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SCARTHINGWELL GOLF CLUB

Advisory Report on the Golf Course

Report Date: 12th October 2018

Consultant: Adam Newton



Date of Visit:	Friday 28 th September 2018
Visit Objective:	To provide an early autumn review of the golf course, assess laboratory data and confirm ongoing maintenance recommendations.
Present:	Kathy Pick – Course Owner Tony Howarth – General Manager John Waite – Head Greenkeeper Adam Newton – Senior Agronomist, STRI Ltd
Weather:	Fine, dry and sunny after a cold start.

Headlines

- The hot, dry summer has presented ideal golfing conditions but has been challenging from a course maintenance perspective at times. On the whole, the course has coped very well.
- The greens are entering the autumn in a far stronger position than last year, with good density and no remnants of disease activity. Our goal now is to retain this strength and preventatively manage disease.
- Dry patch has been far less prominent this summer thanks to a dedicated wetting agent programme.
- Bentgrass populations have notably strengthened this year in response to the hot, dry summer conditions.
- The previously extended area to the left side of the 6th green continues to struggle and reconstructing and reurfing was advised.
- Organic matter levels have continued to reduce towards more favourable ranges. The improvement made over the last 2 years has been very impressive and our focus remains on further reduction.
- Notable improvements to soil texture and rooting were apparent beneath the greens thanks to dedicated sanding, aeration and renovation. Sanding totals have achieved the target of 90 tonnes.
- Addressing the drainage issues on the 16th green remains an important objective. The planned pipe drainage to the green surround/10th tee area will be a positive start this autumn.
- Tree thinning around green complexes is a priority this winter to help increase sunlight and airflow levels.
- The fairways have bounced back extremely well after the drought and there was no concerning lost grass cover. Localised soil cracking and sunken drain trenches were the only blemishes.
- The legacy of the drought was most apparent on the tees where a lack of irrigation has led to some grass loss. A number of tees do require full renovation to improve surface levels and quality e.g. 7th, 12th etc.
- The bunkers need work to restore grass cover on the faces and better manage sand splash moving forward.

Key Actions

- Deploy a further light sand dressing over the next few weeks whilst growth remains strong.
- Hollow core and sand the 16th green alone over the next fortnight to accelerate organic matter reduction.
- Maintain a preventative and holistic approach to disease management through autumn and winter.
- Omit plans to granular feed and instead opt for lawn sand application later in the autumn if felt necessary.
- Continue hardening mixes of iron sulphate, magnesium sulphate and ammonium sulphate along with monthly phosphite applications.
- Supplement potassium levels on the 6th green as a priority.
- Maintain pressure on organic matter reduction by sustaining sanding inputs at 100 tonnes per annum, along with good levels of aeration and spring hollow coring/sanding renovation.
- Reprofile and reurf the weak area on the 6th and overseed and protect the drought stressed area on 7th.
- Make necessary repair work to drought stressed tees and plan for larger scale improvements to notoriously poor teeing grounds like the 7th, 12th. Introduction of tees irrigation should form part of longer-term plans.
- Prioritise tree removal work around key green complexes this winter to improve sunlight and airflow.

Photo Observations and Comments



Figure 1: The greens are in a far stronger position when compared to this time last year. Grass cover was strong, and dense and there was very little sign of anthracnose or dry patch scarring from the summer.



Figure 2: Given the strong and healthy nature of the turf, there is no need for an autumn granular feed. The feeding programme is being very well managed.



Figure 3: The front-right of the 7th has lost grass cover due to an irrigation miss in summer. This is a heavily trafficked area and so gaining full recovery will be challenging.



Figure 4: The 16th green was as strong as the others on the surface but was notably softer. Addressing the drainage issues on this green remain a key objective. Pipe drainage is to be installed to the green surround/10th tee area this autumn, which will certainly be of benefit.



Figure 5: Retaining grass cover on the left side of the 6th is extremely challenging due to straight sand make up beneath following green extension (see right picture). We agreed that this area needs lifting, reprofiling and returning to provide a longer-term solution.



Photo Observations and Comments (continued)



Figure 6: There were notable improvements beneath the greens, particularly with organic matter, rooting and soil texture. Elevated sanding and aeration over the last 2 seasons are key contributors. Organic matter levels have continued to reduce towards target ranges (see below). Further organic matter reduction remains a priority for the greens to achieve their full potential.



Figure 7: Drain lines have sunken on the 15th approach (and other areas) as clay soils have shrunk through the dry summer. This approach is notoriously one of the weaker ones and renovation work is required this autumn. Tree removal behind the 15th green remains a priority to increase sunlight penetration to the green complex and aid natural drying.



Figure 8: The lack of tees irrigation has been really highlighted this summer, with several teeing grounds suffering lost grass cover. The 7th was one of the worst. This surface also needs releveling as a priority.



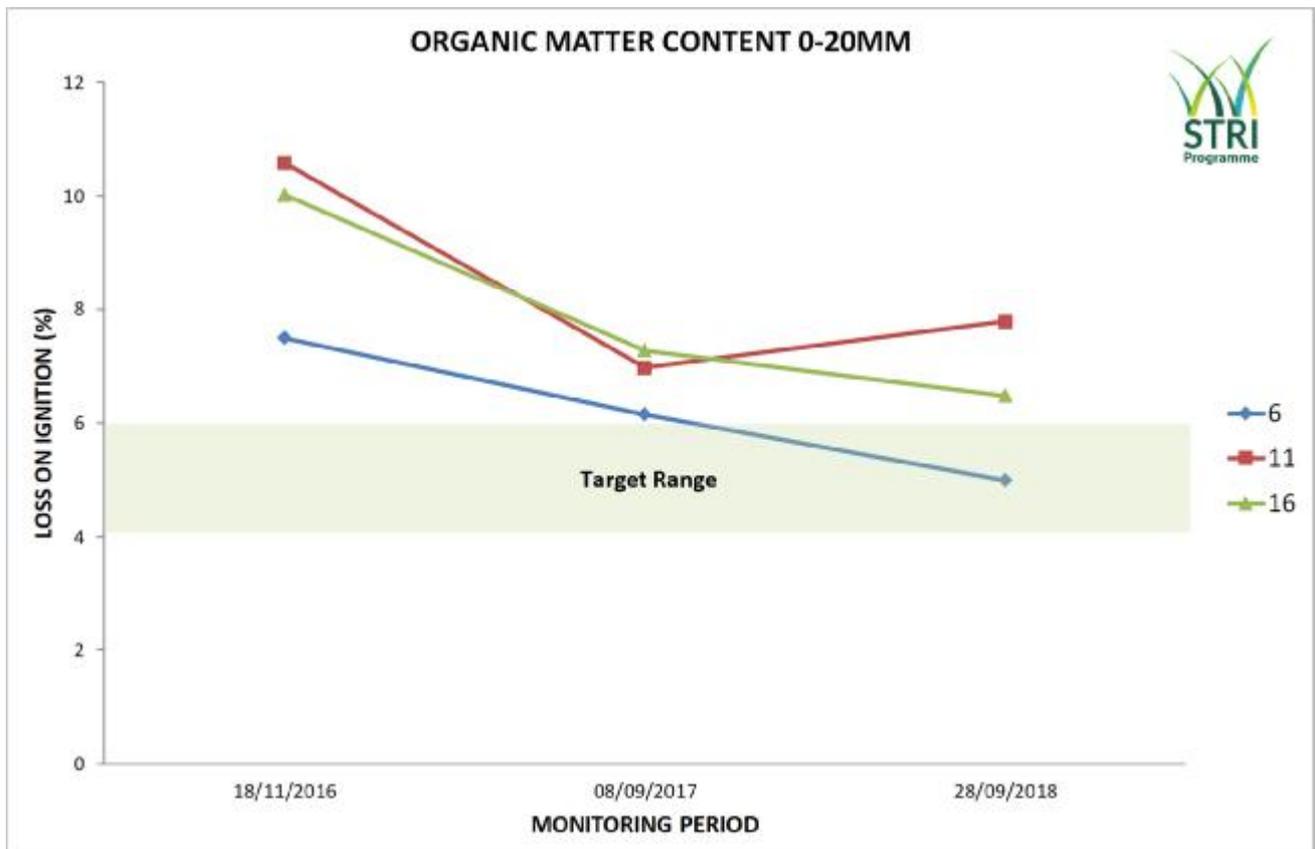
Figure 9: The Par 3 12th tee has also lost grass cover. This tee platform is much too small to support 2/3 sets of tees and cope with the high wear of a short Par 3. The adjacent woodland is also too close and too dense and causes the surface to sit in dense shade.



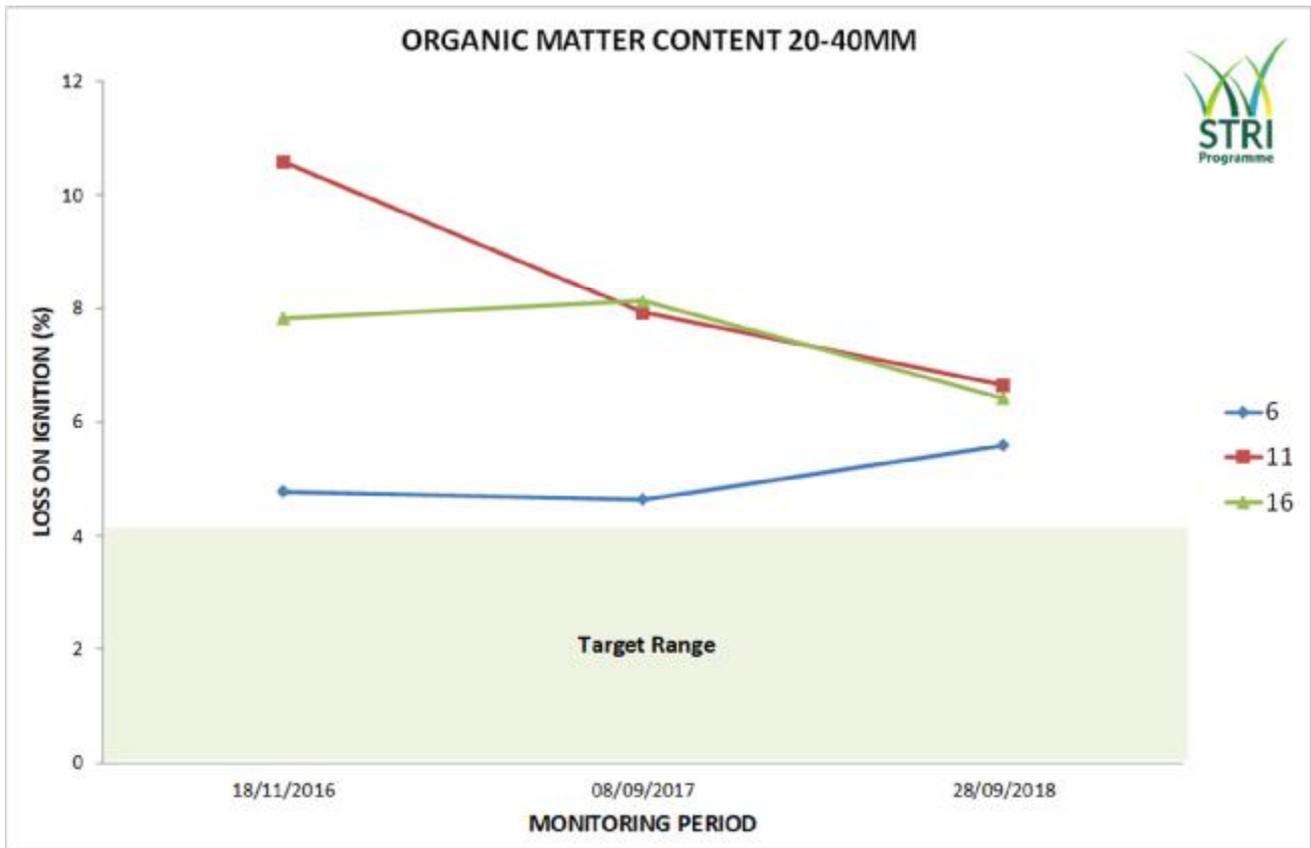
Figure 11: Assessing the greens on a bright autumn morning provided an ideal opportunity to assess the impact of shading on the greens. The work undertaken around the 8th green is excellent and should be extended further to both the left and right. Removal of the silver birch and poplar trees behind the 9th green (left picture) would also be advised. This would expose the green to a lot more light and natural drying whilst also providing a backdrop of the clubhouse.

Organic Matter Testing

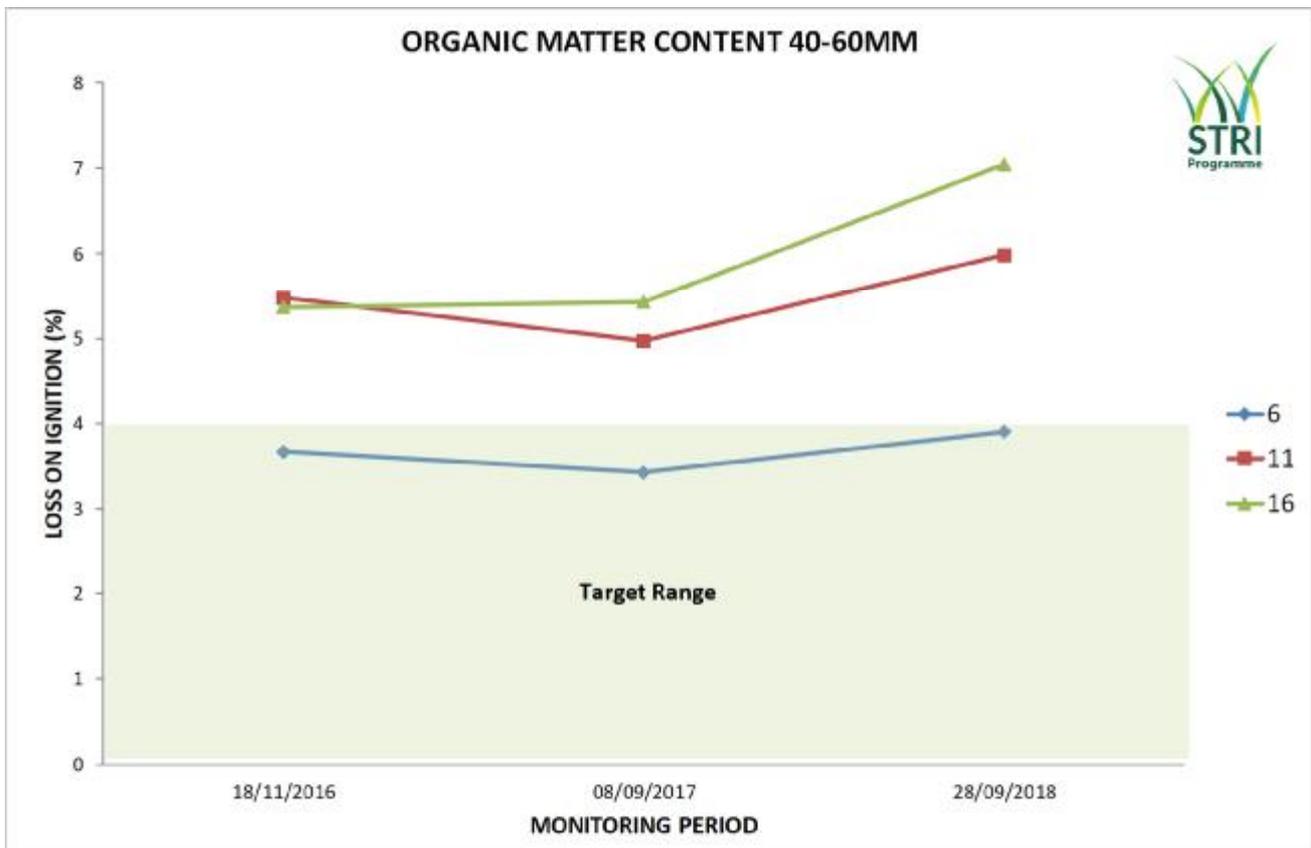
Soil samples were taken from the 6th, 11th and 16th greens for laboratory analysis of organic matter content and are compared against historic data taken from these greens in the graphs below.



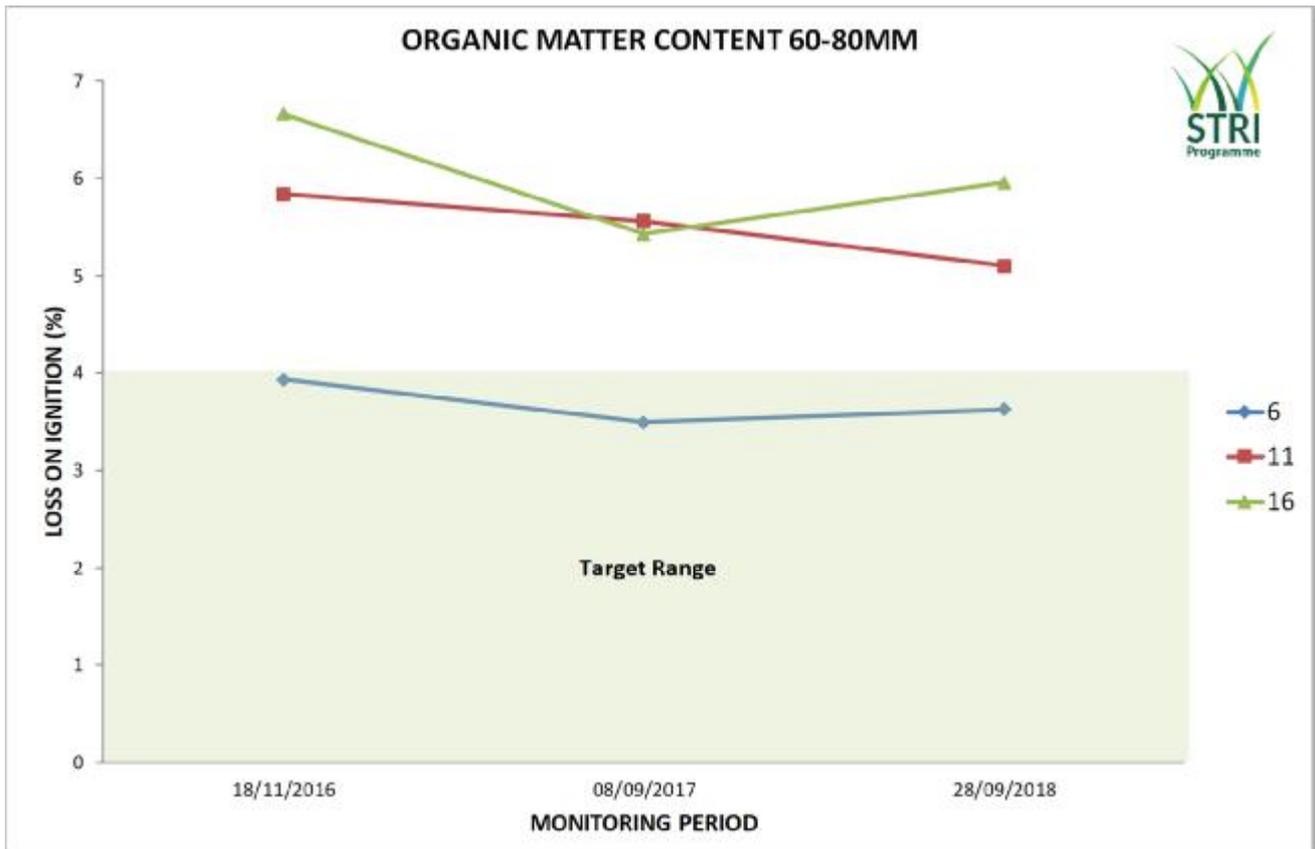
Laboratory Testing Graph 1: Organic matter at 0 – 20mm depth has continued to reduce on the 6th and 16th greens but seen a slight increase on the 11th, potentially due to heightened summer watering. The progress made over the last 3 years has been extremely impressive with average values now at 6.4% compared to 9.4% in 2016 when this process started. Values on the 6th green are now within target ranges at this depth, but further reduction is required on the other two.



Laboratory Testing Graph 2: Values at 20 – 40mm depth have seen notable improvements on the 11th and 16th greens but a slight increase on the 6th. Again, values have seen a notable improvement at this depth over the last 3 years and now average at 6.2% but further reduction is required to get to our target range of <4%.



Laboratory Testing Graph 3: There has been a slight increase at 40 – 60mm depth potentially caused by the burying of some organic material through sanding. This is perfectly understandable but does demonstrate the need to maintain hollow coring to help physically remove material at this depth.



Laboratory Testing Graph 4: Values have remained relatively static at this depth, with no movement on the 6th, a slight reduction on the 11th and a marginal increase on the 16th. Values on the 6th green are within target range but just above on the 11th and 16th.

Recommendations

Greens

- Sustain cutting heights at 4-4.25mm for the time being, then gradually increase up to a winter height of 5mm as growth tails off.
- Schedule a further light sand top dressing at a reduced rate of 5 tonnes per hectare over the next 1 – 2 weeks to further perfect the surfaces and aid organic matter dilution.
- Sand inputs have reached our annual target of 90 tonnes and there was clear evidence of the benefits of this when inspecting the upper profiles. Our aim should be to sustain this target of 90-100 tonnes of sand for the coming year.
- Needle tine the greens using the vertidrain and 8mm diameter tines as soon as possible. Target a depth of approximately 5 inches but apply no heave with this operation. A further vertidrain treatment using larger 12mm diameter tines and 5 – 10% heave should be scheduled for late October. Repeat 12mm verti-draining in early spring when soil and ground conditions are suitable.
- Plan for hollow tining (12mm tines) and sanding renovation to all greens again in spring to accelerate organic matter reduction.
- Deploy further hand tining and bent grass overseeding to the localised dry patch effected areas on the front right of the 7th and left of the 10th greens as soon as possible, then aim to keep pin locations away from these sections for the coming weeks to reduce foot traffic and encourage bent grass seed to develop. Given the location of the area on the front right of the 7th and its potential to receive intensive levels of foot traffic, I would recommend that this area is made G.U.R and hooped off to reduce play and foot traffic.
- Proceed with plans to strip the turf in the troublesome area to the left-hand side of the 6th green before removing the upper 300mm of material and replacing with a 70:30 rootzone mix. This area should then be re-turfed and protected through the winter.
- After the above mentioned vertidrain treatment, winter aeration should largely focus on occasional pencil tining and regular sarel rolling as and when conditions dictate. Ensure that aeration is only applied when the surfaces are suitable i.e. not too soft or saturated.
- Plan for a deep hollow core and sand backfilling treatment to the 16th green alone over the next fortnight to further reduce organic matter and aid winter drainage performance. Reducing organic matter will help this green and so will the pipe drainage work being undertaken to the area around the green but for the fundamental drainage issues to be addressed beneath the green, my recommendation would still be for the introduction of a full pipe drainage system to the green in the future.
- Maintain vigilance with disease management with further preventative applications of fungicide taking place through the autumn and early winter. As the effects of the recent Scorpio fungicide wear off, application of Instrata Elite is to take place. Follow this up with application Banner Max in early/mid-November. If disease pressures remain high through December, then application of Fludioxonil (Medallion TL) should take place.
- Maintain phosphite applications every four weeks through the autumn and winter as part of a holistic approach to managing disease. Phosphite is proven to be a great aid with disease management but must be used preventatively.
- Keep the surfaces as dry as possible through the autumn and winter with a further application of Penetrat8 in October, then switch to applications of dew dispersal agents as growth slows down. Avoid application of dew dispersals immediately prior to a fungicide as this can hinder chemical uptake. A further penetrant application can be scheduled in early Spring to help soils dry.

- Ensure that cutting units are kept as sharp as possible throughout the autumn and winter. Mowing the greens with blunt units will tear the leaf blades on the grass and create an ideal pathway for disease infection into the plant.
- The worth of the Breaker wetting agent programme was put to the test this year and the benefits were clearly apparent. It is imperative that this programme remains in 2019.
- The importance of accurate water management was a key talking point during the visit following the localised areas of turf thinning where irrigation misses have occurred through the summer (e.g. 7th and 10th greens). I would strongly recommend that a soil moisture probe is purchased ready for next season to help more accurately monitor soil moisture levels and inform irrigation requirements. Our aim should be to utilise the probe on a regular basis to help manage soil moisture levels at 20-30% wherever possible.

Chemical Analysis Results & Nutrition

- Soil pH was relatively high and averaged at 6.2. This is likely to have increased this year due to increased summer watering. Application of acidifying forms of fertiliser will help to bring values back down to more favourable ranges (circa pH 5.5).
- Phosphate levels were adequate and showed good consistency between the greens. No further phosphate input is needed until next spring at the earliest.
- Potassium levels were absolutely fine on the 11th and 16th greens and do not need supplementing until next spring. Values on the 6th however were too low and need an immediate application of a potassium supplement. This could be applied in granular form (e.g. GoGreen Granules) or in water soluble form e.g. sulphate of potash at a rate of 20kg/ha.
- There is no requirement for a granular feed this autumn and instead we discussed the potential to apply a low rate lawn sand treatment later in the autumn if felt necessary. Instead, the focus should remain on routine ammonium sulphate, iron sulphate and magnesium sulphate treatments. If disease is active at the time of application, look to remove the ammonium sulphate element of the mix.
- The feeding programme has worked superbly well this year and should certainly continue in the same vein next growing season. Targets of 90 - 100kg/ha of nitrogen should remain. We can discuss the finer details of the 2019 feeding programme during my spring visit.

Green Approaches & Surrounds

- Plan for a solid tine and sanding treatment to all green approaches and collars this autumn. The sunken drain lines and cracks across the approach on the 15th will need additional hand top dressing and truluting to improve surface levels. Localised dwarf ryegrass overseeding may also be required here.
- Commence with drainage work around the 16th green/10th tee area as planned. This will be of great benefit in the longer term.
- Proceed with plans to shockwave high traffic routes in preparation for winter wear.

Tees

- Continue solid tine and sanding treatment to all tees through the autumn along with dwarf ryegrass overseeding where turf cover has been lost during the drought.
- Several tees will need intensified work to restore cover and surface levels. An example would be the 7th tees which require re-levelling and re-turfing. The Par 3 12th tee was also a key talking point. This surface needs to be enlarged, re-levelled and re-turfed in the future, along with the woodland behind and to the right side being significantly thinned out to increase sunlight and airflow.
- Reducing the size of the medal tee on the 14th was also agreed as a good idea and the material taken from the front section could be recycled when developing the 12th tee complex.

- A longer-term strategy for the tees should be to install irrigation to allow them to retain better grass cover through the summer months and allow them to recover better from wear and divoting operations.
- Looking to next summer I would highly recommend that wetting agent application is introduced to the tees with two applications of Fifty90 (by Aquatrols) – one in mid/late spring and another in mid-summer. This will aid soil moisture uniformity and also improve the rate at which the surfaces bounce back from dry spells of weather.

Bunkers

- Deploy patch-up turfing work to drought damaged areas of the bunkers. This may involve full refacing of summer bunkers.
- Enhance efforts to reduce the accumulation of sand splash on bunker faces moving forward through more frequent brushing or blowing of sand.

Fairways

- Target sunken drain trenches across the course with topdressing and overseeding this autumn.

Tree Management

- One of the key focuses moving forward is to improve the growing environment around some of the more shaded green complexes. In particular, work around the 3rd, 7th, 8th, 9th, 10th and 15th greens would be highly recommended.
- Removal of the silver birch and poplar trees behind the 9th green was also recommended. This would expose the Clubhouse and the fantastic oak tree to the right-hand side as key focal points of the hole, whilst also allowing greater amounts of sunlight and airflow to the putting surface itself.
- There is also potential in time to introduce a pond in the area behind the 9th green/clubhouse pathway. This would not only act as a visually attractive feature but would also aid drainage around this notoriously wet area.
- Continue tree thinning to the right-hand side of the 8th as a priority but also look to thin out the copse of trees to the back left of the green to increase sunlight penetration. I also agree with the notion to remove the lone silver birch tree to the back right of the green.

Signed

A handwritten signature in black ink that reads 'A R Newton'. The signature is written in a cursive style with a large, sweeping flourish at the end.

Adam Newton BSc (Hons), MBPR, FQA
Senior Turfgrass Agronomist
Official Agronomist to the R&A Championship Committee
t. +44 (0)7545 439908
e. adam.newton@strigroup.com
www.strigroup.com

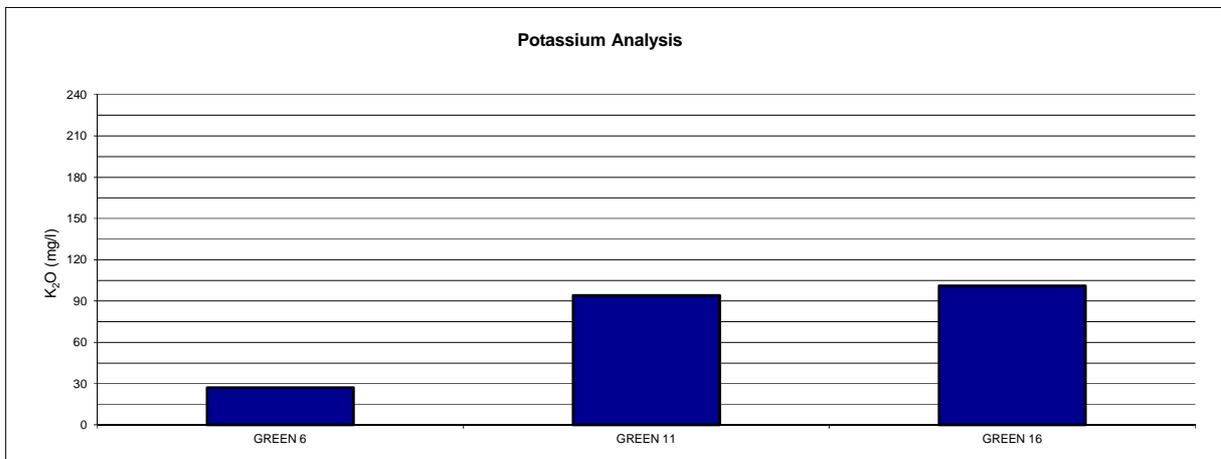
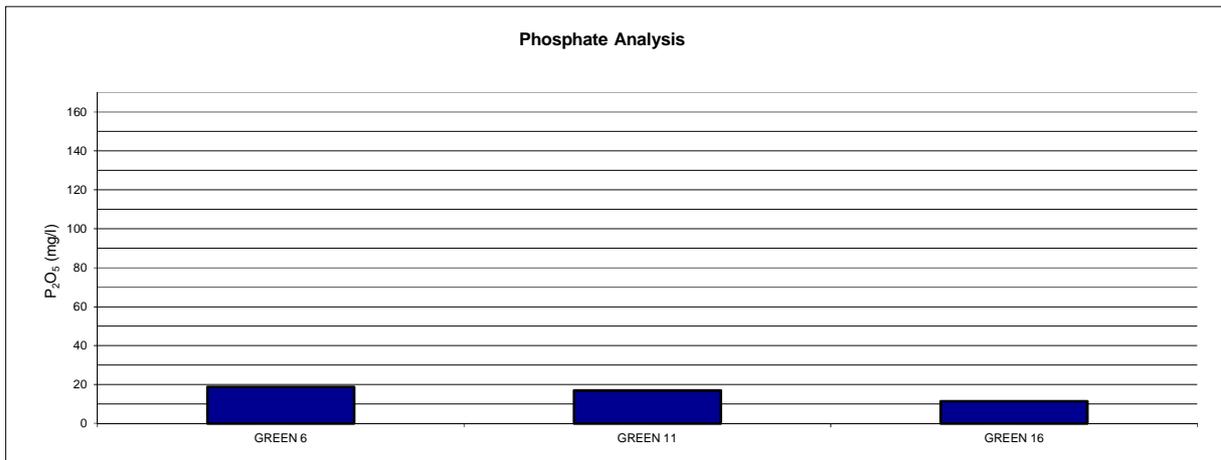
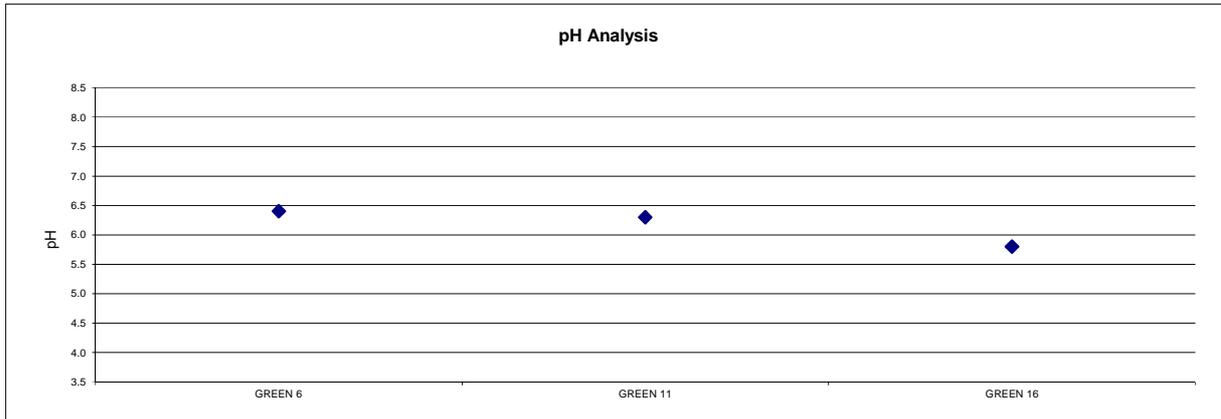
STRI

St Ives Estate, Bingley, West Yorkshire, BD16 1AU
T. 01274 565131 F. 01274 561891 E. info@strigroup.com www.strigroup.com

SOIL CHEMICAL ANALYSIS

SCARTHINGWELL GC

Date: 02/10/18



THE RESULTS PERTAIN ONLY TO THE SAMPLE(S) SUBMITTED AND TESTED.

ORGANIC MATTER CONTENT

CLIENT: SCARTHINGWELL GC
ADDRESS: SCARTHINGWELL,
TADCASTER,
NORTH YORKSHIRE, LS24 9DG

DATE RECEIVED: 02/10/18
DATE REPORTED: 10/10/18
RESULTS TO: ARN

TEST RESULTS AUTHORISED BY:
Michael Baines, Laboratory Manager

CONDITION OF SAMPLE UPON ARRIVAL: MOIST

SAMPLE NO	DESCRIPTION	LOSS ON IGNITION (%) [*]
A17249/1	6 0-20 mm	4.99
	20-40 mm	5.59
	40-60 mm	3.90
	60-80 mm	3.62
A17249/2	11 0-20 mm	7.78
	20-40 mm	6.64
	40-60 mm	5.99
	60-80 mm	5.10
A17249/3	16 0-20 mm	6.48
	20-40 mm	6.41
	40-60 mm	7.05
	60-80 mm	5.96

* ASTM F1647-11 Standard Test Methods for Organic Matter Content of Athletic Field Rootzone Mixes (Method A)



THE RESULTS PERTAIN ONLY TO THE SAMPLE(S) SUBMITTED AND TESTED

Testing Certificate 2159 - 01