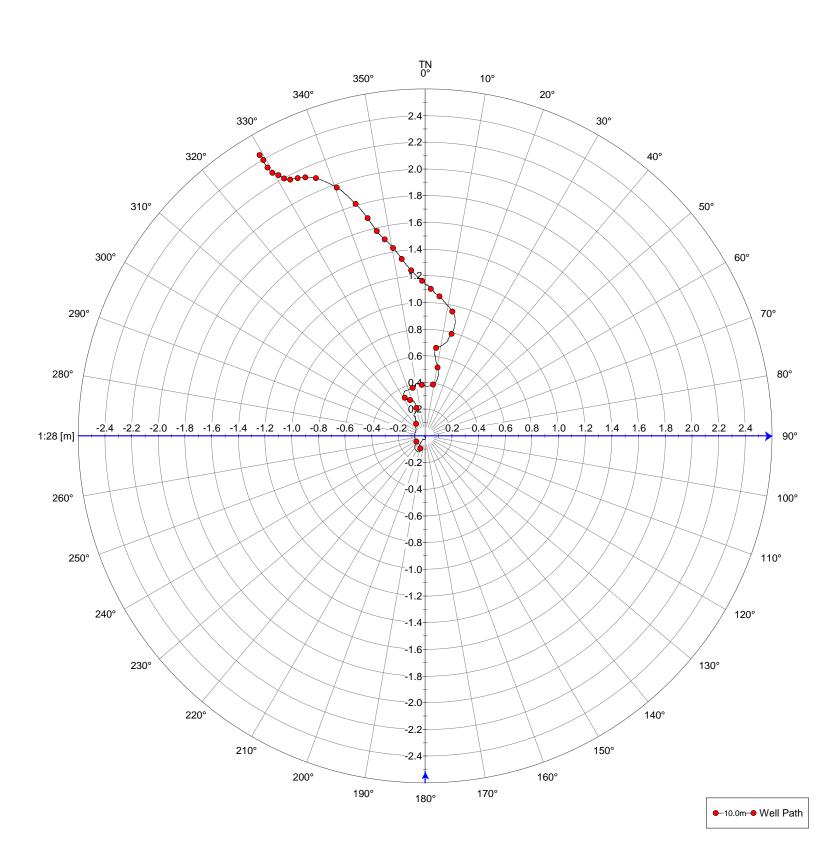
10.83deg

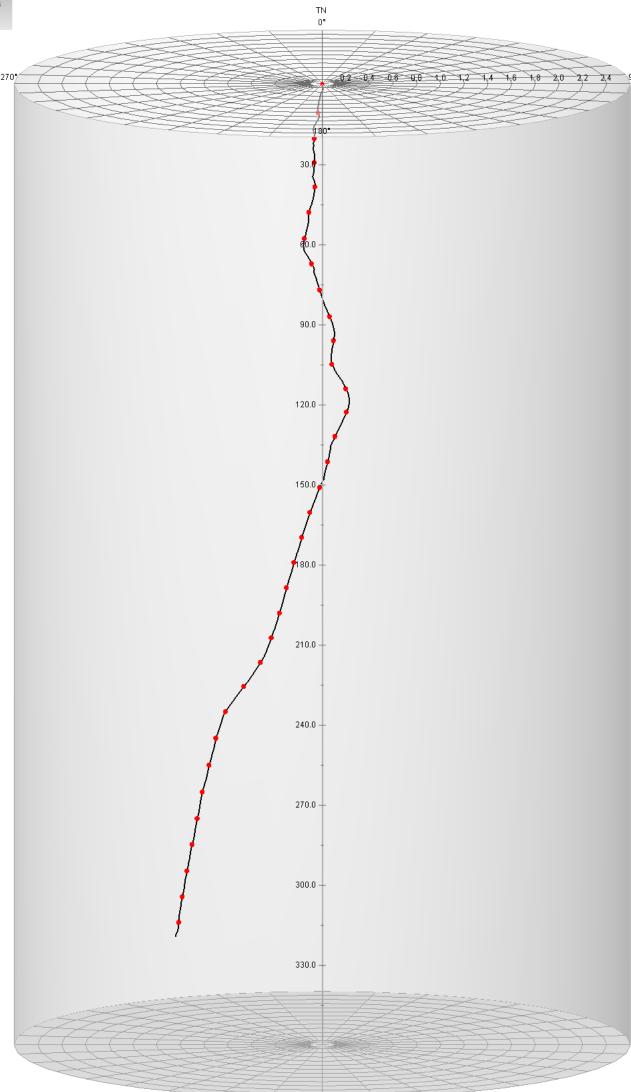
Depth	SANGB	SANG	EAST	NORTH	CDIST	CANGB	TVD
m	deg	deg	m	m	m	deg	m
0.00	342.292	0.592923	0	0	0	0	0
10.00	120.463	0.891468	-0.0358054	-0.0934224	0.100049	200.97	9.99841
20.00	322.922	0.870225	-0.066195	-0.0417546	0.0782638	237.757	19.9971
30.00	359.77	0.832795	-0.0669039	0.0910267	0.112969	323.684	29.996
40.00	352.143	0.692866	-0.0637659	0.208285	0.217827	342.978	39.9949
50.00	322.464	0.233535	-0.114264	0.268015	0.291356	336.91	49.9944
60.00	353.755	0.723622	-0.152129	0.285702	0.32368	331.966	59.9941
70.00	357.546	0.839003	-0.0921692	0.359762	0.371381	345.63	69.993
80.00	93 2124	0.504888	-0.0241605	0.382569	0.383331	356 386	79 9924

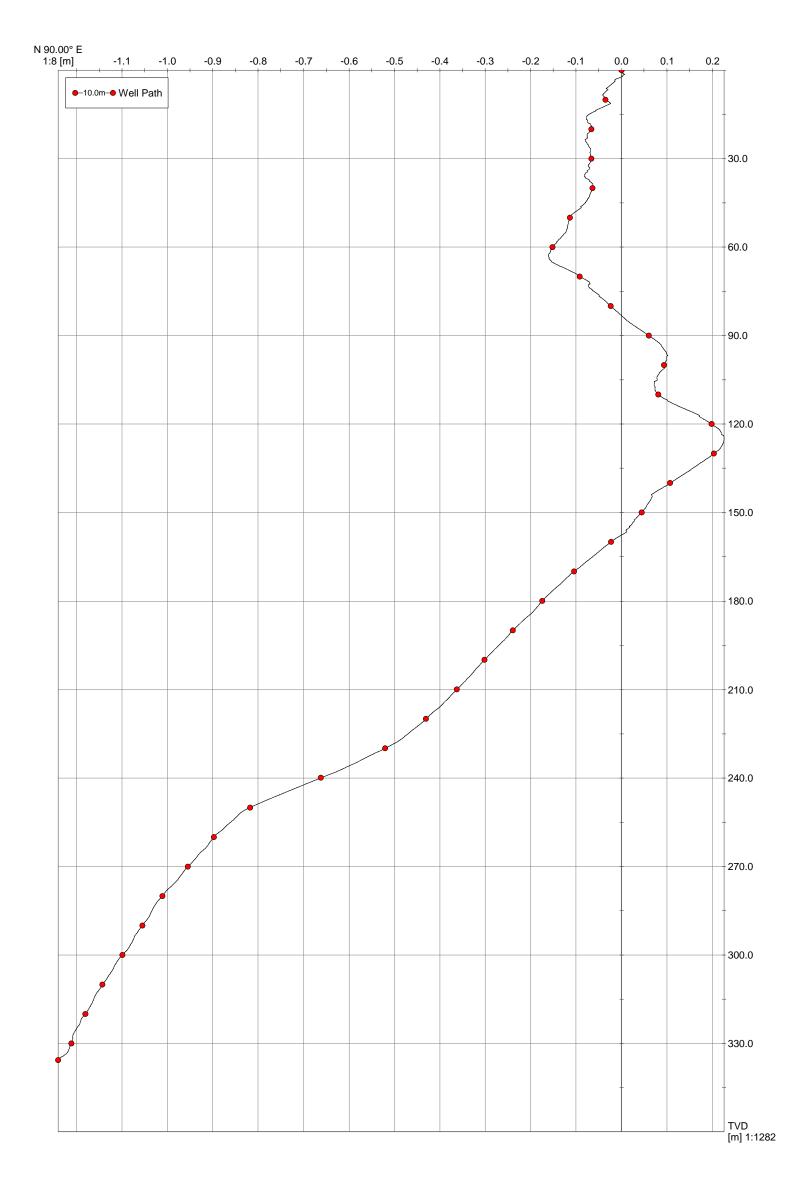
90	.00 59.44	94 0.674608	0.0601602	0.384206	0.388887	8.89929	89.992
10	.00 333.5	0.972142	0.0934653	0.513259	0.521699	10.3206	99.9909
110	.00 42.04	59 0.579074	0.0810954	0.659146	0.664116	7.0139	109.99
120	.00 31.07	93 1.15224	0.19812	0.765666	0.790883	14.5074	119.988
130	.00 339.0	19 0.897865	0.203348	0.932744	0.954652	12.2987	129.986
14	.00 323	6 0.846792	0.106788	1.04522	1.05066	5.83354	139.985
150	.00 308.7	0.505774	0.0437828	1.10292	1.10379	2.27328	149.985
16	.00 315.7	78 0.693601	-0.023692	1.16081	1.16105	358.831	159.984
170	.00 315.7	27 0.68598	-0.105062	1.24104	1.24548	355.161	169.983
180	.00 324.3	0.624414	-0.174964	1.3261	1.33759	352.484	179.983
19	.00 316.8	0.585095	-0.239591	1.40653	1.42679	350.333	189.982
20	.00 315.0	0.503645	-0.302036	1.47222	1.50288	348.406	199.982
210	.00 324.9	31 0.630347	-0.362567	1.53375	1.57602	346.7	209.981
22	.00 324.6	44 0.657277	-0.431037	1.63068	1.68668	345.194	219.981
23	.00 316.4	23 1.00461	-0.521267	1.7386	1.81506	343.31	229.98
24	.00 299.3	74 1.04098	-0.662342	1.86149	1.97582	340.414	239.978
250	.00 282.2	71 0.799298	-0.818106	1.93296	2.09896	337.06	249.976
26	.00 271.	9 0.26362	-0.898363	1.9384	2.13646	335.134	259.976
27	.00 264.0	16 0.379354	-0.955392	1.9309	2.15433	333.674	269.976
28	.00 250.5	0.321622	-1.01142	1.92139	2.17134	332.238	279.976
29	.00 287.9	15 0.281607	-1.05575	1.92873	2.19878	331.305	289.976
30	.00 287	3 0.352516	-1.09964	1.95338	2.24163	330.623	299.976
310	.00 282.4	47 0.272848	-1.14373	1.96991	2.27786	329.861	309.975
32	.00 317.2	0.480369	-1.18105	2.01218	2.33318	329.589	319.975
330	.00 341.6	14 0.481084	-1.21226	2.06668	2.39598	329.605	329.975



DEVIATION PLOT









Well Completion Report



Appendix 13 – Casing Talley Sheets



			Plι	ımb Roa	ad 1	K55			
OCR Name :		Scott Hob	day	DEPTH:	158.00	SHOE AT	156.02	DATE:	7-Feb-17
Joint N	umber		epth		CASING		MA	KE UP TORG	UE
From	То	From	То	Size	Grade	Weight	Maximum	Minimum	Optimum
				7	N-80	23	5530	3320	4420
ITEM	ITEM	LENGTH			COMMENT	S			
NAME	LENGTH	RUN	BOTTOM	YES / NO					
TD	0.40	0.4	156.02						
Shoe	0.40	0.4	155.62		Controlizor	o stan callar m	aid int		
1 Collar	11.93 0.40	12.33 12.73	143.69 143.29		Centralizer	& stop collar m	iia jiit		
2	11.64	24.37	131.65		Centralizer				
3	11.35	35.72	120.30		Ceritializer				
4	11.78	47.50	108.52		Centralizer				
5	11.40	58.90	97.12		Contrailed				
6	11.51	70.41	85.61		Centralizer				
7	11.16	81.57	74.45						
8	11.86	93.43	62.59		Centralizer				
9	11.61	105.04	50.98						
10	11.96	117.00	39.02						
11	11.87	128.87	27.15		Centralizer				
12	11.60	140.47	15.55						
13	11.75	152.22	3.80						
anding JNT	5.75	157.97	-1.95		Landing join	t to be LEVEL	. WITH GROU	ND LEVEL	
	0.00								
	0.00					Total jnts on			
	0.00					Total jnts on			
	0.00					Total jnts to r	un = 13		
	0.00				Dalasta				
	0.00				Baker lock s	shoe,float colla	ar and joint 2		
	0.00								
	0.00								
	0.00								
	0.00								
	0.00								
	0.00								
	0.00								
	0.00								
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	0.00								
	0.00								
	0.00								



WELL NAME: CASING TYPE:

K55 Plumb Road 1 DEPTH: OCR Name: Scott Hobday 642.00 SHOE AT 640.50 DATE: 13-Feb-17

OCR Name :		Scott Hob		DEPTH:		SHOE AT	640.50	DATE:	13-Feb-17
Joint N	umber	De	epth		CASING		MAI	KE UP TORQ	UE
From	То	From	То	Size	Grade	Weight	Maximum	Minimum	Optimum
				4 1/2"	K55	11.6	2250	1350	1800
ITEM	ITEM	LENGTH	Metres off	RUN	COMMENT	S			
NAME	LENGTH	RUN	воттом	YES / NO					
TD			640.50						
Shoe	0.48	0.48	640.02						
loat Collar 1	0.34	0.82	639.68						
1	11.45	12.27	628.23	1	Centralizer	& stop collar m	nid jnt		
2	11.24	23.51	616.99	2	Centralizer	& stop collar m	nid jnt		
loat Collar 2	0.34	23.85	616.65						
3	11.32	35.17	605.33	3	Centralizer				
4	11.65	46.82	593.68						
5	11.57	58.39	582.11	4	Centralizer				
6	11.59	69.98	570.52						
7	11.51	81.49	559.01	5	Centralizer				
8	11.62	93.11	547.39						
9	11.32	104.43	536.07	6	Centralizer				
10	11.47	115.90	524.60						
11	11.43	127.33	513.17	7	Centralizer				
12	11.41	138.74	501.76						
13	11.44	150.18	490.32	8	Centralizer				
14	11.47	161.65	478.85						
15	11.44	173.09	467.41	9	Centralizer				
16	11.45	184.54	455.96						
17	11.48	196.02	444.48						
18	11.11	207.13	433.37	10	Centralizer				
19	11.39	218.52	421.98						
20	11.41	229.93	410.57						
21	11.54	241.47	399.03	11	Centralizer				
22	11.62	253.09	387.41						
23	11.46	264.55	375.95	12	Centralizer				
24	11.16	275.71	364.79						
25	11.27	286.98	353.52	13	Centralizer				
26	11.44	298.42	342.08	14	Centralizer				
27	11.44	309.86	330.64						
28	11.59	321.45	319.05	15	Centralizer				
29	11.44	332.89	307.61						
30	11.41	344.30	296.20	16	Centralizer				
31	11.31	355.61	284.89	17	Centralizer				
32	11.44	367.05	273.45						
33	11.44	378.49	262.01	18	Centralizer				
34	11.44	389.93	250.57						
35	11.42	401.35	239.15	19	Centralizer				
36	11.44	412.79	227.71						
37	11.13	423.92	216.58	20	Centralizer				
38	11.44	435.36	205.14						
39	11.59	446.95	193.55						
40	11.46	458.41	182.09	21	Centralizer				
41	11.39	469.80	170.70						
42	11.60	481.40	159.10	22	Centralizer				



		ımb Roa	nd 1	K55					
OCR Name :		Scott Hob	day	DEPTH:	642.00	SHOE AT	640.50	DATE : 13-Feb-17	
	lumber		epth		CASING	•	MAI	KE UP TORG	UE
From	То	From	То	Size	Grade	Weight	Maximum	Minimum	Optimum
				4 1/2"	K55	11.6	2250	1350	1800
ITEM	ITEM		Metres off		COMMENT	S			
NAME	LENGTH	RUN		YES / NO					
43	11.29	492.69	147.81						
44	11.41	504.10	136.40	23	Centralizer				
45	11.30	515.40	125.10						
46	11.46	526.86	113.64	0.4	0 - 1 - 1				
47	11.03	537.89	102.61	24	Centralizer				
48 49	11.30 11.14	549.19 560.33	91.31 80.17						
50	11.14	571.78	68.72	25	Centralizer				
51	11.43	583.20	57.30		Jonnanzen				
52	11.43	594.63	45.87						
53	11.49	606.12	34.38	26	Centralizer				
54	11.61	617.73	22.77						
55	11.49	629.22	11.28	27	Centralizer				
56	11.11	640.33	0.17						
PUP A	2.00	642.33	-1.83						
	0.00								
	0.00						ocation = 111		
	0.00					Total jnts run			
	0.00				T. C.I.D.	Total jnts left		4	
	0.00				Total Pups (on location = 1	0 Total to run =	= 1	
	0.00								
	0.00								
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	0.00								
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84	0.00								
85	0.00								
86	0.00								
87	0.00								
88	0.00								
89	0.00								



			umb Road 2	K55				
	Scott Hob	day	DEPTH:	156.00	SHOE AT 154.75		DATE:	16-Feb-17
umber		_		CASING		MAI	KE UP TORG	UE
То	From	То	Size	Grade	Weight	Maximum	Minimum	Optimum
			7	N-80	23	5530	3320	4420
				COMMENT	S			
LENGIH	RUN		YES/NO					
0.40	0.4							
			4	Controlizor	o stan caller n	aid int		
			1	Centralizer	x stop collar fi	iia jiit		
			2	Controlizor				
				Ceritializer				
			3	Centralizer				
				Contrailed				
			4	Centralizer				
			-					
			5	Centralizer				
	105.72	49.03						
11.72	117.44	37.31						
11.93	129.37	25.38	6	Centralizer				
11.75	141.12	13.63						
11.48	152.60	2.15						
3.85	156.45	-1.70		Landing join	t to be 0.15m	Below GROUN	ID LEVEL	
				Baker lock s	snoe,float colla	ar and joint 2		
0.00								
0.00								
0.00								
0.00								
0.00								
0.00								
0.00								
	ITEM LENGTH	ITEM LENGTH RUN	ITEM LENGTH RUN SOTTOM	To From To Size 7	To From To Size Grade N-80	To	ITEM LENGTH RUN BOTTOM YES / NO Centralizer Size Grade Weight Maximum Size Size Grade Weight Maximum Size Size Grade Weight Maximum Size Size Grade Weight Maximum Size	To From To Size Grade Weight Maximum Minimum Mi



WELL NAME: CASING TYPE:

Plumb Road 2 **K55** 387.00 Scott Hobday DEPTH: 388.00 **SHOE AT** DATE: 17-Feb-17 OCR Name: CASING MAKE UP TORQUE Joint Number Depth То From Size Grade Weight Maximum Minimum From Τо Optimum 4 1/2" K55 1800 11.6 2250 1350 ITEM **ITEM** LENGTH **Metres off** RUN **COMMENTS** NAME **LENGTH** RUN BOTTOM YES / NO TD 387.00 Shoe 0.48 0.48 386.52 0.82 loat Collar 0.34 386.18 PUP A 2.02 2.84 384.16 Centralizer & stop collar mid jnt PUP B 6.02 8.86 378.14 loat Collar 0.34 9.20 377.80 2 366.19 11.61 20.81 Centralizer 2 11.46 32.27 354.73 3 Centralizer 11.43 343.30 3 43.70 4 11.49 55.19 331.81 4 Centralizer 5 11.61 66.80 320.20 6 11.45 78.25 308.75 5 Centralizer 11.40 297.35 6 89.65 Centralizer 8 11.59 101.24 285.76 7 9 11.29 112.53 274.47 Centralizer 262.83 10 11.64 124.17 11 11.34 135.51 251.49 8 Centralizer 12 11.43 146.94 240.06 13 11.29 158.23 228.77 14 11.49 169.72 217.28 9 Centralizer 15 181.16 205.84 11.44 11.65 192.81 194.19 16 17 11.44 204.25 182.75 10 Centralizer 18 11.43 215.68 171.32 19 11.50 227.18 159.82 11 Centralizer 20 11.42 238.60 148.40 12 Centralizer 11.59 21 250.19 136.81 22 11.59 261.78 125.22 23 11.61 273.39 113.61 13 Centralizer 24 11.61 285.00 102.00 90.39 25 11.61 296.61 26 11.45 308.06 78.94 14 Centralizer 27 11.58 319.64 67.36 28 11.43 331.07 55.93 15 29 11.42 342.49 44.51 Centralizer 11.59 354.08 32.92 30 31 11.45 365.53 21.47 16 Centralizer 32 11.40 376.93 10.07 33 17 11.44 388.37 -1.37Centralizer 0.00 Total jnts on location = 550.00 Total jnts run = 33 0.00 Total jnts left = 22 0.00 Total Pups on location = 10 Total to run = 2 0.00 0.00 0.00



			Plι	ımb Roa	nd 3	K	55		
OCR Name :		Scott Hob	day	DEPTH:	156.00	SHOE AT	155.16	DATE:	19-Feb-17
	lumber		epth		CASING			KE UP TORG	
From	То	From	To	Size	Grade	Weight	Maximum	Minimum	Optimum
				7	N-80	23	5530	3320	4420
ITEM	ITEM	LENGTH	Metres off	RUN	COMMENT	S			
NAME	LENGTH	RUN	BOTTOM	YES / NO					
TD			155.16						
Shoe	0.40	0.4	154.76						
1	11.75	12.15	143.01	1	Centralizer a	& stop collar m	nid jnt		
Collar	0.40	12.55	142.61						
2	11.64	24.19	130.97	2	Centralizer				
3	11.74	35.93	119.23						
4	11.79	47.72	107.44	3	Centralizer				
5	11.77	59.49	95.67		0 . "				
6	11.99	71.48	83.68	4	Centralizer				
7	11.64	83.12	72.04	5	Controlina				
<u>8</u> 9	11.79 11.62	94.91 106.53	60.25 48.63	5	Centralizer				
10	11.62	118.28	36.88						
11	11.75	129.93	25.23	6	Centralizer				
12	11.38	141.31	13.85	0	Cermanzer				
13	11.65	152.96	2.20						
PUP A	3.85	156.81	-1.65		Landing join	nt to be 0.15m	Below GROUN	ID I EVEL	
1 01 7	0.00	100.01	1.00		Landing join	11 10 00 0.10111	Dolow Cittoon	ID LL VLL	
	0.00					Total jnts on	location = 14		
	0.00					Total ints on			
	0.00					Total ints to r			
	0.00				Total ints let	ft on location =			
	0.00				Baker lock s	shoe,float colla	ar and joint 2		
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			Plu	ımb Roa	ad 3	K	. 55		
OCR Name :		Scott Hob	bday DEPTH: 3		336.00	SHOE AT	336.00	DATE:	21-Feb-1
Joint N	umber		epth		CASING		MA	KE UP TORQ	UE
From	То	From	То	Size	Grade	Weight	Maximum	Minimum	Optimum
				4 1/2"	K55	11.6	2250	1350	1800
						_			
ITEM	ITEM	LENGTH		RUN	COMMENTS	S			
NAME	LENGTH	RUN	BOTTOM	YES / NO					
TD	0.40	0.40	336.00						
Shoe	0.48	0.48	335.52						
loat Collar 1	0.34	0.82	335.18	4	Controlizor	oton collor n	aid int		
1	11.61	12.43	323.57	1	Centralizer	& stop collar n	iia jiit		
loat Collar 2	0.34 11.46	12.77 24.23	323.23 311.77	2	Centralizer				
3	11.46	35.66	300.34	3	Centralizer				
4	11.43	47.15	288.85	<u> </u>	Cermanzer				
<u>4</u> 	11.49	58.76	277.24	4	Centralizer				
6	11.45	70.21	265.79	4	Centralizer				
7	11.45	81.61	254.39	5	Centralizer				
8	11.40	93.20	242.80	- 5	Cermanzer				
9	11.29	104.49	231.51	6	Centralizer				
10	11.64	116.13	219.87	0	Cermanzer				
11	11.34	127.47	208.53						
12	11.43	138.90	197.10	7	Centralizer				
13	11.43	150.19	185.81		Cermanzer				
14	11.49	161.68	174.32		1				
15	11.49	173.12	162.88	8	Centralizer				
16	11.44	184.77	151.23	9	Centralizer				
17	11.44	196.21	131.23	9	Cermanzer				
18	11.43	207.64	128.36						
19	11.43	219.14	116.86	10	Centralizer				
20	11.42	230.56	105.44	10	Cermanzer				
21	11.59	242.15	93.85						
22	11.66	253.81	82.19	11	Centralizer				
23	11.31	265.12	70.88	11	Cermanzer				
24	11.18	276.30	59.70						
25	11.31	287.61	48.39	12	Centralizer				
26	11.26	298.87	37.13	12	Ochtranzer				
27	11.49	310.36	25.64						
28	11.40	321.76	14.24	13	Centralizer				
PUP C	2.02	323.78	12.22		Sommanzon				
29	11.32	335.10	0.90	14	Centralizer				
	0.00	330.10	3.00	.,	55.14.4.1201				
	0.00					Total jnts on	location = 32		
	0.00					Total ints run			
	0.00					Total ints left			
	0.00						3 Total to run =	1	
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	0.00								
	0.00								