SURAT BASIN
ATP 683P
Glenburnie-10
Walloon CSG
Well Proposal

Approvals:

Exploration Department: _____ _____

(Signed in order to verify the Drill Plan)

Drilling Department:: _____ _____

(Name) (Signature)

Max Collett
(Graduate Geologist)

arrow energy
go further

September 2009

GPO Box 5262
Brisbane QLD 4001
Australia
Tel: +61 (07) 3105-3400
Fax: +61 (07) 3105-3401
mailto:info@arrowenergy.com.au
www.arrowenergy.com.au

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1. SUMMARY / SPEC CARD

Well Name:	**Glenburnie-10**
Well Type:	Stratigraphic Appraisal Hole
Tenure:	ATP 683P
Tenure Holder:	Arrow Energy Limited
Operator:	Arrow Energy Limited
Other Participants:	Shell CSG Australia
Map Sheet:	Kurrawa Creek 1:25,000 (9142-42) Millmerran 1:100,000 (9142) Dalby 1:250,000 (SG56-13)
Latitude/Longitude:	*27° 43' 17.41" S* *151° 6' 3.5227" E* (GDA 94, Zone 56)
Easting/Northing:	*312 786 E* *6 932 204 N* (GDA 94, Zone 56)
Elevation:	395m
Landholder:	Neil & Margret Cameron (07) 4668 0248 0427 680 248
Nearest Town:	Cecil Plains (23.15km NW)
Nearest Road:	Millmerran Cecil Plains Rd

Directions to proposed drill sites (see Figure 1**):**

Nearest Wells:	Glenburnie-2 (4km N) Glenburnie-1 (4.8km NE) Glenburnie-13 (5.4km SE)
Surface Casing Depth:	170m
Main Target:	Walloon Coal Measures
Estimated Total depth:	470m
Net Coal thickness expected:	25m
Well Abbreviation:	GB-10

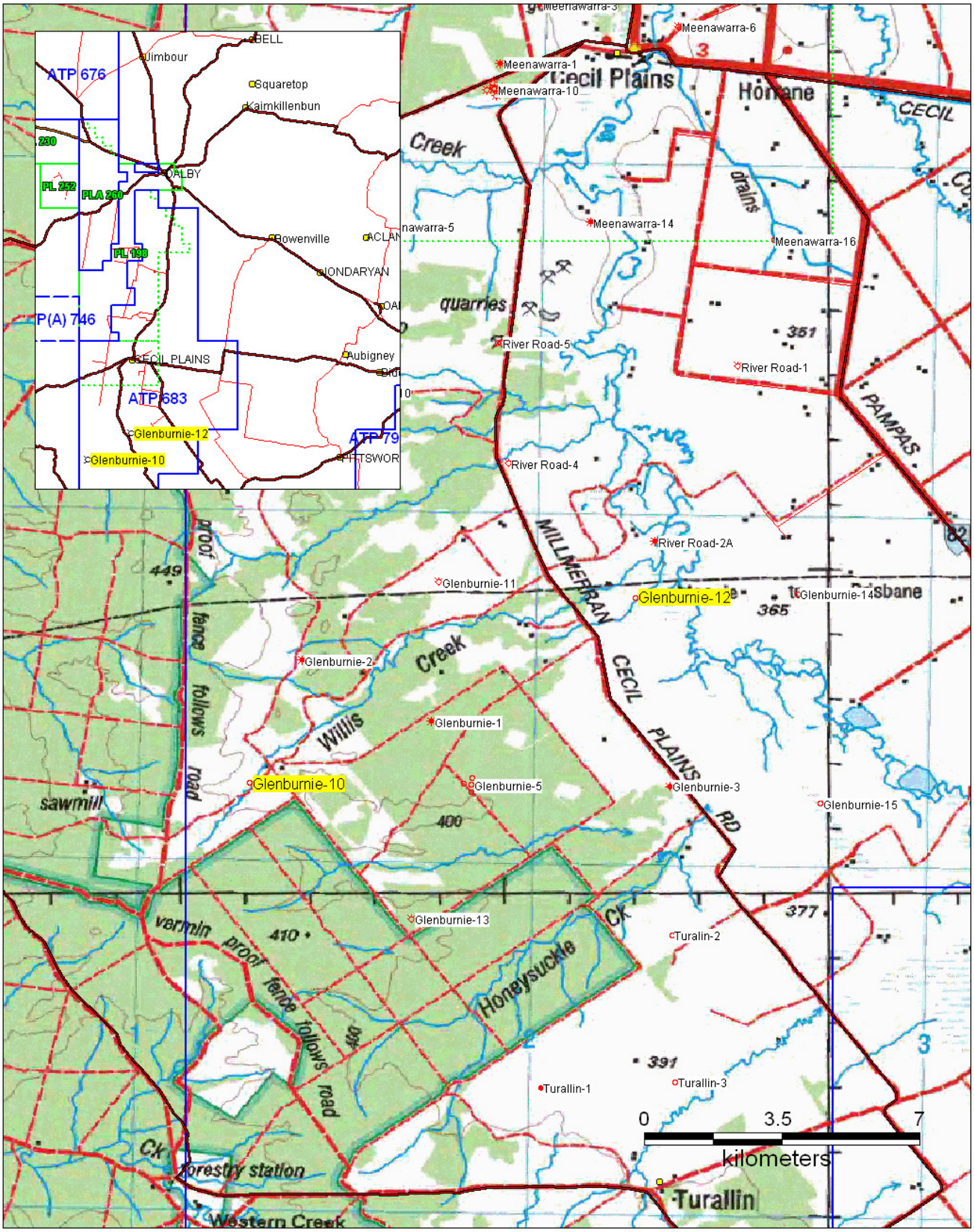

Figure 1: Regional location map

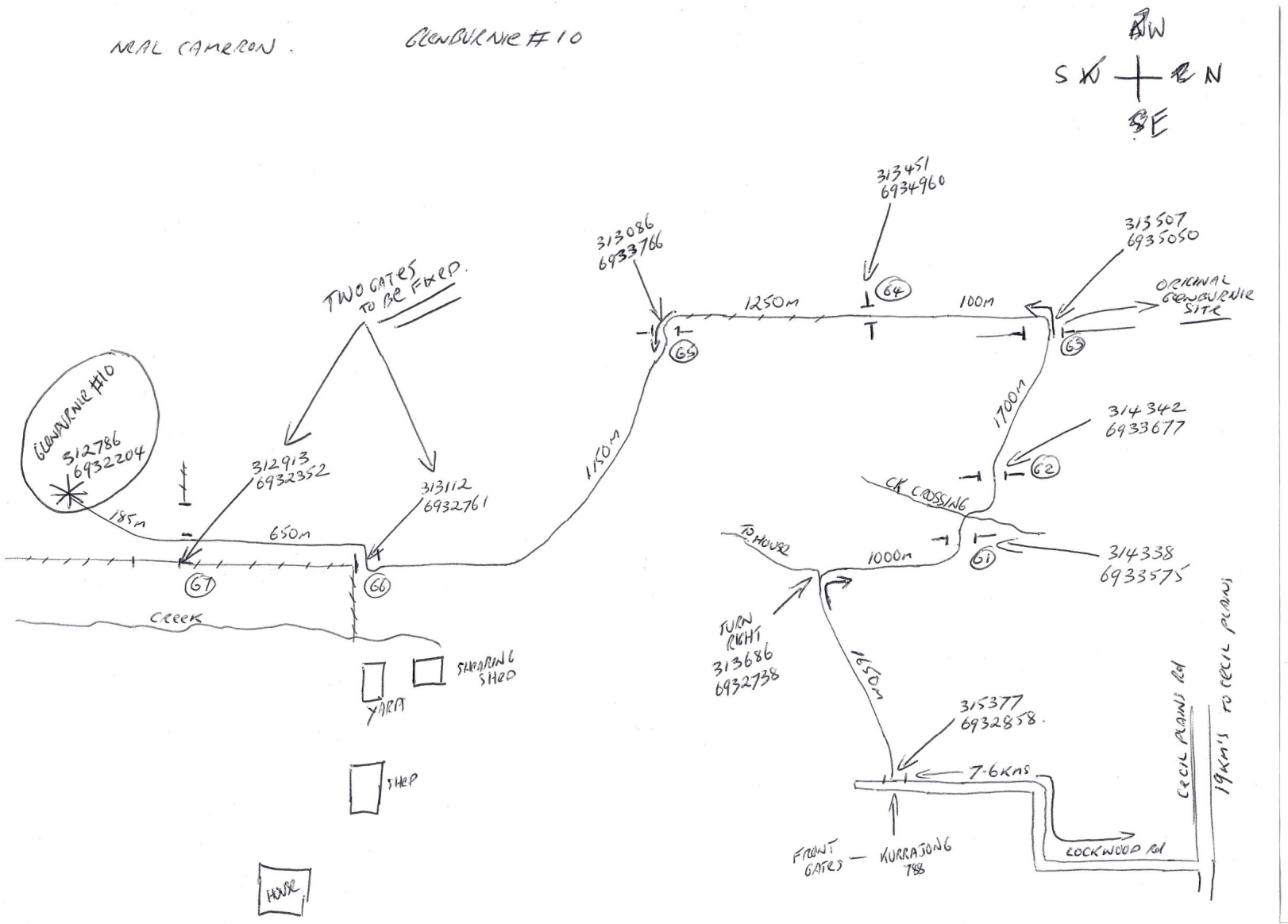

Figure 2: Mud map

2. GEOLOGY

2.a. Previous Exploration

Glenburnie-10 lies within the Millmerran Block the southern most block of ATP683. CSG exploration within the Millmerran block began with the Glenburnie-1 core hole and Bora Creek-1 chip hole in 2003 and 2001 respectively. This initial exploration was followed by a series of core holes including Glenburnie-2,3,Bora Creek-2,4 & Turalin-1. These core holes define gas contents, coal thickness & coal permabilities across the block. Following promising results in the Glenburnie area a series of perm tested chip holes was proposed. Glenburnie-10 is a part of this program which also includes the wells GB-10,12,13,14,15 and Turalin-2,3,4.

2.b. Reasons for Drilling

Glenburnie-10 is part of the Millmerran stratigraphic drill hole program. The purpose of the program is to further prove coal continuity and coal permeability parameters in the northern portion of the Millmerran block. The program will also expedite reserve certification in the area.

2.c. Predicted Section

Glenburnie-10 will spud into tertiary alluvium and soil (expected to be up to 20m thick based on thicknesses observed in Glenburnie-1 and River Road-4).

Interbedded silts and sands of the Kumbarilla beds (Springbok SST) may be intersected from the base of Alluvium to the top of the Walloon Coal measures.

The top of the Walloon Coal Measures are expected at 150m. A Walloon Coal section consisting of the Macalister to Eurombah coal groups is expected

The well is to TD in the Eurombah Formation. TD is to be at least 90m past the last intersected coal seam.

Predicted coal seam group depths are shown in Table 1 and graphically in Figure 3. Further information on local stratigraphy can be found in section 4b.

Formation		Age	TOP (mMD)	Notes
Alluvium		Recent	0	
Springbok		Mid Jurassic	20	
Walloon Coal Measures	Macalister	Mid Jurassic	150	
	Wambo	Mid Jurassic	155	
	Iona	Mid Jurassic	200	
	Argyle	Mid Jurassic	230	
	Taroom	Mid Jurassic	300	
	Condamine	Mid Jurassic	380	
Eurombah		Mid Jurassic	405	

Table 1: Predicted Formation Tops

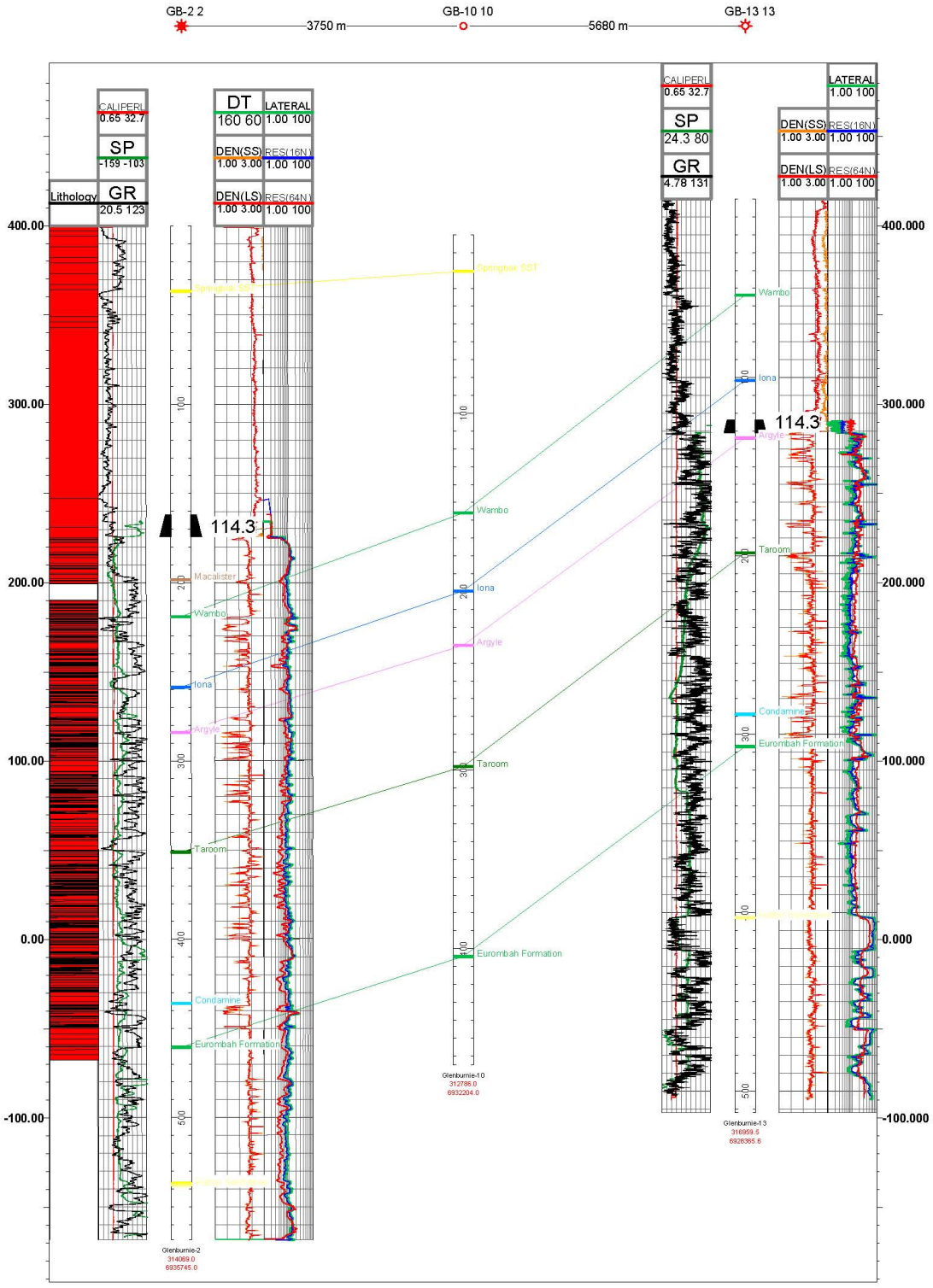

Figure 3: Predicted section

2.d. Evaluation and Sampling Program

- Continuous gas monitoring and recording is to be undertaken utilising a Q-RAE gas detector on the blue line or agitator in the mud stream.
- Cuttings samples are to be taken every 3m for the entire hole. Prior to setting surface casing, 3m samples may be grouped to 6m intervals for chip trays. Lithology descriptions though should be taken on a 3m basis thought-out the hole. Chips will be washed and dried prior to sampling in plastic cuttings trays.
- Water and gas samples will be taken from any water and/or gas flows intersected.
- DST tests may be run after the drilling rig has been released from site. This work is also subject to final results.
- Coal Seam Wireline Services will run a suite of Density; Gamma; Caliper; resistivity; deviation; and temperature measurements on the well at TD. The sample interval for the logs should be submitted at a .01cm increment for the las files. There is also an option to run a sonic tool and acoustic scanner if appropriate.
- DSTs tests as required will be run by either Arrow's DST rig or Stratatek/Multiphase testing after drilling is complete.

2.e. Reporting

The approved daily report, downhole file and gas data is to be sent daily to

Caoilin Chestnutt:	cchestnut@arrowenergy.com.au
Duncan Cumming	dcumming@arrowenergy.com.au
Justin Gorton	jgorton@arrowenergy.com.au
Scott Parkins	sparkins@arrowenergy.com.au
Nick Oberhardt	noberhardt@arrowenergy.com.au
Brad Law	blaw@arrowenergy.com.au
Mark Austin	maustin@arrowenergy.com.au

3. DRILL PLAN

3.a. Drilling Procedure / Hole Design

The following is a guide for drilling Glenburnie-10. The actual work carried out may be contingent on the results during drilling and any subsequent special instructions. The well design is shown diagrammatically in Figure 4. In the absence of any special instructions, use the guide below.

Drilling programme is as follows:

- Read and understand risk assessment presented in Appendix 1.
- Site preparations, including mud overflow pits, a flare pit and cellar, as required by drilling rig. Ensure that the flare pit is a minimum distance of 30m from the well. Site offices and parking areas should also be 30m from the well.
- Mobilisation of drilling rig, necessary equipment and personnel to the well site.
- Establishment of all equipment.
- Drilling contractor and Drilling Supervisor to complete Pre Drilling checklist (Form: 99-H-CHK-0024) and Drilling WellSite Handover Form.
- Complete Pre-Spud checklist (Checklist: 99-H-CHK-0015)
- Drill 200mm (7 7/8") hole and set 168.3mm (OD) x 4.8mm Wt conductor as required (i.e. ± one 6m length). *(Casing Specs Make: steel, Grade: API 5LB, OD: 168.30mm, ID: 155.58mm, WT: 12.72mm, Weight: 25.55kg/m)*
- Drill 146mm (5 ¾") hole to casing shoe (see Well card for depth). Ensure that the casing shoe is set in competent formation and at least 10m into the Walloon coal measures (to be decided by wellsite geologist in consultation with Arrow on call geologist).
- Run 114.3mm (OD) X 6.0mm Wt threaded surface casing (6.0mm wall thickness – if threaded casing is unavailable, welded may be used provided a qualified boiler-maker is used). *(Casing Specs Make: steel, Grade: API 5LB, OD: 114.30mm, ID: 102.3mm, WT: 6mm)*
- Cement with minimum 50% excess cement and a 15m cement plug (excess to be increased if hole conditions are poor). Cement slurry is to be mixed at the ratio of one 40kg bag of GP and/or builders cement to 25L of water and have a measured S.G. of no less than 1.65, once cement is

mixed and density checked, add 1.5% (based on dry cement weight) Daraceel or Mira 55 accelerator. Mix for ~2mins and pump in hole immediately.

- Install well head/flange for the BOP.
- Allow cement to set for minimum 8 hours before testing the BOP.
- After 4 hours top up cement job if necessary.
- After top-up job has set for a minimum of 4 hours, equip well with blow-out prevention devices and a flare line on the 114mm casing string.
- Pressure test BOP system to 300PSI and hold for 5 mins, then pressure up to 800PSI and hold for 10 mins (casing burst pressure is 1390PSI, therefore do not exceed 1200 PSI under any circumstances). Maximum acceptable pressure loss is 20%. The operator of the BOP must be ticketed, and must be witnessed by the Arrow site representative. Arrow BOP test record to be completed and filed. Results of test must be recorded in daily report.
- At all times while drilling below surface casing the driller operating the rig must hold a current BOP ticket.
- Mix mud (see Drilling fluid section for details).
- Setup mud/gas detection system utilising an agitator in the mud stream.
- Drill out cement from surface casing.
- Drill with 96mm (or similar) PCD bit to TD (see well card, page-3 for depth)
- At TD, flush hole making sure all cuttings are out and the hole is clean. A wiper trip may be necessary if hole conditions are poor.
- Run wireline logs.
- Flush hole and fill well with clean, preferably formation, water. A KCL mix may be used to stabilize hole while wireline logging and in suspension until DST testing. No drilling mud's are to be left down hole once rig leaves site.
- Cap well with a 2" ball valve and rig down.
- Well to be re-entered with a DST rig for testing subject to final results.
- Well to be converted to a monitoring bore subject to final results.

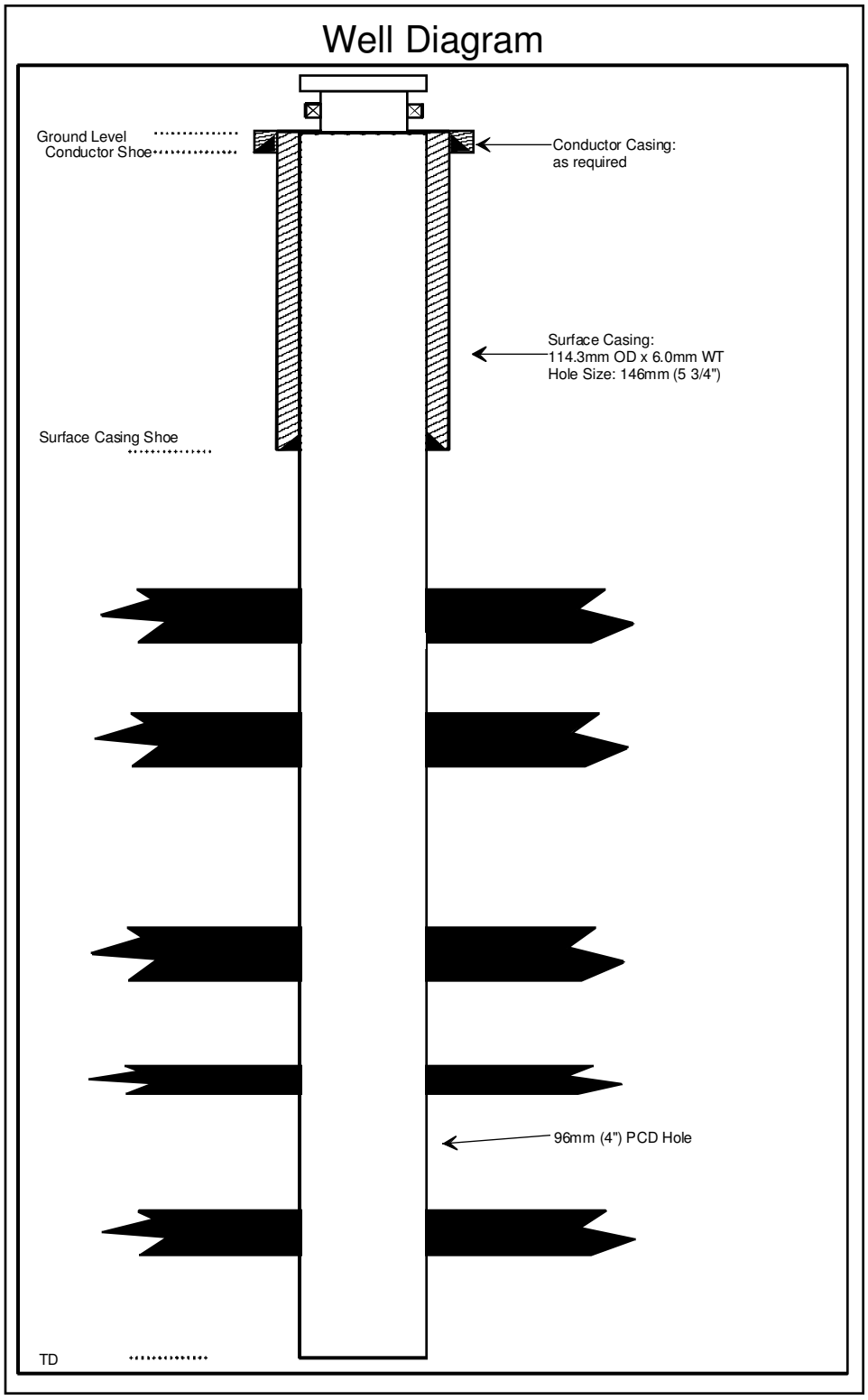

Figure 4: Well Design

3.b. Drilling Fluid

The surface hole is to be drilled on KCL mud with polymers as required.

The 96mm section will be drilled on water with added KCL/Clay Master. A constant 5% KCl mixture should be maintained throughout the well to control swelling clays and keep hole in good condition.

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Polymers may be used if hole conditions deterate. The Polymer that may be used for the 96mm section is Niff 20. Nif 20 should be added at a rate of 4-8Kg per 1000L of sump water. Mud viscosity should not exceeded 30sec/l due to the addition of polymers. Prior approval from the arrow drilling supervisor must be given before using polymers.

Potassium Chloride - Metric Units

Specific Gravity	Density (lb/gal)	KCl (% wt)	KCl (lb/bbl)	Water (m^3/m^3)	KCl (kg/m^3)	TCT °C
1.003	8.3	0.5	1.6	0.9983	4.6	0
1.010	8.4	1.6	5.5	0.9942	15.7	-1
1.020	8.5	3.1	11.1	0.9882	31.7	-2
1.030	8.6	4.7	16.8	0.9820	47.9	-2

KCL % vs mud weight.

Addition Rate		
KCL **Claymaster (liquid KCL)**	add to a ratio of 5% 4.5-5L / 1000L of sump water	
NIF 20 (polymer)	can use 4-8 kg per 1000L of sump water	mud viscosity is not to exceed 30sec/l

Approved Arrow mud additives and addition rates

The indiscriminate or over use of drilling additives can result in formation damage. Coal formation damage often results in poor permeability measurement from Drill Stem Tests, a significant piece of data gathered from exploration holes.

4. REGIONAL GEOLOGICAL SUMMARY

4.a. Regional Surat Basin

The Surat Basin is a large intracratonic basin of Mesozoic age covering approximately 300,000km^2 of southeastern Queensland and northern New South Wales (Figure 5**Error! Reference source not found.**). The basin forms part of the larger Great Australian Basin (Green at al, 1997), interfingering westward across the Nebine Ridge with the Eromanga Basin, and eastward across the Kumbarilla Ridge with the Clarence-Moreton Basin (Exon, 1976). Basin Blocks consisting of the Central West Fold Belt and the New England Fold Belt limit the basin to the south, while in the north the basin unconformably overlies Triassic and Permian sediments of the Bowen Basin.

The Surat Basin contains up to 2,500m of sedimentary rocks deposited during the later Triassic to Early Cretaceous periods (Figure 6). The succession in the basin consists of five fining-upwards sedimentary cycles dominated by fluvio-lacustrine deposits (Exon, 1976; Exon and Burger, 1981; Day et al, 1983). The lower part of each cycle typically comprises coarse-grained mature sandstone, grading up into more labile sandstone and siltstone, with mostly siltstone, mudstone and coal in the upper part. In the Cretaceous, inundation of the land through an increase in sea level led to deposition of predominantly coastal plain and shallow sediments in two cycles.

Structurally, the Surat Basin is relatively simple, with the area of maximum deposition in the Mimosa Syncline, which overlies the thickest Permian-Triassic rocks in the Taroom Trough of the underlying Bowen Basin (Day et al., 1983). Major faulting within the basin predominantly mirrors basinal boundary faults of the underlying Bowen Basin. There is substantial folding across the basin, which is due to compaction and draping, as well as some rejuvenation of older pre-Jurassic structures and faults. Formations outcrop along the northern erosional boundary and dip gently to the south and southwest at less than 5°.

A simplified stratigraphic section of the Surat Basin is shown in Figure 6. Basin fill started with the Precipice Sandstone, which was overlain by the more silty Evergreen Formation. A renewal of sedimentation laid down the Hutton Sandstone. Above these the Walloon Coal Measures were conformably deposited. Overlying the Walloon Coal Measures with a slight unconformity is the Springbok Sandstone (or Kumbarilla Beds further east). The springbok sandstone is overlain by the Westbourne Formation and Gubbermunda Sandstone. In the study area, the Surat Basin sequence is overlain by tertiary sediments and alluvial deposits.

The Walloon Coal Measures are usually shales, siltstones, and claystones, with fine to medium calcareous sandstones and greywackes. There is also a number of discontinuous coal seams of varying thicknesses present (Gould, 1968). Individual lithologies usually form lenses that are only of limited lateral

extent (Yago et al., 1994), although sand bodies may be quite extensive and thick (up to 30m; Fielding, 1993). Coal bodies are generally sheet-like when viewed locally, but lenticular over wider areas (Yago & Fielding, 1996).

Where unweathered, the Walloon Coal Measures are usually light grey sandstones, siltstones and mudstones. Sandstones are generally fine to medium-grained, poorly-sorted and angular to subrounded. Finer-grained layers usually have a silky to soapy texture, and are poorly laminated. The mudrock units frequently contain nodular masses of siderite (Fielding, 1993).

The base of the Walloon Coal Measures is defined by the first significant coarse quartz sand of the Hutton Sandstone. This is usually indicated on wireline logs by a sharp SP break, and a lesser gamma break.

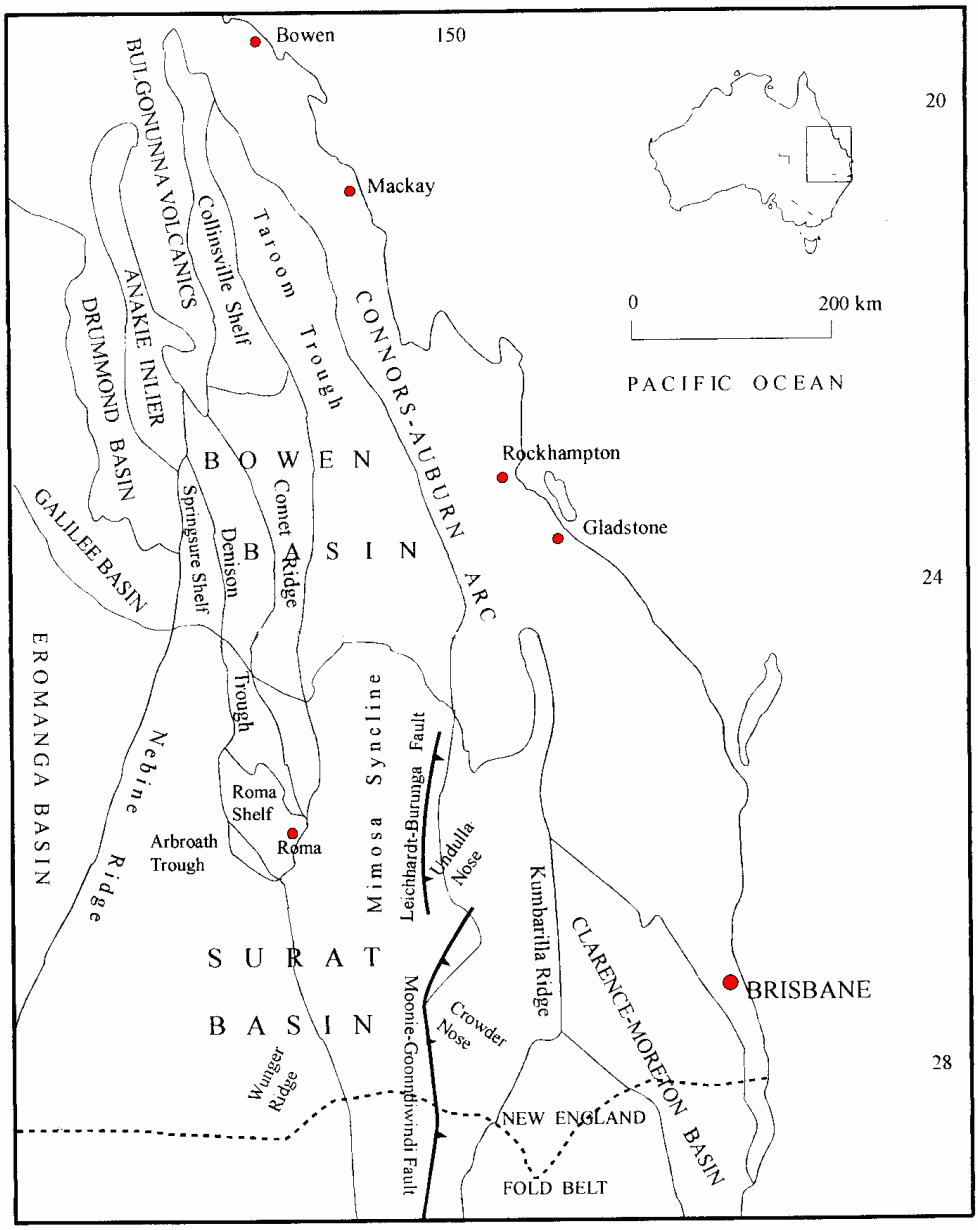

Figure 5 Structural Elements of the Surat Basin
(after Nguyen and Dewhirst, 2002)

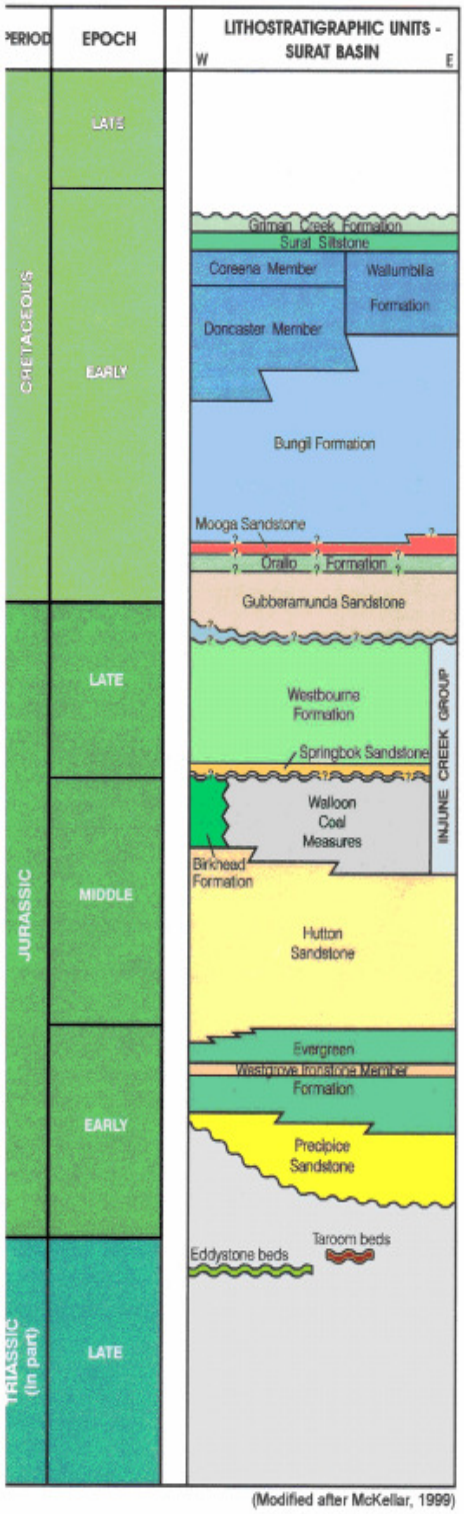

Figure 6 Surat Basin Stratigraphic Section (After McKellar, 1999)

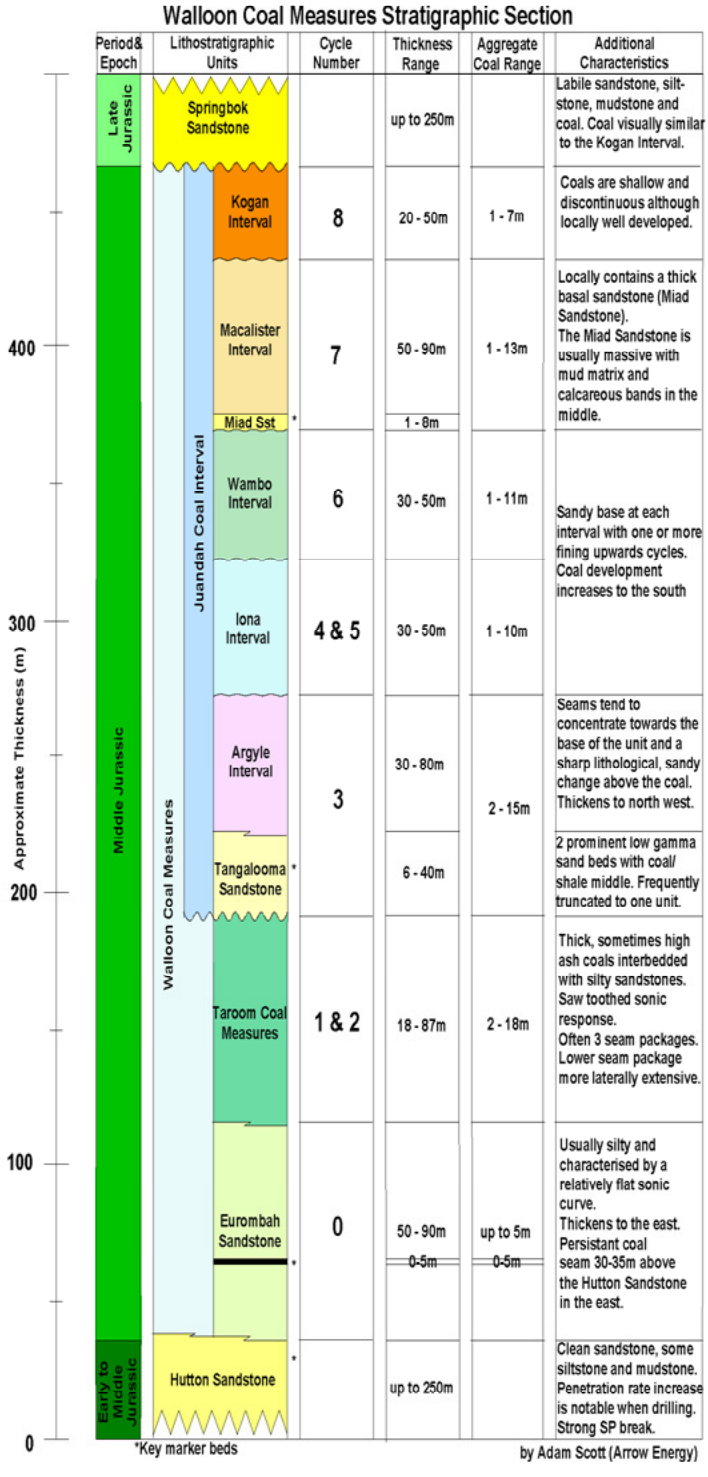

Figure 7: Walloon Stratigraphic Section

4.b. Eastern Surat Walloon Coal Measures

Currently the only CSG target of the Eastern Surat basin are the coals of the Walloon Coal Measures. The Middle Jurassic Walloon Coal Measures form part of the Injune Creek Group (Figure 7) and are well developed throughout the Surat Basin. They rang in thickness from less than 50m to greater than 700m. They comprise of very fine to medium grained, labile, argillaceous sandstone, siltstone, mudstone and coals. These lithologys generally present themselves in the form of a series of fining up sequences usually caped by a coal seam.

The Walloon Coal Measures are divided into two main intervals; the Juandah and Taroom Coal Intervals. The Juandah coal interval is further divided into coal groups or packages. In descending stratigraphic order these are the Kogan, Macalister, Wambo, Iona and Argyle groups.

The Taroom Coal Interval is usually not subdivided but a regionally corelatable seam near its base, the Condamine group, can provide some division.

Each coal group is picked on the basis of grouping together cycles or coal seam packages. For example the Wambo package consists of a number of sub cycles and seams grouped together in order to form the one coal package. The character of each coal group can vary greatly between fields and areas.

As can be seen in Figure 7, the top of the Walloon coal measures is marked by an erosional unconformity (base Springbok). This erosional base in some areas can act to remove most, or all of the Juandah Coal interval. The contact between the Springbok and Walloon Coal Measure can be identified while drilling by: a change in lithology from clean yellow to grey quartz sandstones to interbedded silts, clays, coals, and dark grey clay choked sandstones; a decrease in drilling rate, an increase in mud pressure due to clays on the bit; and increase in background gas in the mud from zero to a few LEL of methane.

The base of the Walloon Coal Measures is marked by the Eurombah Formation. The Eurombah Formation can be identified by massive fine to medium grained lithic/feldspathic sandstones. These sandstones are generally tight, and very slow to drill. In practice the Eurombah Formation will appear much the same as the Walloon Coal Measures in chip samples but can be identified by a lack of coal.

Below the Eurombah Formation lies the Hutton Sandstone. This unit can be identified as a fine to medium grained clean sandstones.

5. CULTURAL HERITAGE REQUIREMENTS

A search has been made of the Department of Natural Resources and Water Cultural Heritage Coordination Unit's Cultural Heritage Database which shows no nearby area, object or evidence of archaeological or historic significance ("Aboriginal cultural heritage").

As this well is within an area where the relevant Aboriginal Parties are the Western Wakka Wakka and Barunggam, it has been agreed with these groups that no clearing of land is to be carried out without an initial survey being conducted by representatives of the group to determine whether there is any Aboriginal cultural heritage. Additionally, during any excavation or trenching work a representative of the group will be present to monitor the progress of these works.

6. ENVIRONMENTAL REQUIREMENTS

Planning the location of a well	Consult site vegetation map from EMP in order to avoid remnant or protected vegetation. In any case minimise vegetative disturbance, while at the same time maximising site safety (i.e. to avoid a bushfire hazard by slashing or grading existing grasses).
Landholder agreement	Check with landholder about the location of the proposed well and access road before construction Has a notification form been completed and sent to landholder?
Cultural Heritage	Check with HSEC Manager if a cultural heritage survey has been completed over the prospective area and check if there are any 'no go areas' or potential issues and if the use of monitors are required during soil excavation.
Remnant Vegetation	When no alternative exists, gain access by ensuring regrowth can occur (i.e. removing vegetation to near ground level so that it can grow back). Avoid pushing trees.
Local Infrastructure	Other infrastructure such as pipelines, roads, houses, power lines, water pipelines, etc. all have statutory design buffer zone limitations. Do not locate the well site within these buffer zones, if in doubt, check with HSEC Manager to ascertain the distances to locate the well site away from other objects.
Site preparation	Remove trip hazards such as logs and fallen branches, you may have to do a light grade of the site to produce a safe surface for walking and handling pipes or other heavy equipment etc.
Flood	Site all facilities above known flood ways and areas, when heavy rains occur assess the site as to access and possible damage that can be caused by vehicles in muddy conditions. Utilise the preparation of all weather roads and hardstands in areas prone to wet conditions.

Surface water flows	Our EPA licence does not allow us to stop surface flows; however it does allow us to divert surface waters. Especially on sloping sites it may be necessary to use the grader to prepare small earth diversion riles across the upper slope in order to direct surface water flows away from the drill site. These riles can be rehabilitated later.
Transport of equipment	Cite all access routes, drill sites, infrastructure and evaporation ponds with regard to minimising vegetative disturbance, and erosion. Cite access tracks along fence lines and avoid steep slopes. Stormwater check riles along and across contours and check banks along steep drainage lines, both run out to sedimentation ponds.
Construction of Pits	When making the pits put the spoil from the pits on the down slope side, on flat areas maintain an even bund wall around the entire pit. The size of the pit should be fit for purpose.
Groundwater control	Create a small earth rile bund wall (mini turkey nest dam) on the down slope side of the well, the size is only limited by the size of the drilling pad area (i.e. fit for purpose).
Saline Bore water	Our licence condition is that this water is to be wholly contained at all times, (i.e. in mud pits/turkey nest's, dam or evaporation pondage, borehole water not to be discharged to creeks or rivers or mix with stormwater unless licensed to do so.
Clearing of vegetation and construction of access roads, laydown pads / drill sites/ temporary ponds	Where practicable, cite all access routes, drill sites, infrastructure and evaporation ponds with regard to minimising vegetative disturbance, and erosion. Cite access tracks along fence lines and avoid steep slopes. Stormwater check riles along and across contours and check banks along steep drainage lines, both run out to Sedimentation ponds.
Fuel Management	Secure all fuel storages within temporary earth bunds, the bunded area must hold at least 110% of the volume to be stored, consider the use of drive-in parking within a bunded area to store fuel on trucks. For minor spills field out the contaminated soil. For major spills follow the incident management procedure as detailed in the OHS manual. Consider security and fire management, refer to HAZCHEM information on MSDS and post appropriate signage.
HAZCHEM handling	Store chemicals as per manufacturer's instruction, refer to MSDS. If spill occurs, make the area safe, using PPE gear contain, and clean up. Refer to MSDS use correct PPE when Handling, remove all waste from site to secure waste facility, consider security and fire issues, refer to HAZCHEM information on MSDS and post appropriate signage.

Management of hydrostatic test fluids and drilling mud's	Locate MSDS near storage area and a copy in site office. Refer to MSDS for emergency directions and the OHS emergency procedure, fill out incident forms, rehabilitate on completion of drilling.
Drilling Mud Rehab	Rehab mud ponds by pushing back retaining walls, and any seed stores in topsoil.
Weed management	When alerted to a weed problem create a drive through wheel wash (using borehole water) located near access to the active wells. If weeds become a problem notify the HSEC coordinator so that a control program can be initiated.
Vandalism	Maintain security procedures, close gates where required, in Controlled access, e.g. erect signage, fence off areas, secure the site at end of work.
Fire Management	Consider the careful sitting and management of campfires (if any), *In the event of a fire contact Landholder and Local Emergency crews* • Maintain cleared land, access roads and fire breaks; • Welding / friction; • Implement SOP for all activities incorporating permits for hot work, specified flammable goods storage areas and procedures; • Conduct Training and awareness courses; • Don't park vehicles with hot exhaust pipes in long grass. Park vehicles on Cleared land, or access roads and maintain bushfire breaks; • Inherently low pressure buried gas pipeline located in a cleared corridor, use flexible joins; • control Human impacts e.g. Smoking, Smoking banned on site (Arrow stds > statutory limits); • Flare designed and engineered to statutory/API requirements, place flair within a cleared buffer zone. • Maintain cleared land, access roads and maintenance of bushfire breaks. • Have a through knowledge of, and ability to contact a local landholder and emergency crews in the area.
Disease Management – rodents & feral animals	Remove all wastes, particularly wet wastes, use an appropriate rubbish receptacle and dispose off site in a registered waste facility.
Cultural Areas	Where identified cultural sensitive areas are "no go" areas, do not disturb, identify the area with tape and discuss at induction.
Waste Management	All wastes will be contained and removed from site by the waste generator.
Conservation Areas - Rare & endangered flora and fauna	These areas are clearly identified in the EMP. *Avoid disturbing these sites.* Avoid potential for fire from exhaust pipes by parking in delegated areas that have no grass. Maintain fire break around fuel dumps, and chemicals, Maintain fire vigilance and workplace safety rules regarding smoking, follow

	OHS Manuals direction regarding fire. Identify the area of concern and declare a no go area, discuss during induction.
Office accommodation and ablutions	During the project the potential exists for disturbance by noise and light when located close to neighbours. If complaints occur keep a record of the complaint and the action taken by you to rectify the situation (i.e. consider the use of noise and light barriers, mufflers, etc).
Public Access	The potential exists for Public disruption and vandalism. A reasonable potential exists for the public and fauna to enter dams. Secure gates as required. Direct public offsite for safety reasons.
Land use	Unless permitted by the landholder, no interference with fence lines or with existing stock gazing patterns will be tolerated. This item will be included in the site induction program. *If a fence has to be broken enquire with landholder first.*
Vistas	Rehabilitate unwanted residual drilling heaps by contouring to the surrounding landscape lines.
Drilling Waste	Rehabilitate unwanted residual drilling heaps by burial and contouring to the surrounding landscape lines.
Potential Explosive Event	Locate drilling rigs within a reasonable safety distance from buildings, (to be assessed on a case by case basis), discuss safety at Induction training, implement SOP for drilling, e.g. blow out preventers and administer OHS procedures.

7. WORKPLACE HEALTH AND SAFETY

7.1 Safety Management Plan and Training
Revise: Tuesday 17th February 2009
AE = Arrow Energy

7.1 Safety Management Plan and Training:
Prior to commencing drilling the contractor is to complete a Arrow Energy Contractor Prequalification, including Safety Management Plan evaluation to ensure that the provisions of Section 675 of the Petroleum and Gas (Production and Safety) Act 2004 are met. Work is not to commence if major deficiencies are identified.

Prior to commencement of the drilling program, the drilling contractor is to provide the AE Group OHS Manager with the following:

- Project Safety Management Plan (the contents of which must comply with AE SMP Evaluation Tool Checklist 99-H-CHK-0023 version 2)
- Drilling Procedures Manual (SOPs, JSEA's etc)
- Risk Management Manual / Register
- MSDS Register with contents consistent with all chemical substances used on site
- List of all employees, sub-contractors and staff anticipated to work on the drilling operation together with legible copies (or scanned onto CD) of evidence that all have been trained in the contractor company's OH&S Safety Management System and Risk Management System (signed certificates etc.), vehicle licenses, industrial inductions, plant and vehicle use training (drilling qualifications/experience, Hiab, crane etc).

Drillers are required to have a current Senior First Aid Certificate (at least one qualified Senior First Aider must be on site each shift).

Drillers are required to have a current BOP introductory training certificate so that at least one BOP qualified driller shall be on the rig for each shift.

Contractor Drilling Supervisors shall be fully BOP trained and certified (Full 5-day BOP course).

The drilling contractor and crew should be aware of the geological risk assessment carried out for this drill hole by AE prior to commencing drilling operations. The risk assessment is found on the last page of this document in Appendix 1.

7.2 Arrow Energy Generic Induction
All Staff and contractors are to complete the Dalby AE Induction prior to entering fields or commencing work. The AE Generic Operational Induction is

to be completed at the Dalby Depot, corner of Bennie and Russell Sts, Dalby. This can be organised by contacting Jason Schroder, John Kilpatrick or Merindah Gough on 07 4662 3999. All visitors to site must complete the contractors site induction and sign the register

For exploration or other project areas, please contact Brisbane office on 07 31053 400, and you will be directed to the project supervisor who will organise a time and location for the induction.

7.3 Drill site Inductions

All AE staff and contractors working on a new drill-workover site must complete the site specific AE Drill - Workover Site Induction. All workers on site must also complete the contractors site specific induction.

All visitors to site must complete the contractor's site induction and sign the Drill – Workover Site Induction Register. These visitors must be supervised at all times by a nominated person by the contractor or a AE staff member when on site.

7.4 Other Site Safety Issues

All contractors are to attend a daily Prestart Safety Meeting to discuss and record daily safety/risk issues and compile required JSEA's or review a relevant SOP, the titles of which are to be documented on the Prestart Meeting form.

Prior to the rig moving on site, the drilling contractor representative and the AE Site Supervisor are to agree on a site layout plan in accordance with both the Contractor's and AE's site requirements. This is to determine the appropriate location for the site office, site entrance, vehicle parking, emergency evacuation muster location and designated smoking area, all to be located outside the 30m ignition exclusion zone.

The Pre-Drilling Site Safety Checklist is to be completed by the AE Site Supervisor prior to the handover of the site. A prespud checklist is to be completed before drilling commences to ensure that site layout is appropriate with safety issues addressed.

All incidents are to be reported to AE. If the incident is reportable under the provisions of Schedule 2 of the P&G Act 2004 or the Workplace Health and Safety Act 1995, it is the responsibility of the drilling contractor to report this incident to the regulating body.

When incidents are notifyable then a formal investigation including a casual factor identification must be carried out as part of the process. (e.g TapRoot Icam)

The following is a list of key instructions that must be followed:

- AE have a total smoking ban within 30m of the rig and in the AE site office on all drill - workover sites while the rig is on site. That means no smoking or ignition sources are allowed within 30m of the rig. All potential ignition sources including cigarettes, matches and cigarette lighters, flash cameras and mobile phones are to be left at the site hut and are not allowed within the 30m ignition exclusion zone.
- Any person caught smoking within the 30m ignition exclusion zone will be dismissed from site. If the removal of a worker from site (for a smoking breach) results in a perceived unacceptable work safety risk, the AE Site Supervisor is authorised to shut down the rig at the Contractors expense until such time as a replacement worker is supplied at site. Smoking is allowed in the designated smoking area only.
- PPE to be worn at all times – including hard hats, steel capped boots, eye protection (safety glasses) and long sleeve shirts and pants. Ear protection is to be worn when working in the vicinity of operating drill rigs and compressors.
- All drill-workover site injuries-incidents are to be immediately reported to **Don Tones the Drilling Safety Administration Coordinator on (4662 3999 or 0429 310 501)** Second contact **David Evans OH&S advisor Drilling & Completions on (3105 3469 or 0415 258 644)** Incidents involving Contractor staff are to be documented immediately by the Contractor on Contractor incident report forms with a copy provided to the AE Site Supervisor who will send a copy to the OHS Manager immediately. The Contractor will be required to report Prescribed Incidents in accordance with Schedule 2 of the Pet and Gas (Prod & Safety) Regs 2004.
- Emergency Evacuation procedures are to be discussed at the first Prestart Safety Meeting to ensure that Contractor staff and AE staff are aware of joint responsibilities in an emergency.
- Emergency response details including emergency contact number lists for all contractors on site must be posted in all site offices or accommodation units.
- Any of the following work performed on site must have a PERMIT TO Work Sheet completed before work commences:- Hot work, Heights, Excavation, Electrical, confined Space.

8. REFERENCES

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APPENDIX 1 – Time Depth Curve

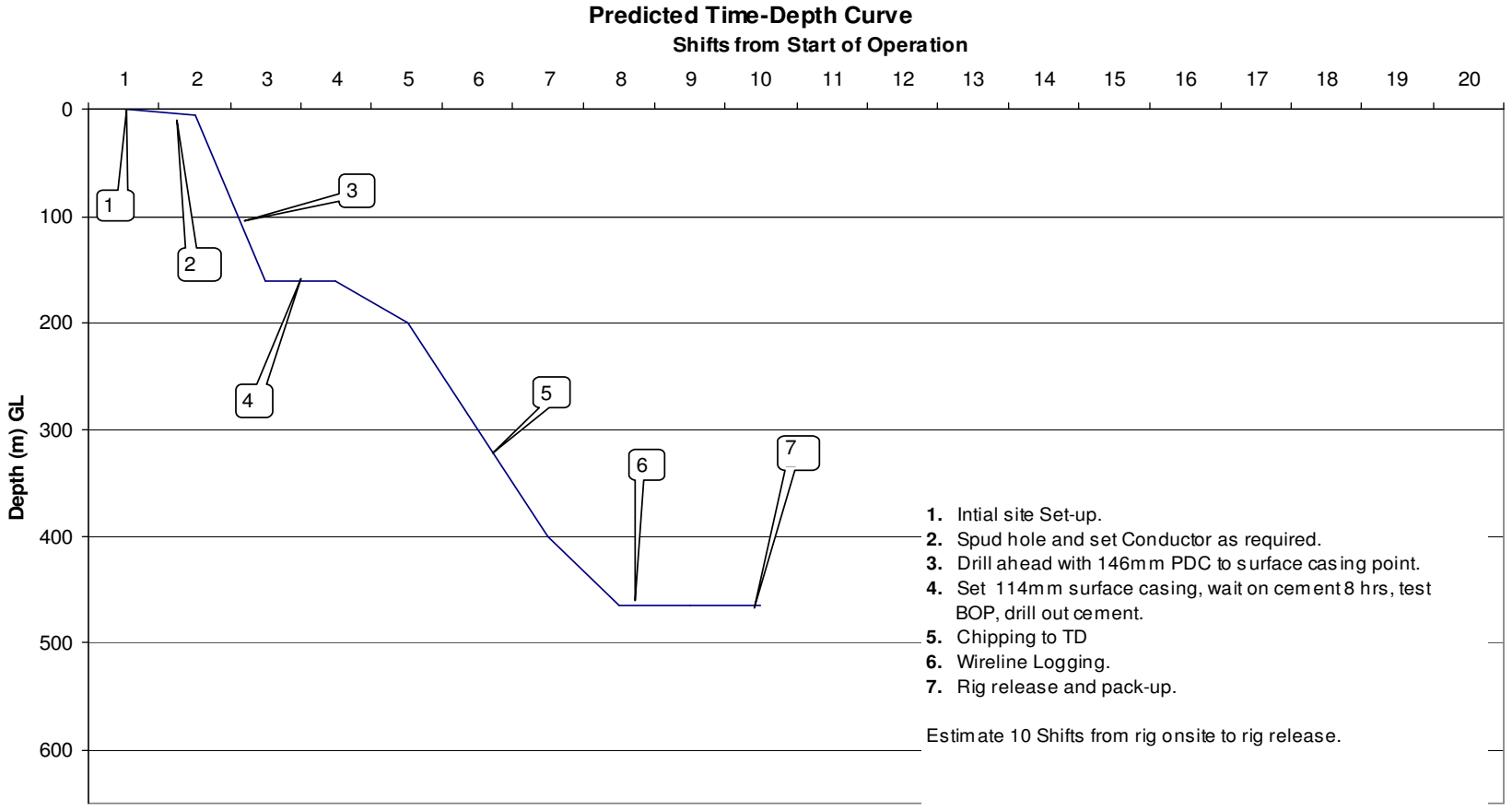

Figure 8: Time-Depth Curve