RG & ME Dearnley

Design & Access Statement including Agricultural Statement

for

Barkhouse Farm, Barkhouse Lane, Shelley, Huddersfield HD8 8LJ

Easting: 421165, Northing: 412384

Prism Agriculture Ltd

Erection of an Agricultural Concrete Circular Slurry Store to supply at least six months storage and associated operational works to support an existing dairy herd enterprise.

March 2024

www.prism-ag.co.uk

INTRODUCTION

1 Prism Agriculture Ltd (Prism Ag) is instructed by Mrs. Janet Cartwright & Mr. Michael Dearnley (the applicants) to provide an Agricultural Statement for the proposed erection of a circular concrete slurry tank to meet the essential need of the applicant's agricultural unit on agricultural land.

2 The appraisal has been undertaken by Mark Yearsley who is an associate of 'Prism Ag.' Mark's specialisms include Slurry Storage and Silage System Design. Mark is also a Professional Member of the Institute of Agricultural Management (PMIAgrM), and a Member of the British Institute of Agricultural Consultants (MBIAC).

3 Throughout his professional career, Mark has managed large dairy farms in the UK and internationally and is now an Agricultural Farm Business Consultant that works in close relationship with 'Prism Ag Rural Planning/Prism Agriculture Ltd.'

4 This Design & Access Statement including an Agricultural Statement for Planning is to accompany a Full Planning Application submitted by Prism Agriculture Ltd to Kirklees Council.

5 Prism Agriculture Ltd has produced a set of plans using calculations generated by the Agriculture and Horticulture Development Board' (ADHB) 'Slurry Wizard' calculator for the production of this Agricultural Statement to accompany the application.

6 A Topographical Survey of the farm infrastructure and proposed siting location was also completed in order to show the existing and proposed levels in relation to the proposal before the Council.

7 Mark Yearsley attended a site visit with the applicants and Tom Warren of Prism Ag on the 12th of March to view the applicant's farm and wider agricultural unit.

BACKGROUND

8 Historically, the applicants father purchased 1.2Ha (3ac) of agricultural land with a house in 1960 and the farm has evolved to become an agricultural unit of some 141Ha (348ac)

9 The applicants, Janet Cartwright and Michael Dearnley are siblings whose business operates as a dairy farming enterprise. The applicant's agricultural unit now comprises some 121Ha (300ac) which is located primarily around Bark House Farm, Shelley (the application site) along with a further 20.2Ha (48ac) of rented agricultural land.

10 Janet & Micheal took over the farm from their father and the family have farmed the site for over 40 years. They farm a Pedigree herd of 300 Meuse Rhine Issel (MRI) cattle + 20 calves and 130 followers, all bred on the farm that produce high milk quality and cream from grazed grass. MRI cattle are a hardy and productive breed which originated in the Netherlands and Germany. In the Netherlands, the Dutch breed was developed in the region of the three rivers from which it gets its name.

11 The cows produce an average of twenty litres of milk per day each (over 220 cows), this increases during the winter to an average of 26 litres of milk per cow, per day. Artificial Insemination (AI) is carried out using MRI sexed semen on replacement heifers and the milking herd. The cattle feed ration during the winter months when they are housed comprises of grass silage, cattle nuts, brewer's grains which are fed adlib once per day.

12 The farm infrastructure comprises 229 cow cubicles, a loose yard for dry cows and youngstock, two x silage clamps and a tandem milking parlour. Fixed equipment comprises a cattle crush, a foot trimming crush and a 24-ton grain silo.

13 The applicant's wider farming business is registered with the Rural Payments Agency (RPA) with Customer Reference Number (CRN): 1103305166, Single Business Identifier (SBI) number:106527524. The applicants County Parish Holding number (CPH) is: 39/344/0240 and the herd number is UK125674 (cattle).

14 The agricultural unit, subject to this application before the Council lies some 5.2miles south-east of Huddersfield, some 2.5miles north-west of Scissett, and 1.8miles south of Kirkburton.

15 All the agricultural land used by the applicants is down to permanent pasture (grass), which is used for grazing and silage making, the farms silage production usually takes place over four cuts on a sliding land scale, depending on grass availability and of course the weather.

16 The first cut of silage is some 89Ha (220ac), this is when the grass has the most nutrients/sugars, the second cut is 72.8Ha (180ac), the third cut is some 57Ha (140ac) and the fourth cut is some 16.2Ha (40ac).

17 Bark House Farm comprises a series of agricultural buildings (all in agricultural uses), some with roof-mounted solar panels, a wind turbine, a silage clamp, hardstanding areas, an on-site dairy processing and bottling facility that bottles and delivers the farms own milk, a creamery producing cream and multiple flavours of Dearne Lea dairy ice cream. Additionally, the farm has its own Tea Rooms with public parking.

18 The farm is a local employer providing regular jobs for the Farm, Tearoom and Dairy as follows: the Farm employs 4 x full time workers and 5 x self-employed contractors, the Tearoom employs 5 x full time workers and 19 part time workers, and the Dairy has 6 x full time workers and 1 x part time worker. Bark House Farm Dairy has 40 milk rounds, all

milkmen/women are self-employed and purchase their milk and cream directly from the farm's dairy (cutting out the middleman).

19 The applicant's farming business is registered with Donaldson Farm Vets at Almondbury, Huddersfield

20 Cattle graze the fields during the summer months and are housed in the barns during the winter months, the livestock farming operations are set out as follows:

- 250 milking cows, 50 dry cows.
- 0 – 6-month calves = 20 approx.
- 6 – 12 months = 65 approx.
- 12+ months = 65 approx.
- All cattle are on the farm from mid-October to April approx. (winter)
- Most of the cattle graze the fields from April to mid-October approx. (summer)
- Breeding is using Artificial Insemination (AI).
- The adult cattle are housed in cubicle sheds and bedded on chopped straw.
- The cattle are fed a mixed ration of cattle cake pellets in the milking parlour, grass silage and brewers' grains dispensed through a mixer wagon into feed troughs which is adlib throughout the day and night.
- The cubicle sheds are cleaned out twice per day which is loaded into manure spreaders and spread on the grass fields. This practice is no longer good practice and now should be stored for a minimum of six months and spread during the spring and summer months to meet agricultural compliance.

Proposed Slurry Store.

21 In order to meet agricultural compliance requirements, it is necessary for all farms with slurry operations to store slurry for a minimum of six months and only apply it to land which requirements the nutrients at the correct time of the year. To achieve this at Barkhouse Farm, the following calculations [Please see Appendix 1].

22 A previous application was made at the farm in 2013 and approved in 2014, which proposed to place the slurry store in a different location further up the hill, however the previous team who submitted the application missed key documents that should have been drafted in advance. Had they completed a Phase 1 Preliminary Contaminated Land and Risk Assessment desk study, it would have showed not only the past geology, and worked coal seams, on the Shertcliffe Seam and Top/Low Whinmoor Seams at the site but also two High Pressure Gas Distribution Pipelines which traverse the farmland, the latter being 750mm and 450mm diameter, respectively.

23 Had they used an appropriate Consultants Report from the Coal Authority in their Coal Mining Risk Assessment, instead of using a CON29 residential report, they would not have proposed to put a slurry tank directly above known shallow coal mine workings.

24 Whilst the previous application was approved by the Council, it could not be located on high ground as slurry tanks require a gravity feed, and the previous team commenced drilling works directly into worked coal seams exposing sub surface voids in the previous location. Therefore, the approved 2014 scheme could not be continued at the discharging of conditions stage as the team drilled eight boreholes directly into the Shertcliffe Coal Seam, finding voids which would have cost circa £1million to grout and stabilise (at 2014 prices).

25 Prism Ag has worked closely with Earth Tech Consulting Ltd (ETCL), who are Chartered Engineering Geologists, Pipeline and Tunnelling Engineers to identify in advance, all possible known site constraints at the farm including the two high pressure gas distribution pipelines owned by Northern Gas Networks, which require a minimum separation distance of 15 – 20 metres, power lines which requires a 9 metre separation distance, identifying three known coal seams (Shertcliffe Seam, Top Whinmoor Seam and Low Whinmoor Seam) and the fact that for a gravity feed to work effectively, the slurry tank MUST be downhill of the farm buildings. Therefore, from our extensive research and the input of ETCL, the ONLY piece of land on the whole farm which this slurry storage tank can be located is where it is proposed to be sited.

26 The proposed Slurry Store has a diameter of 35m, and the height of the concrete is 6m. The store will also have a covered roof which will help reduce rainwater contamination and reduce ammonia emissions. Two metres of the base of the slurry tank will be below ground, and 11.4m of the tank and its cover will be above ground. It may be feasible based upon the considerable evidence presented in ETCL's Coal Mining Risk Assessment that the base of the tank could be placed deeper than two metres into the ground (if the Whinmoor Seams have been worked historically, they could be 'dug out' instead of needing to be grouted), this would enable the external height to be visually reduced above ground level.

27 This application is supported by the Environment Agency who has worked proactively with the applicant throughout this process. The proposed slurry store is an environmental requirement by law and the LPA should approve it promptly, regardless of any objections that may be received.

28 Construction is of Concrete precast reinforced sections that are sealed and bolted together providing a watertight cylinder to hold 5,205 cubic meters of manure with a lifespan of 30 years.

Proposed Site for the slurry storage tank - identified by yellow pin marker

A typical precast concrete agricultural slurry store tank with a green roof.

29 The roof will be a single membrane which will have a central concrete support, there will be two openings to allow for mixing of the manure before applying to the farmland via a trailed slurry tanker or umbilical applicator. The total height of the store and roof will be twelve meters to the point of the cone.

30 The Manure store is fully SSSAFO (Storing silage, slurry & agricultural oil) compliant and under the new regulations for a dairy farm must provide at least six months store throughout the winter.

31 Therefore, this proposal before the Council in respect of above-ground manure store (plant and machinery) meets the exception test for development in the green belt and the requirement for 'reasonably necessary' and is essential for the applicant to store manure safely.

32 A slurry tank is classed as Plant and Machinery on the farm, it is NOT a building nor a structure where people or livestock normally go. There are significant levels of Ammonia inside a slurry tank.

Access

33 The proposed slurry store is to be located on land which is only accessible by the farm via the relocation of an agricultural field gate.

34 This prevents conflict with members of the public who frequent the Dearn Lea Tearooms on a daily basis.

35 To increase BNG at the site, its proposed to extend an existing farm hedgerow in a straight line across a relatively small piece of land where livestock have caused compaction by trampling (poaching) wet ground around the aforementioned agricultural field gate. The wetter soil in this location has caused the cattle to create hollows some 15cm to 25cm deep and this has formed an almost continuous layer of grey waterlogged soil around the field gate.

36 The mitigation for this is to forfeit this location which will now be on the car park side of the hedge and lay recycled plastic 'eco-grids' filled with topsoil and grass seed (so they remain as grass – but can be parked on) and which do not require planning permission as they are permeable/free draining, which will allow in a best case scenario during busy tea room periods, an additional two vehicles to safely park without jeopardising the access to the proposed slurry tank on the other side of the hedge.

Local and National Planning Policies, and Relevant Legislation

37 The Kirklees Local Plan was adopted on 27 February 2019 and the Local Plan Policies considered relevant to this application are as follows:

- LP1 - Achieving sustainable development
- LP2 - Place shaping
- LP10 - Supporting the rural economy
- LP21 - Highways and access
- LP22 - Parking
- LP24 - Design
- LP54 - Buildings for agriculture and forestry

38 Policy LP54 covers buildings for agriculture and forestry, where it states that: Proposals for new buildings for agriculture and forestry will normally be acceptable, provided that;

"a. the building is genuinely required for the purposes of agriculture or forestry;

b. the building can be sited in close association with other existing agricultural buildings, subject to the operational requirements of the holding it is intended to serve. Isolated new buildings will only be accepted exceptionally where there are clear and demonstrable reasons for an isolated location;

c. there will be no detriment to the amenity of nearby residents by reason of noise or odour or any other reason; and

d. the design and materials should have regard to relevant design"

39 The site is allocated as Green Belt in the Kirklees Local Plan 2019.

40 The applicant has an established agricultural unit which operates in line with the Farm Animal Welfare Council's 'Five Freedoms Code principal, these are:

- *Freedom from hunger and thirst-by providing enough fresh water and the right type and amount of food to keep them fit.*
- *Freedom from discomfort-by making sure that animals have the right type of environment including shelter and somewhere comfortable to rest.*
- *Freedom from pain, injury and disease-by preventing them from getting ill or injured and by making sure animals are diagnosed and treated rapidly if they do.*
- *Freedom to express normal behaviour-by making sure animals have enough space, proper facilities and the company of other animals of their own kind.*
- *Freedom from fear and distress-by making sure their conditions and treatment avoid mental suffering.*

41 Section 336 of the Town and Country Planning Act 1990 defines 'agriculture' as including:

- *'Horticulture, fruit growing, seed growing, dairy farming;*
- *the breeding and keeping of livestock (including any creature kept for the production of food, wool, skins or fur, or for the purpose of its use in the farming of land);*
- *the use of land as grazing land, meadow land, osier land, market gardens or nursery grounds; and*
- *the use of land for woodlands where that use is ancillary to the farming of land for other agricultural purposes.'*

The relevant National Planning Policy is the NPPF 2023 (as amended)

42 Paragraph 88 of the NPPF states that Planning policies and decisions should enable:

"b) the development and diversification of agricultural and other land-based rural businesses"

MET – The proposed manure store is for an established agricultural and land based rural business.

Section 6 of the NPPF deals with building a strong competitive economy

Section 12 of the NPPF deals with achieving well-designed places

Section 13 of the NPPF deals with protecting green belt land.

43 Paragraph 154 states that a local planning authority should regard the construction of new buildings as inappropriate in the Green Belt. Exceptions to this are: Agriculture and Forestry, however the proposed slurry tank is an engineering operation comprising Plant and Machinery (where people or livestock do not normally go) and therefore also meets the exception test under Paragraph 155.

44 Paragraph 155 states that certain other forms of development are also not inappropriate in the Green Belt provided they preserve its openness and do not conflict with the purposes of including land within it. These are:

"b) engineering operations;"

Legislation

45 The Reduction and Prevention of Agricultural Diffuse Pollution (England) Regulations 2018

46 Water Resources (Control of Pollution) (Silage, Slurry and Agricultural Fuel Oil) (England) Regulations 2010 (SSAFO): Slurry is defined by the as "liquid or semi-liquid matter composed of excreta produced by livestock while in a yard or building (including that held in wood chip corrals); or a mixture wholly or mainly consisting of livestock excreta, livestock bedding, rainwater and washings from a building or yard used by livestock, of a consistency that allows it to be pumped or discharged by gravity at any stage in the handling process".

In the past, other terms were used to describe slurry of varying strengths or dilutions, such as dirty water and lightly fouled water. These are both forms of slurry.

47 The farms storage calculation includes all forms of slurry as required by SSAFO. This includes:

- runoff from stacked farmyard manures not in temporary field heaps
- runoff from bedding materials, for example woodchips, straw-bedded corrals, stand-off pads
- liquid element of separated slurry runoff from stacked separated slurry solids
- separated slurry from weeping wall stores or strainer boxes
- rainwater that falls directly into a store or flows into store system
- wash water from fouled concrete areas (including parlour washing)
- rainwater runoff from fouled yards or concrete areas

The revised SSAFO regulations came into effect on 15th June 2013.

a. "this regulation applies to any silo, slurry, or fuel oil storage system whose construction is to be begun on or after 15th June 2013 ("a new or improved store").

b. (2) A person who proposes to have custody or control of silage, slurry or fuel oil that is to be kept in a new or improved store must give the Agency notice specifying the type of silo or storage system and its location, at least 14 days before work constructing the new or improved store is to begin.

c. (3) In this regulation, "construction" includes substantial enlargement and reconstruction."

48 The SSAFO regulations do not place requirements on the EA to undertake specific actions when notifications are received, or require them to inspect premises.

49 Upon receiving a copy of the proposals, the EA will assess the proposal and may visit the site. They may request the site operator completes a WQE3 notification form.

50 The EA can serve a Notice where there is a significant risk of pollution to controlled waters. They will assess compliance using all appropriate evidence - mainly a visual inspection.

51 The Notice will outline steps to be taken, or for improvements to be made to an existing or to a new installation in order to reduce to a minimum any significant risk of pollution of controlled waters.

52 Normally they will have dialogue with a farmer operator before serving a Notice.

53 If pollution does occur the farmer or operator may be liable, even if the EA has agreed to the system installed.

54 Section 336 of the Town and Country Planning Act 1990 defines ‘agriculture' as including:

Conclusion

55 Whilst the development impact on the landscape is medium-high and the impact on both the openness of the green belt and potential odour for nearby unconnected residential dwellings is a material consideration, by keeping the proposed agricultural engineering operations for the slurry tank at a size commensurate with its intended purpose (to store the farms cattle slurry). Agricultural infrastructure and engineering operations are an exception at Para 154 and Para 155 of the NPPF. Beyond the initial construction phase, the slurry tank itself will not make any noise beyond tractors going about their daily business.

56 The proposed agricultural structure is Plant and Machinery and is to be sited on land, which is approx. 44 meters away from the nearest existing dwellinghouses, which is screened by mature trees and hedging, therefore environmental law, benefits, and protection override visual amenity by the proposal. Additionally, the visual impact when viewed from a distance will be minimised and slurry storage volumes are justified by this Agricultural Statement.

57 The Farm is not currently compliant in terms of manure and slurry storage so the justification to invest in the store is a statutory requirement by law.

58 The positioning of the proposed store is the only suitable area which is between three coal seams and 40 meters away from two high-pressure gas pipelines and 9 metres away from power lines.

59 The proposed development may be materially detrimental to the amenities of nearby properties but there is no other location on the farmland that such a large structure can be sited due to a multitude of constraints as outlined above. Each of these constraints is overlaid on the submitted plans, the siting location must also be outside of the area previously suggested by the previous consultants (also shown on the plans).

60 The agricultural plant and machinery structure has been calculated using the Agricultural Horticultural Dairy Beef (AHDB) organisation’s Slurry Wizard Calculator (Appendix 1) which is a government trusted calculation tool to calculate the six months storage needed to be compliant, which also factors into the calculation; slurry from the reception pit, slurry channel, pipework, dirty water, and parlour washings.

61 Any rainwater that enters the slurry system is also taken into the calculation as highlighted in Appendix 1.

62 The proposed slurry tank has been designed with sustainability of the environment in mind alongside the essential need of the agricultural unit.

63 As the development is extremely necessary for the purposes of agriculture within the unit and does not breach any of the local or national planning policies, the agricultural development should be promptly approved.

I trust these comments are helpful in your deliberations.

Yours sincerely

pp. Prism Ag

Mark Yearsley**, PMIAgrM, MBIAC**
Director, MY Agricultural Services

Tom Warren**, CEnv, PMIAgrM, MBIAC**
Director, Prism Agriculture Ltd

Slurry Wizard ~ Slurry Data Ent

Stores, yard and roof rainfall, parlour washings and wash water entry

Baseline farm data

Farm name / reference	Barkhouse Farm Dairy
Total farmable area (hectares)	141 Ha
Slurry store 10 figure grid reference (e.g. SE3548629596)	SE2092811373
Cattle in herd/ pig herd size (includes calves, heifers, bulls, sows, finishers etc)	450 animals
Cows in milk	250
Milk yield/cow	6000 litres
Depreciation buildings (%)	5 %
Interest rate (%)	6.75 %
Water cost (£m3)	1.8 £m3
Slurry spreading cost (£/cubic metre)	3.0 £m3
Water storage cost (£/cubic metre)	85.0 £m3
Divert water cost (£/square metre)	5.0 £m2
Roofing cost (£/square metre)	120.0 £m2
Slurry store cost (£/cubic metre)	75.0 £m3

Slurry storage capacity for rectangular & circular tower stores

	Length (m)	Width (m)	Circumference of circular store (m)	Diameter of circular store (m)	Depth (m) (less 0.3m freeboard)	Capacity (m3)	Surface area (m2)	Surface area to store (m2)	Tick if Covered Store
Slurry Channel	55	1.5			1	83	83	83	☐
Slurry Tranfer Pipe	35	0.6			0.48	10	21		☑
						0	0		☑
						0	0		☑
						0	0	0	☐
Store 6						0	0	0	☐
Store 7						0	0	0	☐
Store 8						0	0	0	☐
Store 9						0	0	0	☐
Store 10						0	0	0	☐
New Above Ground Store - circular			110	35.0	5.7	5489	963		☑
Reception Pit - circular			25	8.0	3	150	50		☑
Store 13 - circular				0.0		0	0	0	☐
Store 14 - circular				0.0		0	0	0	☐
Store 15 - circular				0.0		0	0	0	☐
				Total existing capacity		**5732**	**1117**	**83**	

Freeboard : reduce the depth to allow for freeboard (0.3 metres for a steel or concrete store)

Slurry separator

Do you operate a separator for the slurry entering the store(s)	No
% reduction in slurry	30

Adjust the % to reflect the average reduction in slurry volume (refer to manufacturers guidance)

Parlour washings to slurry store

Parlour washings to slurry store	Yes
Parlour washing litres per cow per day (l/hd/d)	20

Note: Suggested 5 to 15 l/hd/d robotic milkers (check with manufacturer). 20 l/hd/d low pressure system. 30 l/hd/d high pressure system.

Uncovered areas of dirty yards, silage silos and earth bank surrounds to slurry store

	Length (m)	Width (m)	Area (m2)
Dirty Concrete	40	20	800
Cow Walkway	29	5	145
			0

Note: For each yard please either enter yard dimensions and the tool will calculate the yard area, or if yard area known please enter the yard area in m2.

Slurry Wizard ~ Livestock Data Entry

Livestock	Age	Liveweight/milk yield (litres)	Number of livestock	% collected as slurry	Annual N output kg/year	Daily excreta (l/day)	Total collected as slurry (l/day)	Total N (kg/year)
Cattle								
Dairy Cow	After first calf	High (> 9000)		100%	115.0	64.00	0	0
Dairy Cow	After first calf	Medium (6000-9000)		100%	101.0	53.00	0	0
Dairy Cow	After first calf	Low (< 6000)	300	100%	77.0	42.00	12600	23100
Dairy heifer replacement	From 12 months to calving	-	65	50%	61.0	40.00	1300	3965
Dairy heifer replacement	2 to 12 months	-	65	50%	29.0	20.00	650	1885
Beef Suckler	Over 24 months	Large (> 500)		100%	83.0	45.00	0	0
Beef Suckler	Over 24 months	Small (< 500)		100%	61.0	32.00	0	0
Grower	Over 24 months	-		100%	50.0	32.00	0	0
Grower	12 to 24 months	-		50%	50.0	26.00	0	0
Grower	2 to 12 months	-		50%	28.0	20.00	0	0
Bulls Beef	Over 2 months	-		100%	54.0	26.00	0	0
Bulls for breeding	Over 24 months	-		100%	48.0	26.00	0	0
Bulls for breeding	2 to 24 months	-		100%	50.0	26.00	0	0
Calf	Under 2 months	-	20	0%	1.4	7.00	0	28
		Total number of cattle	**450**			**Totals for cattle**	**14550**	**28978**

Slurry Wizard ~ Slurry Report

worksheets to PDF

Farm Nitrogen Loading **206 Kg Nitrogen per Ha**

NB This is the nitrogen loading BEFORE the import or export of manure

Action points	
Number of months of storage	**7**
Maximum likely 2 day rainfall	**73**
Recommended reception pit size (m3)	**93**
Farming Rules for Water recommendations	**You comply with the guidance for minimum storage of 6 months**
Roof water collection recommendations	
Slurry store cover recommendations	

		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total
Days		30	31	30	31	31	28	31	30	31	30	31	31	365 days
Total cattle excreta as slurry (m3)		437	451	437	451	451	407	451	437	451	437	451	451	5311 m3
% Cattle excreta to slurry store (100% for housed dairy, 20 to 50% if housed overnight, 10% for grazed dairy)		50	100	100	100	100	100	100	100	50	50	50	50	
Total pig excreta as slurry (m3)		-	-	-	-	-	-	-	-	-	-	-	-	
% Pig excreta to slurry store		100	100	100	100	100	100	100	100	100	100	100	100	
Total other livestock excreta as slurry (m3)		-	-	-	-	-	-	-	-	-	-	-	-	
% Other excreta to slurry store		100	100	100	100	100	100	100	100	100	100	100	100	
Excreta to slurry store (m3)		218	451	437	451	451	407	451	437	226	218	226	226	4,198 m3
Slurry separated (m3)	No	-	-	-	-	-	-	-	-	-	-	-	-	- m3
Parlour washings (m3)	Yes	150	155	150	155	155	140	155	150	155	150	155	155	1,825 m3
Pig wash water (m3)	0.0	-	-	-	-	-	-	-	-	-	-	-	-	- m3

		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total
Grid reference average rainfall (mm)		71	92	91	108	94	66	69	67	52	63	42	58	872 mm
Own average rainfall (mm)		59	63	67	73	69	53	52	43	54	49	51	61	694 mm
Adjusted likely rainfall, (mm)		74	79	84	91	86	66	65	54	68	61	64	76	868 mm

		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total
Storage required		Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	
Yard run off area to slurry store (m3)	945 m2	70	74	79	86	82	63	61	51	64	58	60	72	820 m3
Slurry store rainfall to store (m3)	83 m2	6	7	7	8	7	5	5	4	6	5	5	6	72 m3
Roof water area to store (m3)	0 m2	-	-	-	-	-	-	-	-	-	-	-	-	- m3
Total cubic metres (m3)		444	687	673	700	695	616	673	-	-	-	-	-	4,487 m3
Cumulative production (m3)		444	1,131	1,804	2,504	3,198	3,814	4,487	4,487	4,487	4,487	4,487	4,487	4,487 m3
Total storage capacity (m3)	5732	5,732	5,732	5,732	5,732	5,732	5,732	5,732	5,732	5,732	5,732	5,732	5,732	5,732 m3
Capacity less production (m3)		5,288	4,601	3,928	3,228	2,534	1,918	1,245	1,245	1,245	1,245	1,245	1,245	1,245 m3