



Making great sport happen

SOUTH SHIELDS GOLF CLUB

Advisory Report on the Golf Course incorporating the STRI Programme

Report Date: 12th October 2020
Consultant: Gwynn Davies



Date of Visit:	Thursday 17 th September 2020
Visit Objective:	To assess the condition of the golf course following a challenging year and support improvement initiatives.
Present:	Mr Phil Hargrave – Course Manager Mr Tim Kent – General Manager Gwynn Davies – STRI Ltd
Weather:	Clear and breezy with sunny spells, 17°C.

Headlines

- Variable and challenging weather conditions this year have impacted consistency across all playing surfaces on golf courses. This has been a feature nationwide and whilst recovery has been evident from the 2018 drought, the ongoing impact on turf is unfortunately becoming more prominent.
- Greens had recently been renovated and surface sand dressing was still evident on the surface. Stronger growing areas showed dressing well integrated into the sward.
- Anthracnose activity was noted. Affected areas were thinner and further highlighted by the dressing because of the thinner swards in those areas.
- Localised drier areas of greens were being hand-watered during the visit and upon inspection were in very good condition because the sand had been washed into the sward.
- Some greens had higher content of more desirable finer grasses (6, 7 & 15) and were less impacted by disease, illustrating the need to encourage them.
- Cultural practices were discussed throughout the visit and identified the need to increase certain elements to gain further benefit of fine turf going forward. Surface disruption is required to produce quality turf surfaces, however minimising their impact is key to retaining performance and pleasing patrons.
- Outfield areas were in good condition overall and the current management plan appears to be working well. Minor refinements were discussed to be addressed over the winter and continued through the coming years.
- Long grassland rough areas are a welcome addition to the landscape diversity of the course and immediate and future management plans were discussed to help refine them down. The aim is to reduce their productivity and improve their current impact on the speed of play.
- Investment into key pieces of equipment will raise productivity and efficiencies and should be discussed. Having the ability to undertake essential practices immediately throughout the year forms a significant part of a successful turf management plan.

Key Actions

- Monitor disease activity through the autumn and consider applying iron if further infection is noted, ahead of a fungicide.
- Continue with aeration throughout the winter to different depths to reinstate soil structure and aid drainage on all surfaces.
- Renovate damaged tees to reinstate coverage ahead of the 2021 season.
- Manage traffic accordingly on and around playing surfaces through the winter to avoid excessive wear and tear.
- Begin with cut and collect cycles in the grassland areas and continue exploring assistance from local farmers to dispose of the arisings.
- Develop a tree management plan to begin this winter whereby their effect on turf quality is reduced and native flora is allowed to establish.

Photo Observations and Comments



Figure 1: Putting surfaces were in very good condition considering the challenges faced this year. Turf coverage was complete and healthy aided by the 4mm cutting height.



Figure 2: Greens profiles are good, although surface fibre is tight in absence of regular topdressing and aeration during lockdown.



Figure 3: The 17th green shows a pan at 120mm (yellow arrow). Rooting to 150mm seen down historic tine holes is an indication of the greens potential.



Figure 4: Anthracnose activity was more noticeable on more sheltered greens like 17th. Surface reinstatement via seed germination has been successful and should be continued.



Figure 5: Dry patch was noted on some greens near bunkers due to sand splash. Wetting agent applications will help improve moisture retention and allow the fescues to flourish.



Figure 6: Tee condition is excellent and are showing healthy surfaces like 16th. Productivity is high and presentation levels could improve further via removal of clippings.

Photo Observations and Comments (continued)



Figure 7: Increased volumes of traffic and damage are being managed via divotting. Tee renovations on smaller platforms will help restore surfaces ahead of the 2021 season.



Figure 8: Approaches and green surrounds are in very good condition with clear definition following strong growth recently.



Figure 9: Reshaping of the 9th green surrounds will improve playability and maintenance as currently they require excessive amounts of time to manage and present.



Figure 10: Fairway reshaping would improve time efficiencies and create better definition by allowing semi rough and grassland areas to be introduced that require less frequent maintenance.



Figure 11: Grassland areas are adding structure and help with definition of the course. For maximum benefit they need to have cut and collect twice a year to help with refinement.



Figure 12: The 2nd tee hedge should be removed to help improve the growing environments, encourage native flora, and allow for increasing the size of the tee platform area.

Recommendations

Greens

- Challenging times this year have meant adapting to changes to maintain expectation levels. COVID-19 lockdown and staff furlough has meant minimal inputs and lower amounts of cultural practices have been achieved. This has meant surfaces have had to be protected via raising heights of cut, less refinement, increased fertiliser inputs to prioritise health rather than performance. These measures were also aimed at suppressing disease pressure and appear to have worked.
- Advise reducing the spray application interval to 2-3 weeks to maintain constant nutrient availability and turf health. Supplementary inputs using low analysis granular products when appropriate should raise resilience levels and lower disease pressure.
- Current disease activity has resulted from a reported increase in pressure on the Greenkeeping team to produce perfection. In the absence of a full team limitations exist and these should be acknowledged as peripheral tasks (attention to detail) may be overlooked in favour of the wider playing surfaces.
- As limitations were reportedly placed on cultural practices during lockdown compared to other courses in the area, standards are bound to be affected. The challenge now is for the Club to commit to a support program that rectifies these shortcomings and addresses the needs of the 2021 season by targeted investment and redevelopment work this coming winter.
- Climate change is becoming more prominent and must be considered as part of the management approach required to maintain surface performance and strive for improvements. Drainage, aeration and developing turf resilience has been the mainstay of managing turf this year with dry spring conditions triggering disease outbreaks during lockdown. The lack of access to protection products has meant a return to cultural control methods with varying degrees of success.
- The resultant scarring has without doubt impacted on the performance and overall health of the greens, but recovery is underway. As legislation tightens and a more holistic approach to management is required, acceptance of disease activity will be required. Threshold levels may still need to be determined along with reviewing standards of the course.
- Realignment of these standards must be considered to ensure longevity of the course whilst also being sustainable within the limits of resource availability. Implementing a Course Policy Document would help align the Club's ambitions and expectations whilst supporting Phil and his team to achieve them. Further assistance with producing this document is available if required from STRI and should be viewed as an essential exercise this winter.
- Disease management has to be a holistic approach moving forward because of fewer plant protection products available. Improving botanical composition of surfaces with finer grass species is vital to improving the turfs ability to perform year round to required standards. For example, the 17th green shows anthracnose activity that has affected surface levels and visual qualities, although ball roll was largely unaffected.
- Disease activity was noted on many greens and was mainly Anthracnose with evidence of historic Take-All patch. Recovery in most areas has been good, accelerated successfully by localised overseeding with bentgrass (Figure 4). Continue with low level seed inputs when changing holes and consider the inclusion of fescue into the seed mixture to develop the botanical composition.
- Samples of water were tested, and the results show the pH of 8.4 with high carbonate content meaning the water is alkaline. Regular applications, especially during drought periods, will change the conditions in the putting surfaces which can lead to a pH shock and trigger disease activity. Take-All patch favours alkaline conditions and having seen the test results, the irrigation water is the most likely cause.
- The upcoming QuadDrop acidification system installation into the irrigation system will help reduce the water pH and stabilise disease activity. Acidic conditions also favour stronger growth, better efficacy from

nutrition and plant protection products and encourages microbial activity within the soil. In time soil health is likely to improve further with the ongoing use of compost tea products.

- Greens were found to be in good condition an improvement on last year's visit. Density was uniform in areas unaffected by disease activity. The aim is to restore complete coverage ahead of winter to provide a strong sward for the 2021 season.
- Rooting depth remains variable due to the nature of the underlying soil and proximity of rock to the surface. Panning has developed at 120mm depth on the 17th green which needs addressing via slitting to break it up and allow for deeper root establishment and improved turf resilience.
- Moisture levels within the greens ranged from 12.5% to >37% which is understandable because of higher irrigation inputs due to the recent dry weather conditions. Hand watering has helped maintain health and allowed recovery following a recent fertiliser application.
- Ideally aim to maintain moisture levels between 22-28% using a moisture meter. Hand watering will likely form the backbone of irrigation inputs in years to come as the strategy is realised and uniformity within the soil is achieved through wetting agent applications.
- Dry patch on 13th green perimeter showed moisture levels at 12.5% (Figure 6). Look at hand watering with wetting agent pellets (currently Breaker, consider GBR Aquazone) to alleviate symptoms in such areas. Monthly applications throughout most of this year have helped manage uniformity within profile.
- Next year it is important that monthly applications are adhered to so that soil moisture fluctuations are minimised. Halting applications to appease a minority of the memberships dismay over tyre marks on greens has the potential to create many long term issues that may be irreparably damaging to the performance of the course. Trust and time must be afforded to Phil and his team to use their expertise to achieve the highest possible standards.
- Consider using a more cost effective wetting agent program for greens next year. Many new products use updated chemistry, lower application rates, and have better longevity. Examples include ICL TriSmart, GBR Technology Hydrozone & Aquazone <https://www.gbrtech.co.uk/amenity/products/wetting-agents/>
- Topographical challenges with underlying rock and contouring on greens means that blanket irrigation applications will need to be heavily subsidised by hand watering in the future. As the effects of the new acidification system take effect, we can expect improvements in the soils ability to retain nutrients, microbiology levels to increase and overall general turf health to rise. pH changes will likely favour the establishment of finer grasses, as seen on all greens with widespread bentgrass populations. The 13th green has widespread fescues integrated into the surface showing the potential for improvement.
- Cores showed a tight organic matter (thatch) layer in the upper 15mm and soil test results support this with average content being 6.2% in the 0-20mm and 4.3% in the 20-40mm zones respectively. The planned renovations will reduce these figures further, however more invasive, and efficient processes may be required in the future. Examples are Graden Sand injection or GKB Sandfiller scarifying machines <https://www.gkbmachines.com/machine/sandfiller/> These should be planned in and communicated accordingly.
- Topdressing inputs are looking to fall short of the annual 100 tonnes target this year because of the disruption. Through 2021 plan to make very light fortnightly applications of 6-8 tonnes per cycle that are much easier to work into the canopy.
- Localised renovation strategy for addressing higher thatch content on individual greens could be planned for via hollowcoring, Graden sand injection, heavy overseed, topdress to reinstate levels and low analysis granular fertiliser. Raise cutting heights to protect the seedlings once renovations are completed.
- Where surface moisture retention is a concern, hollowcoring should not be dismissed as a viable management option as only a select few greens may require additional disruptive actions, like 17th. When combined with scarifying and sand injection, this provides an ideal opportunity to introduce high volumes of sand into the upper profile and improve drainage, gaseous exchange, and dilute remaining thatch.

- Cores show a consolidated layer of fine material at 120mm that needs opening up to help drainage and encourage rooting depth to match the evidence seen down historic tine holes (Figure 3). Slitting would be preferable if investment into equipment was forthcoming, as it is a quicker and very effective method of aeration. Ideally this would be carried out every 2-3 weeks between October and December. Cease after this time to avoid slits gaping under dry spring weather as experienced this year.
- Aeration practices should continue and where possible, increased. Drainage concerns about the greens should be addressed via deep tining and consideration for air injection using the Air2G2 machine twice a year is advised subject to finance availability. Creating deep fissures within the soil profile at depth helps to encourage deeper root systems and reduce the impact of the existing pan layer. All forms of aeration help link the surface and accelerates water infiltration.

Machinery Investment

- Investment in sarel roller cassettes would be worthwhile as an efficient means of maintaining gaseous exchange. They also provide an excellent mechanism to create seed beds ahead of overseeding.
- Pedestrian drop spreaders are an excellent way of applying seed into areas where required and offer the option to also apply granular products into localised areas too. The ICL SS2 spreader is recommended and more information can be found at https://icl-sf.com/uk-en/products/turf_amenity/drop-spreader-ss-2-drop-spreader/
- Pedestrian aeration machines are very common with the TORO ProCore being the preferred choice. Having the ability to aerate anywhere at anytime will only benefit the condition of the turf. Shallow aeration capability can be deployed on all playing surfaces much easier and efficiently with such machinery. Ongoing investment into the course should seriously consider the acquisition of such a machine. <https://www.toro.com/en-gb/sports-fields-municipalities/aerators/procore-648-09200>
- Slitting is a very efficient means of aeration particularly in the autumn/winter period on tees, greens, and approaches/surrounds. The benefits include the increased surface area within the soil that roots can develop into. SISIS Multislit <https://www.sisis.com/multislit/> are the most popular and the 1.2m machine would be regarded as the best option provided a suitable compact tractor is available to attach it to.
- In the absence of a suitable tractor, the Club would be advised investigating this key piece of machinery as a priority. Many manufacturers offer them however consider service back-up and spare part availability as crucial drivers in the decision making.

Green Collars, Surrounds and Approaches

- These were in very good condition following a cut during the visit and presentation levels showed clear definition between individual playing surfaces which is to be expected following strong growth recently.
- The mixed sward contained high populations of finer grass species and few disease or drought issues were seen. Refinements would be beneficial via verticutting and brushing in order to reduce the grain of the turf which would raise performance.
- Minor evidence of wash boarding following mowing suggests the grain is impacting presentation standards and quality of cut. Reducing the speed of mowing would help raise presentation by ensuring a cleaner and more uniform cut.
- The mounding around the 9th green needs to be landscaped to soften the contours and create runoffs behind the green. Reducing the severity of the slopes here would make mowing easier and neater. Use the soil to cover rocky outcrops and this can easily be carried out in-house.

Tees

- Conditioning of the tees in most cases is outstanding with complete coverage and healthy turf. These are some of the best seen this year and are a credit to the Greenkeeping team.
- Where challenges remain for golfers of limited ability, consider installing new tees that would help improve playability without compromising challenge or difficulty, for example the 18th Ladies. Raising their tee above the level of the gorse would allow them to avoid the hazards and raise their chances of reaching the fairway.
- Applications of Dispatch wetting agent have helped improve soil moisture distribution within the soil profile. Rooting has improved on last year and overall turf health and vigour has benefitted tee platforms by raising standards and performance.
- 2nd tee privet hedge needs removing as mentioned in last year's report. It is out of character with the rest of the course and would create options to extend the tee and manage wear better after the increased volumes of traffic being experienced this year.
- Higher amounts of wear and tear are clearly illustrated on the 12th medal tee where damage has now restricted tee positions. Advice ceasing play off that platform once competitions have ended and solid tine with 12mm diameter tines to open the surface, aim for 35mm spacings if possible, overseed with a 50/50 fescue/dwarf ryegrass mixture, topdress to fill in the holes and protect the seed, apply a suitable low analysis granular fertiliser (Headland C-Complex 5.2.10 or similar). Use germination sheets to accelerate recovery ahead of the 2021 season.
- It is vital to manage traffic and wear and tear on the tees through the winter, especially if ground conditions deteriorate. As growth slows recovery time will be extended and the aim must be to provide the best possible surfaces in spring as possible. Do not be afraid of closing individual tees earlier than normal to encourage recovery.

Fairways

- The current 14mm cutting height is helping sustain dense surfaces with a good mixture of grasses, especially fescues. The dry nature of the site lends itself to fine grass establishment and once growth slows and mowing frequency reduces, look to carry out divotting repairs on all the fairways. Ideally utilise volunteer groups to assist and if possible, undertake a cycle as soon as possible and again in early spring.
- Continue with adding seed into the divotting process and advise a 50/50 fescue/dwarf ryegrass seed mixture next year to raise drought tolerance levels as uncertain weather patterns will increase in frequency and potentially severity. Therefore, by adjusting botanical composition to drought tolerant species performance will improve in time.
- Aeration via deep tining is advised this autumn to various depths depending on the depth of the underlying rock. Maintaining an open soil structure is key to providing year round playability.
- Consider reshaping some fairways to reduce their size and mowing area, thus helping streamline mowing efficiencies and improve playability. Time savings here can be transferred to other areas of the course for maximum benefit.

Grassland and Tree Management

- The course has a links feel and has potential to develop into a true golfing test with removal of trees and increased amounts of grasslands and gorse.
- Gorse management should follow an 8 year plan cycling through cutting plantations back to encourage stronger regeneration from the remaining stumps. Ecologically this will improve the biodiversity of the site and landscape structure.

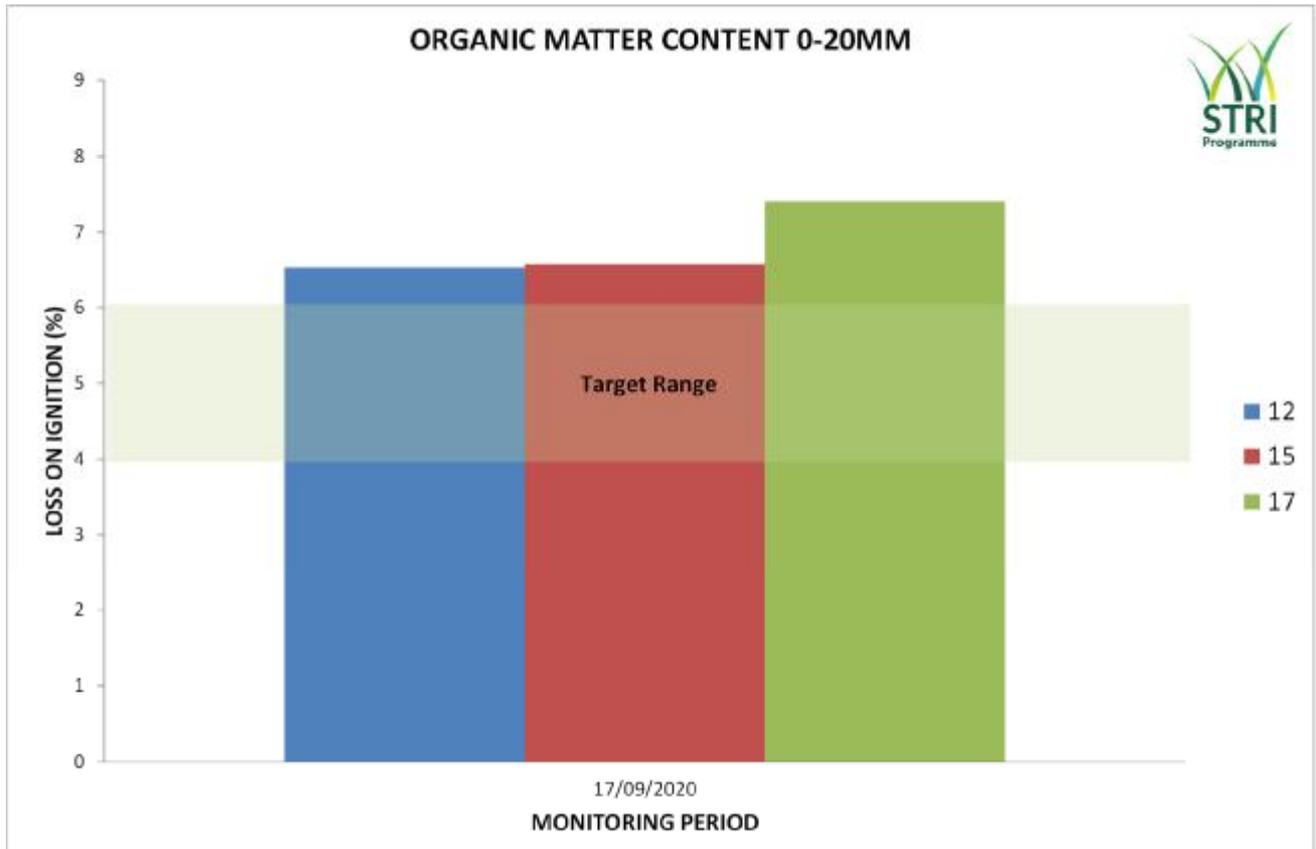
- The nationally rare and special magnesian grassland area in front of the 18th tee should be protected as best as possible and encouraged to spread further afield and the following link may be helpful to the Club: http://www.nebiodiversity.org.uk/biodiversity/habitats/grassland/lowland_calcareous/default.asp Also advise seeking expertise and guidance from STRI Ecologist Rowan Rumball rowan.rumball@strigroup.com
- Linking other areas of grasslands will help frame individual holes, like 17th and 18th, and improve the overall growing environment for all playing surfaces as light levels increase along with airflow and presentation standards. Where applicable this will require some removal of trees and thinning of gorse, as seen on the 10th hole in front of the tee.
- Grassland areas would benefit greatly from “cut and collect” management to help thin the sward, lower soil fertility levels, reduce productivity, refine species composition, and encourage wildflowers. Consider accelerating the refinement process by doing it twice a year using a flail machine which may mean hiring machinery for this purpose.
- March and early September are the best time for harvesting as the leaf material still contains nutrients which once removed will help lower soil fertility levels by removing compostable material.
- Possible ash dieback (*chalara*) within some of the copses on the course was reported and advise seeking additional advice from the local Forestry Commission officer <https://www.forestresearch.gov.uk/tools-and-resources/pest-and-disease-resources/ash-dieback-hymenoscyphus-fraxineus/>
- The hedgerow along the right side of the 10th hole would benefit from being laid to create a lower denser hedge. The trees within it should be removed completely to capitalise on the views towards the coastline whilst futureproofing against shade ingress.

Signed

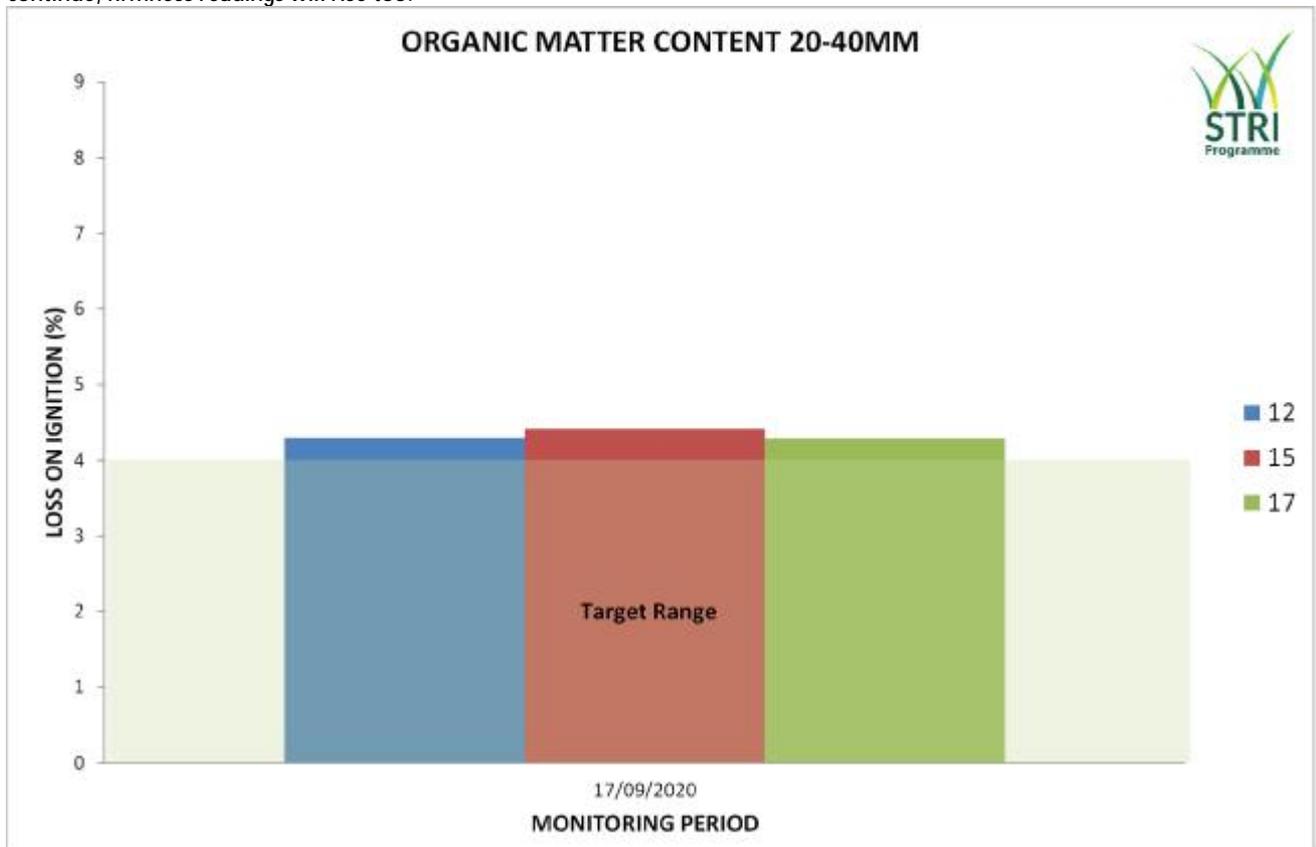
A handwritten signature in black ink, appearing to read 'Gwynn Davies', written in a cursive style.

Gwynn Davies
Regional Turfgrass Agronomist
t. +44 (0)1274 565131
e. gwynn.davies@strigroup.com
www.strigroup.com

Soils Laboratory Data

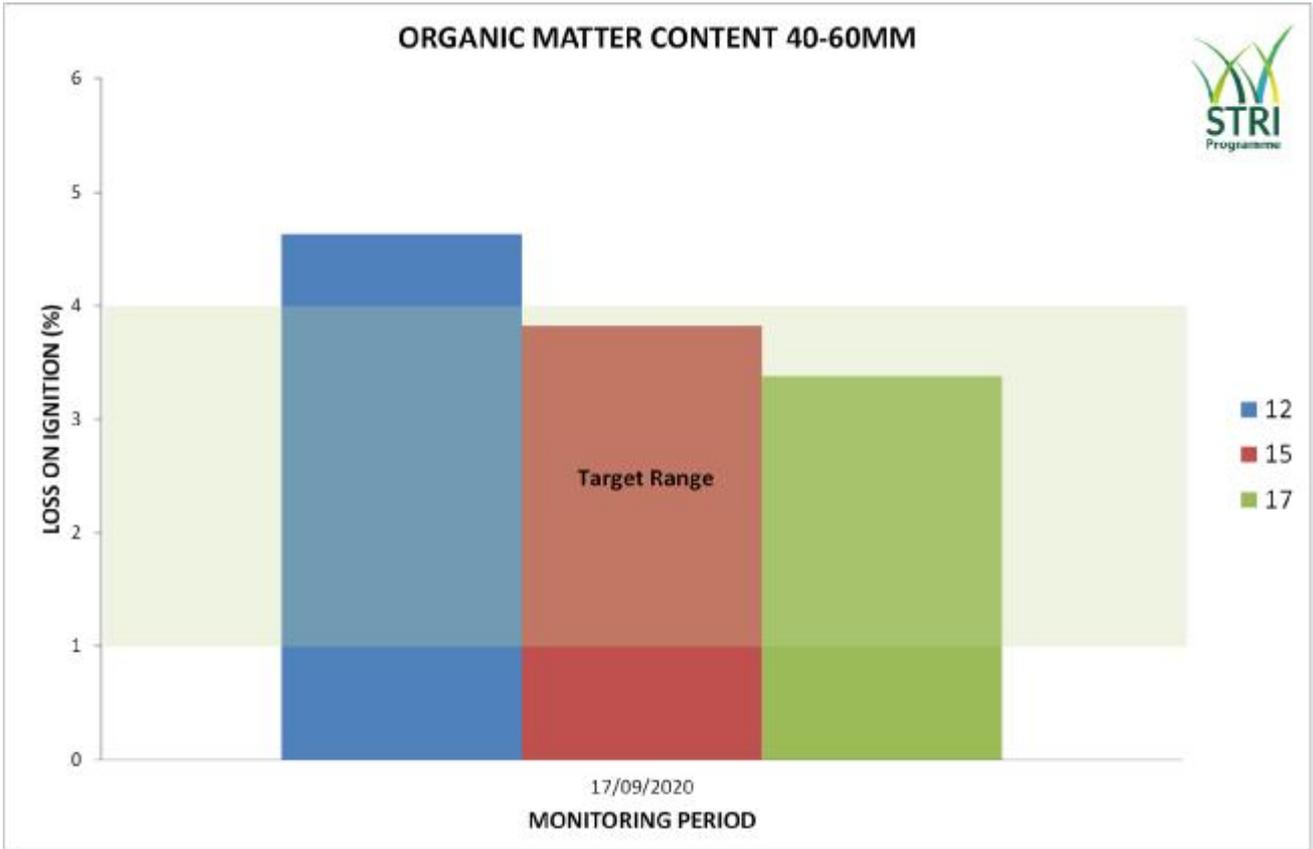


Soils Laboratory Graph 1: The greens all exceed the recommended target range, especially 17th which also had significant disease activity. Lowering surface organic matter content will help reduce moisture retention and disease incidence. As dressing inputs continue, firmness readings will rise too.

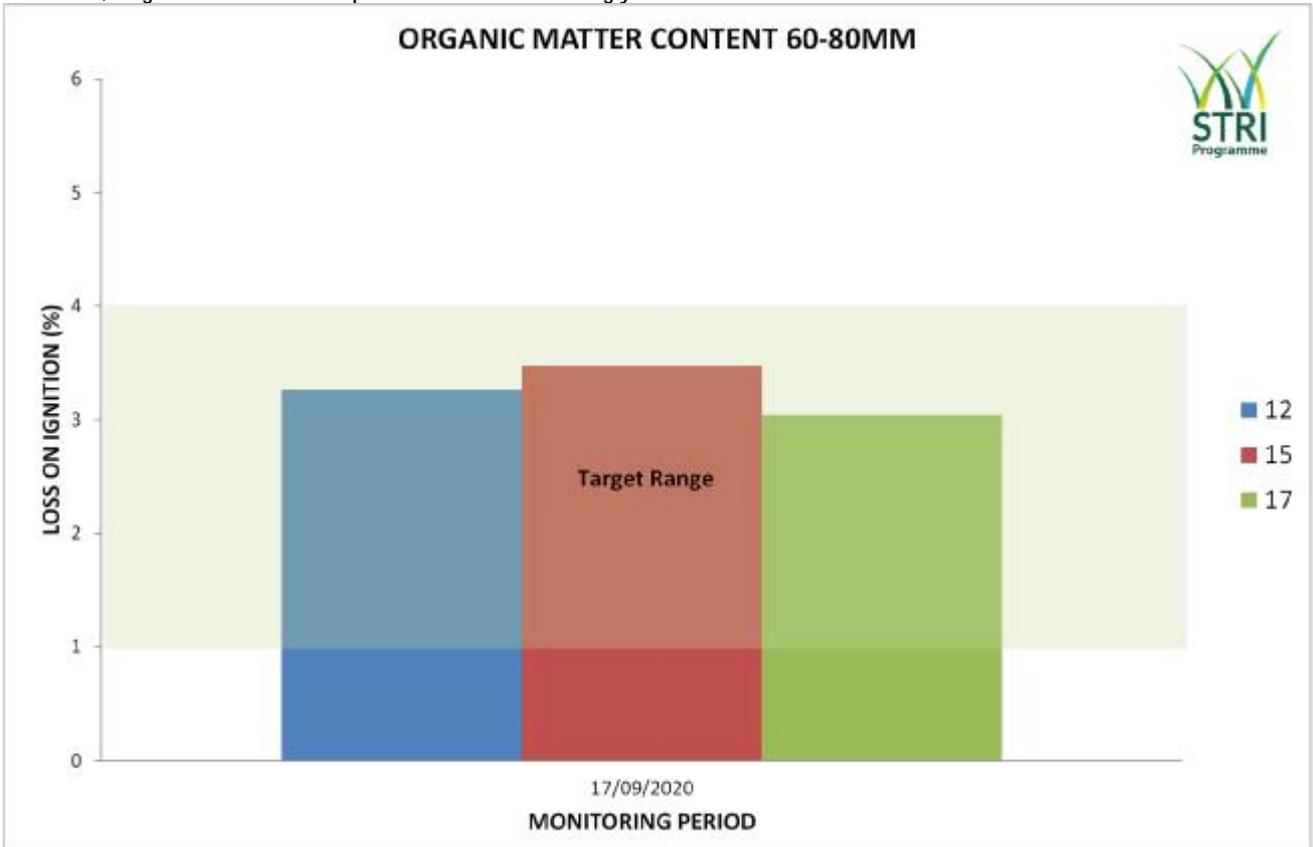


Soils Laboratory Graph 2: All the greens are marginally outside the target range. An aggressive renovation would likely reduce these figures to acceptable levels, however ongoing management is required to stabilise them below 4%.

Soils Laboratory Data (continued)

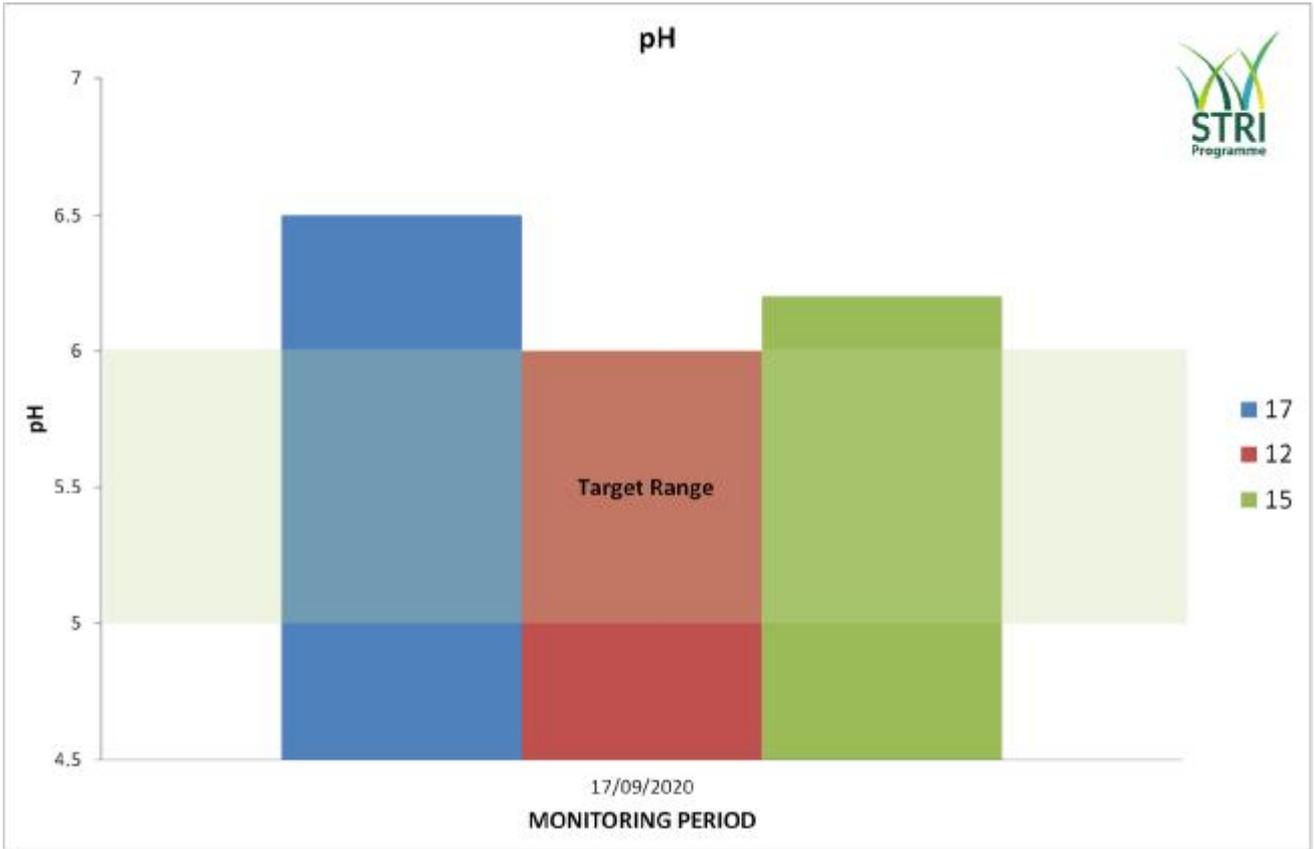


Soils Laboratory Graph 3: The 12th green shows excessive levels at this depth, however with a targeted approach to organic matter reduction, all greens should see improvements in the coming years.



Soils Laboratory Graph 4: Considering the excellent rooting depth seen on the green, these figures are of no concerns. Continue with the deep aeration program.

Soils Laboratory Data (continued)



Soils Laboratory Graph 5: pH levels are slightly elevated, most likely due to current irrigation water pH being alkaline. Use of acidifying fertilisers and investment in the irrigation system are expected to lower these figures below 6 which is ideal for finer grasses to establish.

ORGANIC MATTER CONTENT

CLIENT: SOUTH SHIELDS GC
ADDRESS: CLEADON HILLS,
SOUTH SHIELDS,
SOUTH TYNESIDE, NE34 8EG

DATE RECEIVED: 24/09/20
DATE REPORTED: 01/10/20
RESULTS TO: GD

TEST RESULTS AUTHORISED BY:
Michael Baines, Laboratory Manager

CONDITION OF SAMPLE UPON ARRIVAL: MOIST

SAMPLE NO	DESCRIPTION	LOSS ON IGNITION (%) [*]
A18652/1	12 0-20 mm	6.54
	20-40 mm	4.29
	40-60 mm	4.63
	60-80 mm	3.26
A18652/2	15 0-20 mm	6.58
	20-40 mm	4.42
	40-60 mm	3.82
	60-80 mm	3.47
A18652/3	17 0-20 mm	7.41
	20-40 mm	4.29
	40-60 mm	3.38
	60-80 mm	3.04

* 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

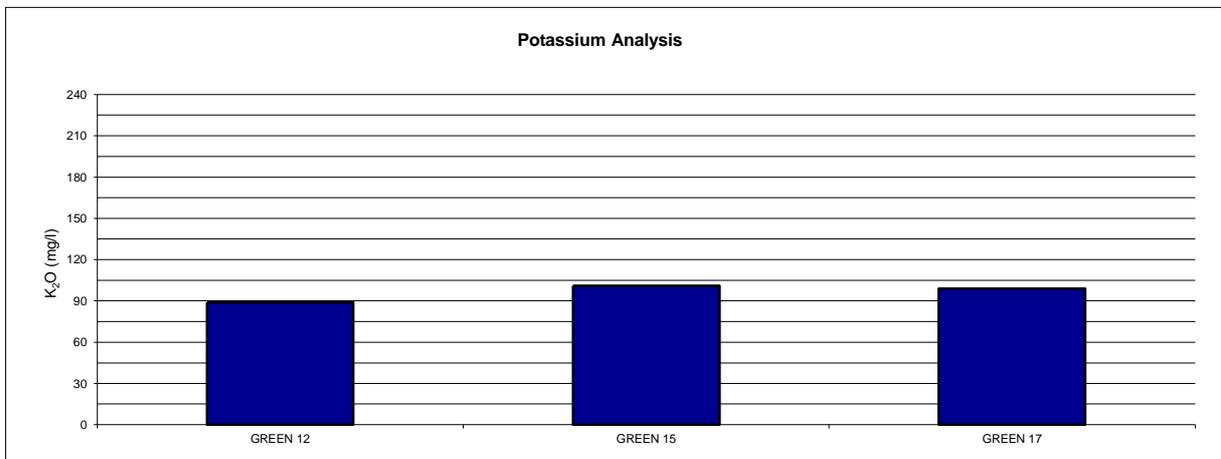
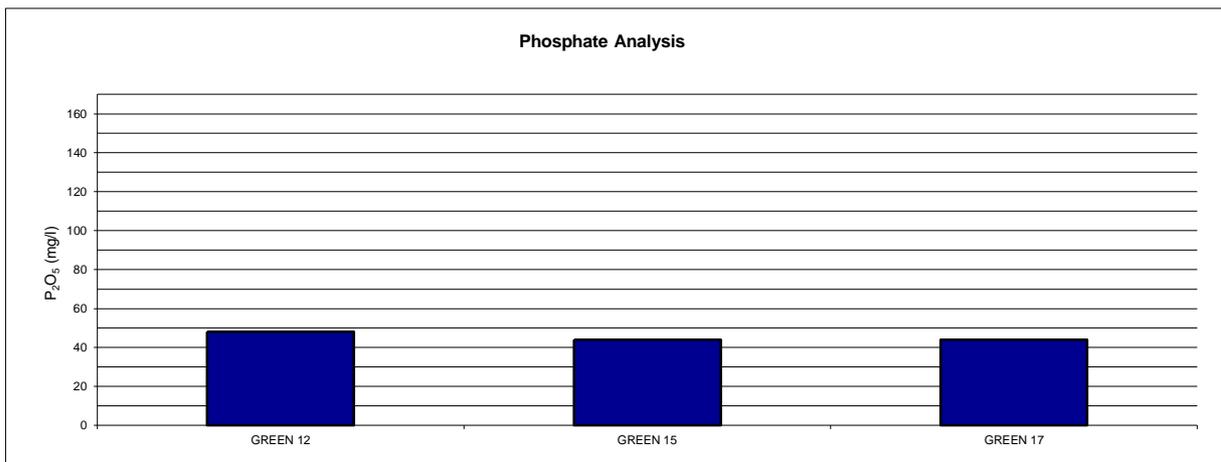
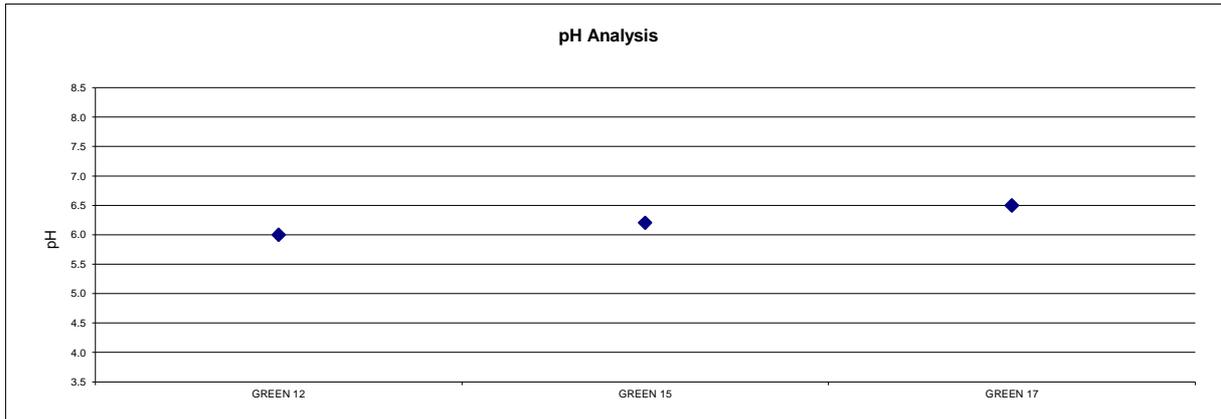
STRI

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

SOIL CHEMICAL ANALYSIS

SOUTH SHIELDS GC

Date: 24/09/20



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

STRI

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

WATER ANALYSIS

CLIENT:

SOUTH SHIELDS GC

RESULTS TO: **GD**

DATE RECEIVED:

24/09/2020

Sample No.	A18655/1			
Source.	WATER			
Analysis.				
pH	8.4			
Alkalinity(as mg/litre CaCO ₃)	308.0			
Electrical Conductivity (µS/cm)	1011.0			

Mr M A Baines, Soil Laboratory Manager

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