



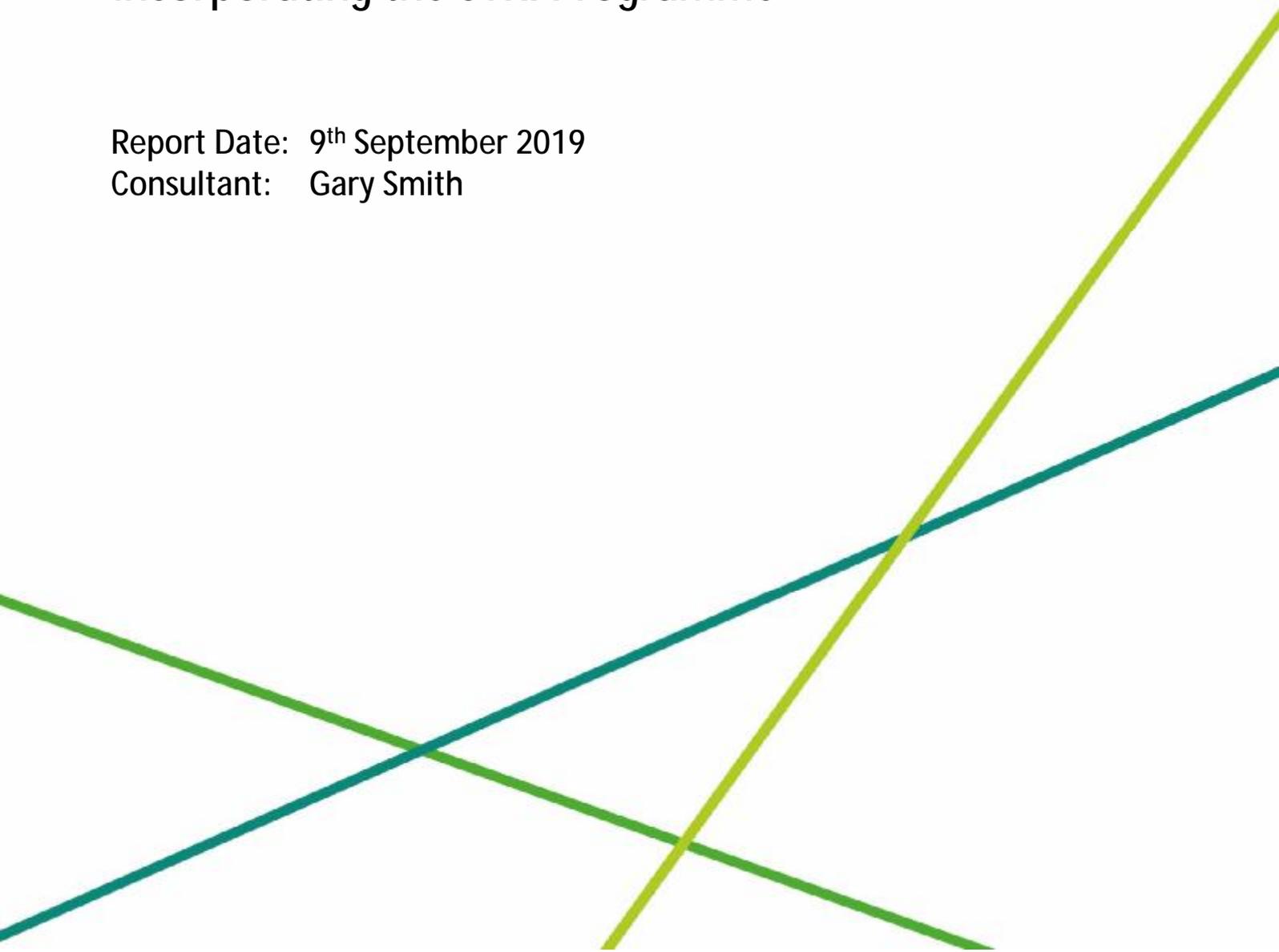
Making great sport happen



# NAIRN DUNBAR GOLF CLUB

## Advisory Report on the Golf Course incorporating the STRI Programme

Report Date: 9<sup>th</sup> September 2019  
Consultant: Gary Smith



## Nairn Dunbar Golf Club

|                  |   |
|------------------|---|
| Date of Visit:   | Wednesday 31 <sup>st</sup> July 2019  |
| Visit Objective: | To review the summer condition of the course, take objective measurements of greens performance and confirm ongoing maintenance requirements. |
| Present:         | Richard Johnstone – Course Manager, Gary Smith – STRI Ltd<br>Robbie Stewart – Director of Golf, David Bunker – Vice Captain                   |
| Weather:         | Showery, 19°C. Rainfall 4mm overnight, 17mm over 2 days pre-visit.  |

### Headlines

- The golf course is performing well and showing resilience against the carry over from the rigours of the dry and heat stress conditions experienced in 2018. An excellent position to be in and credit to the maintenance team is due.
- Greens soil moisture content was in target despite overnight rain and with surface firmness also uniformly in target. Smoothness and trueness were comfortably both in target, with all measurements presenting a superb set of results. Green speed was well in target and positive under the challenging conditions pre-visit.
- All greens are achieving sward quality improvements with increased work on Poa annua removal and sward refinement. Fairy ring has expressed on greens and fairways and is under controlled management.
- The greens performance was justifiable and predictable in conditions with well managed Organic Matter. The average Organic Matter accumulation in the green profiles in the 0-20mm horizon is well within desirable limits.
- We see variation in results in the 20-60mm horizon in the 10<sup>th</sup> green. This will require ongoing and continued routine maintenance with top dressing applications. This will remedy the out of target areas in the seasons ahead.
- Phosphate was low, remedial action is required this autumnal/winter period.
- Fairways have recovered well this year; however, a small amount of hot spot damage is still visible. Time and patient management will be needed going forward to fully restore those surfaces whilst the reparation and natural recovery process unfolds.
- Spring conditions this year were and typically are remaining unfavourable for stimulating recovery so early in the season (often cold and dry) however, in review with the course manager, the current nutritional, wetting agent and bio-stimulant applications are robust enough to produce a vigorous turf canopy on all areas of the golf course.
- The recent construction of Sandscape areas has proved an outstanding success.
- Woodland management is an increasing issue as plantations grow in canopy size. Work is carried out regularly but increased attention to removal and larger areas will need addressed very soon if the Club are to achieve the target of returning the natural links style characteristics to Nairn Dunbar Golf Club.
- Traffic management is difficult in sections and deleterious wear is visible due to a lack of travel path options for both players and the maintenance team. Assessments to introduce wider, more varied options is needed.

### Key Actions

- Organic matter levels are generally in target, but some areas still require increased attention.
- Continue sand top dressing @100 tonnes per annum in a little and often approach.
- Sward refinement is progressing, keep the intensity at an optimum on all fine turf areas Phosphate is very low and will need additional applications.
- Basidiomycete activity requires continuous monitoring.
- Increase the number areas of sandscape where applicable.
- A robust woodland management plan is in place and will need further extension.
- An expanded Rough grassland management plan will also benefit the course.

## Objective Measurements

| Measurement                                | Average                     | Target Range |
|--|-----------------------------|--------------|
| Soil Moisture (%)                          | 29% (range 22-32.9)         | 15-30%       |
| Hardness (Gravities)                       | 91 Gravities (range 88-105) | 85-110 g     |
| Smoothness (mm/m)                          | 16.9 mm/m                   | <25 mm/m     |
| Trueness (mm/m)                            | 3.3 mm/m                    | <10 mm/m     |
| Green Speed                                | 9 ft 5in                    | 9-11 ft      |
| Organic Matter 0-20 mm (%)                 | 4.4%                        | 4-6%         |
| Organic Matter 20-40 mm (%)                | 3.3%                        | <4%          |
| Soil pH                                    | 5.2                         | 5.0-6.0      |
| Phosphate (P <sub>2</sub> O <sub>5</sub> ) | 3.8 mg/l                    | >10 (mg/l)   |
| Potassium (K <sub>2</sub> O)               | 41mg/l                      | >30 mg/l     |

Key: In Target Marginal Variance Out of Target

## Photo Observations and Comments



Figure 1: The course is in excellent condition and is presented to the highest of standards. An attention to detail is evident on all areas of the golf course.



Figure 2: Sward refinement is at a very high standard and is still increasing in quality, evidence of *Poa annua* seeding is still on show, masking the true level of improvements made.



Figure 3: Organic Matter dilution is visible throughout the core sample, it is very well managed and in target, a considerable achievement under the conditions of late.



Figure 4: Sward separation is occurring on collars/surrounds due to stress from high traffic wear.



Figure 5: Recent Interseeding on the 17<sup>th</sup> green has shown an excellent result and will only help improve the surfaces over the season.



Figure 6: Superficial Fairy ring is visible on several greens and is being addressed.

## Photo Observations and Comments (continued)



Figure 7: High wear areas are still in recovery from 2018 and Type 2 Fairy ring has also expressed on a few fairways



Figure 8: The golf course has several pressure points from Machinery and high traffic wear on heavily used walk on/off sections.



Figure 9: Irrigation is not available to all tees and should be addressed as soon as possible.



Figure 10: Trees framing this fairway and the heavily wooded areas across the course, visually have the wow factor. However, an increasing negative impact on year-round turf health is apparent.



Figure 11: The recent sand trap improvements are stunning both visually and ecologically, giving Nairn Dunbar that true links quality.



Figure 12: The putting green and its surrounds are a mark of the quality at the Golf Club. Visible sward separation needs addressing so as not to negatively impact on the overall superb facility.

## Recommendations

### Greens

- Top dressing inputs should continue @100 tonnes per hectare per annum on the greens in a little and often approach, particularly through the off-season months. This will further dilute the current organic matter content and help to control any ongoing naturally produced dead and decaying plant tissue which could otherwise form thatch.
- Greens renovation should include solid tinning the greens with 8-10mm diameter tines at 35mm spacings to a depth of 60mm minimum. Apply sand-topdressing and ensure that the holes are filled close to the surface level working in through drag matting or sweep-n-fill contra-rotating brushing. Follow up applications should be applied as necessary.
- Follow this operation with a pass of a scarifying unit to intensively thin the organic material in the top 20mm of the profile and replace with sand. This is an ideal opportunity to incorporate an interseeding with Browntop bent seed through the same operation. This interseeding will accelerate the recovery process following the operation.
- Aeration maintenance is carried out regularly and I would suggest an increase of sorrel rolling advisable on all greens, at least twice monthly. Likewise if available, the deeper Air2G2 should be employed 4-6 times per annum and the length of tines varied to accommodate mid (100mm-150mm) and deep (225mm-300mm) aeration, if not then the Verti-drain or similar should be employed 1-3 times per annum with a 12mm solid tine.
- Interseeding should be increased using a variety of methods including the use of disc seeding in the off season with a mix of pot/dimple seeding throughout the busier periods, offering greater influence and improvement in sward transition. Success rates will increase using both suitable Bent grass cultivars and the continuation of Fescue cultivars in a 2-1 ratio bent to fescue, adding a mycorrhizal seed coating will also help quickly germinate and develop all new seed in these areas.
- Nutritional inputs are at a level on all greens where they are robust and capable of producing an excellent fine-turf canopy and should continue at the current target of 70-80kgs N per hectare per annum.
- The use of Fulvic acid @5-10l per hectare in the off-season will prove valuable to the greens condition going forward. Fulvic acid enhances cell division and elongation. Root growth is magnified with obvious benefits (so long as moisture and soil structure are appropriately managed) it also increases the plants oxygen uptake capacity with an associated increase in chlorophyll production and the permeability of plant membranes which improves the uptake of all nutrients.
- The use of a granular Calcium and increased Phosphate applications are advised during the autumnal maintenance period to gently push up the pH to a more desirable level of  $\geq 5.5$  and increase Phosphate levels within the rootzone.
- Disease pressure was discussed, and the addition of Phosphite and a Liquid Copper Trace element was encouraged to assist in addition to the current strategy. Please speak to me again before contemplating any programmed approach using either Phosphite or a Liquid Copper supplement. Basidiomycete activity is a pernicious problem and increased usage of soil surfactants especially over the off- season months will help alleviate the deleterious hydrophobic rootzone effect on grass plants.

### Greens Collars, Surrounds and Approaches

- All areas adjacent to the green should receive the same maintenance as the green surface area, the boxing off on the collars should continue and is supported for expansion where possible around the green surfaces.
- Approaches should be inter-seeded with Barenbrug Bar Platinum alongside top dressing applied as regularly as possible. The Club should be striving to have almost greens consistency on these areas in the future.
- Sward separation is becoming apparent on some areas and considerable planning to reduce the invasion of unwanted coarser grasses due to the pressure of machinery and foot traffic is needed.

## Tees

- The maintenance team has worked hard to reduce wear on all Tee areas, and they are in very good condition across the course, this however is ongoing and a continuous process.
- Regular movement of Tee markers, the use of a Plant Growth Regulator (trinexepac-ethyl) such as Primo Maxx during the playing season, alongside the current robust nutrition and aeration package in place, will without doubt maintain greater quality. Coincide this approach with interseeding of Barenbrug Bar Medal grass seed with attention paid on the weaker/thinning areas.
- Sand top dressing should be applied routinely to develop all tees, both playing season and off-season winter tees, this will develop a more consistent and harder wearing surface improving consistency and playability across the course.

## Fairways

- The use of a Wiedemann TerraRake or similar on all fairways will benefit both in organic matter removal and sward composition improvement and I would expect it be carried out at least once per annum.
- Wetting agents (surfactants) on the fairways have proved invaluable with proven increase in moisture content and I would encourage the use of a penetrant surfactant programme (Bi-monthly) through the off-season months, November to March. This will increase the efficacy of the surfactant affect going into next season and help allow a much greater flexibility in application throughout 2020.

## Bunkers

- Bunkers are consistent over the course with a number having been renovated recently. The style and quality are consistent and provide both a golfing challenge and aesthetic impact.

## Pathways

- Natural pathways are very well managed and ecologically are proving invaluable, I would encourage an expansion to as many natural grass pathways and wildlife corridors being introduced as the small maintenance team could manage considerately.

## Rough Grassland

- Rough Grassland management where practiced is an excellent addition to the golf course and should be greatly encouraged, this slowing strategy need to be re-energised and increased in area and management process. These types of area can only add to the quality of golfing experience at Nairn Dunbar Golf Club.

## Tree Removal

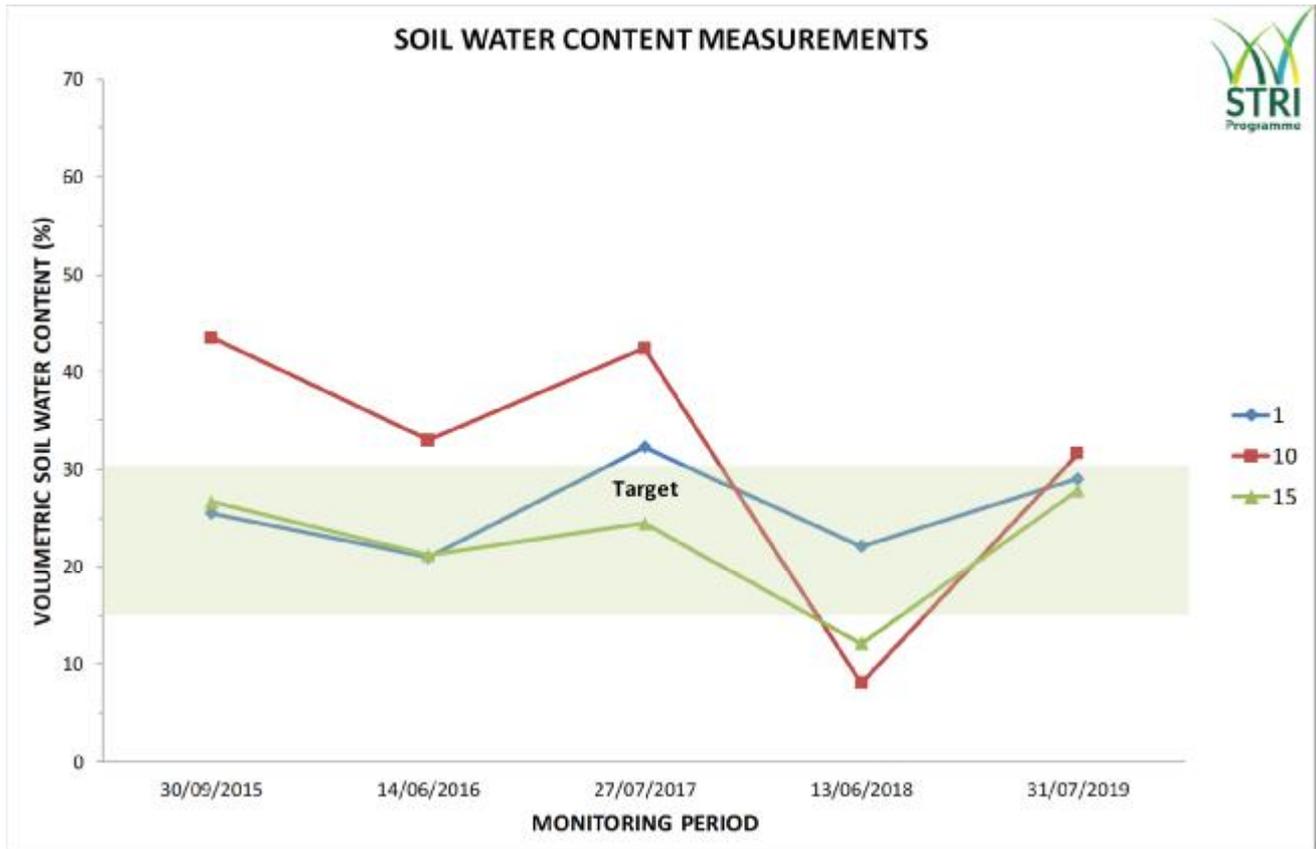
- Tree management is without doubt a major part of all planning going forward at Nairn Dunbar, especially around the finer turf playing areas. The thinning out or removal of areas of dense plantings and extended canopies have increased both light and air movement around these sections and has proven a major success so far. The continued strategic removal or thinning is paramount in its need and must be carried out continually if the true links characteristics are to fully return to the Club.

Signed

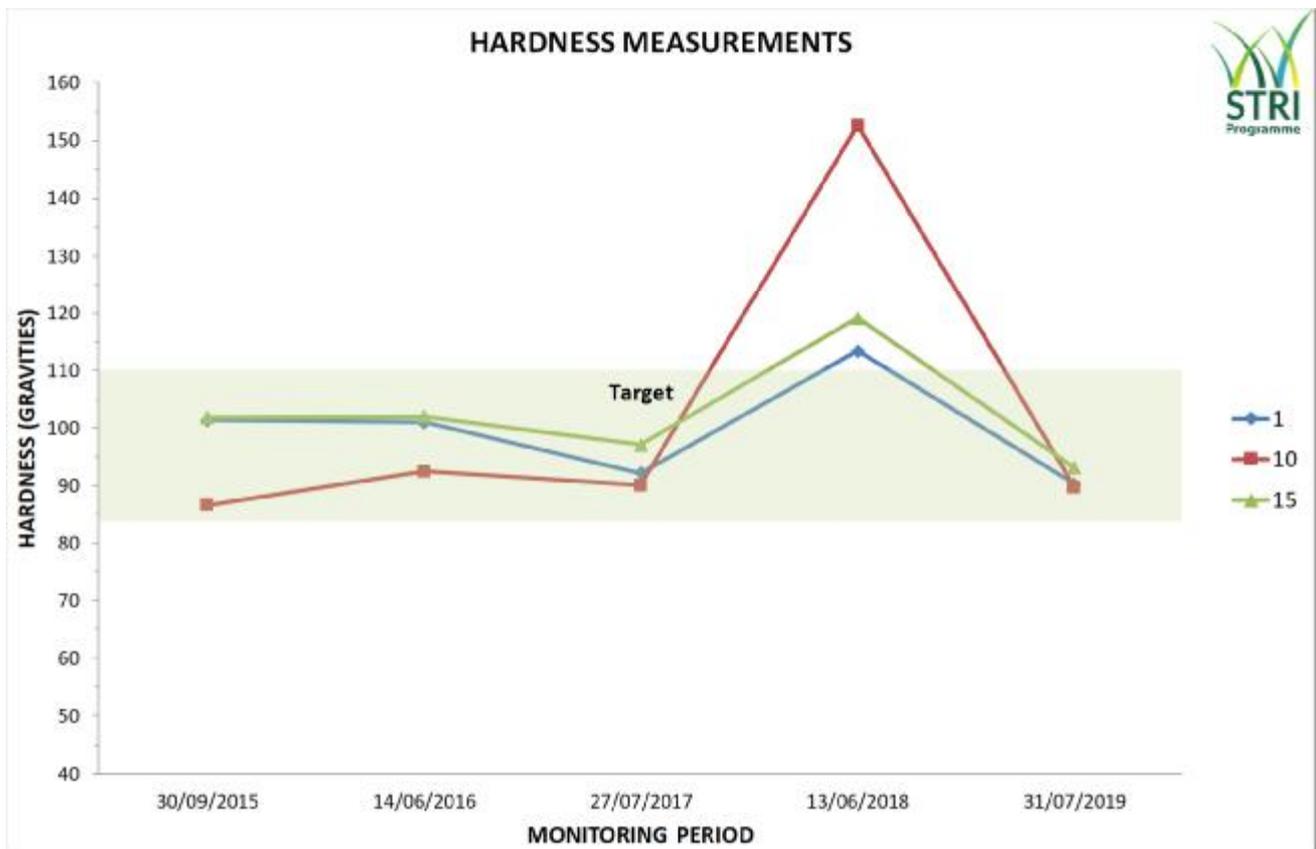
A handwritten signature in black ink, appearing to read "Gary Smith".

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t. +44 (0)1274 565131  
e. [gary.smith@strigroup.com](mailto:gary.smith@strigroup.com)

# Objective Data

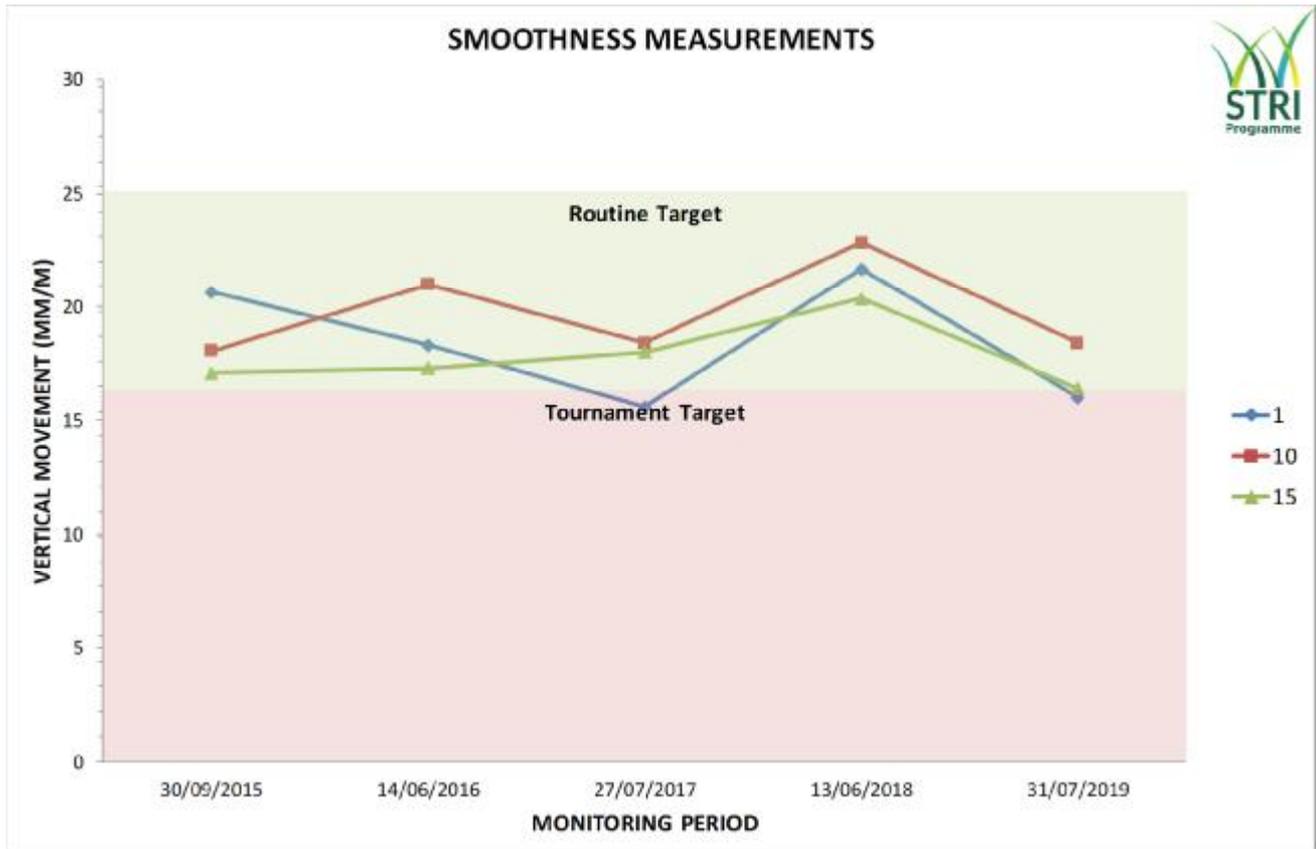


Objective Data Graph 1: Moisture average was in target with all greens at the top end of target, not surprising with the very recent rainfall.

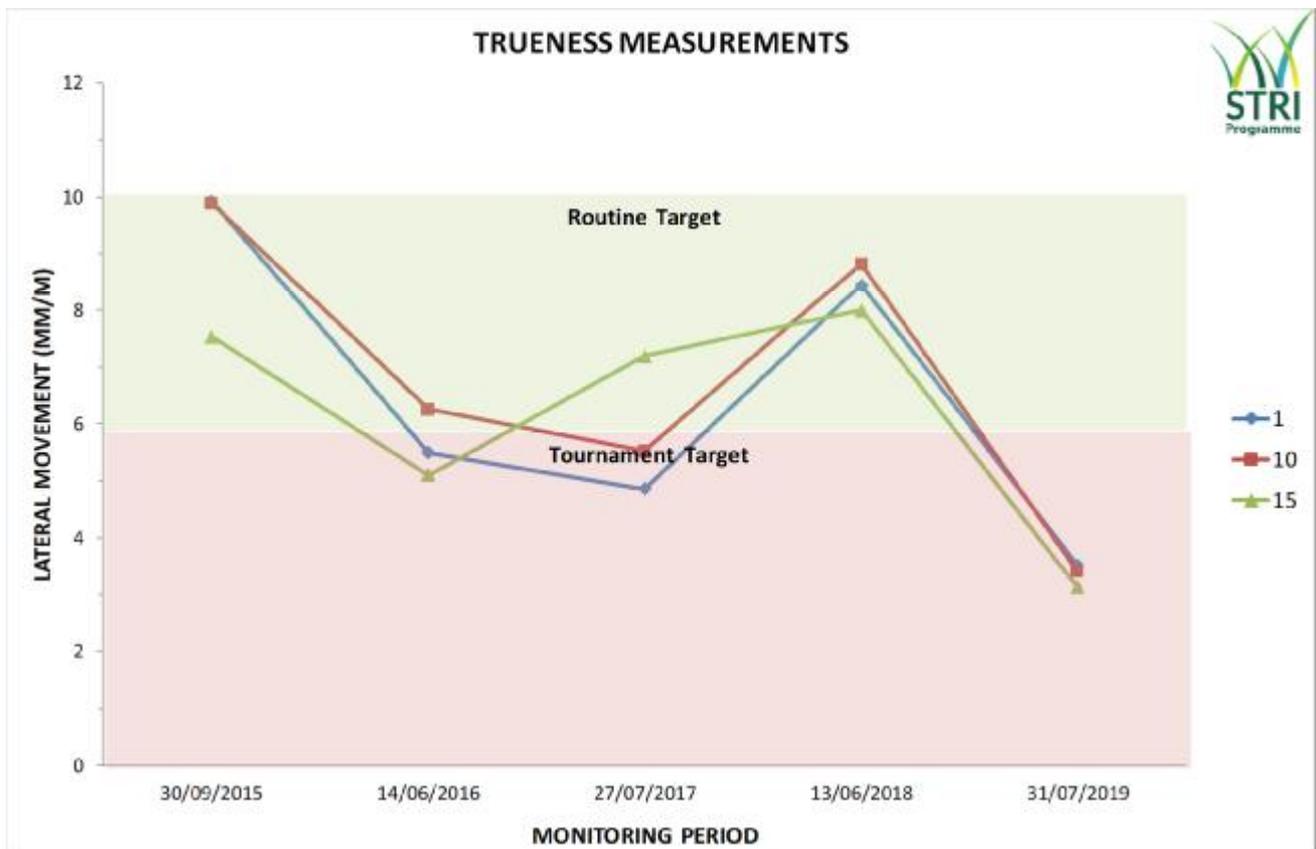


Objective Data Graph 2: Firmness was in target and a great achievement by the maintenance team.

# Objective Data (continued)



Objective Data Graph 3: All greens were well in target and showing great results in challenging conditions.



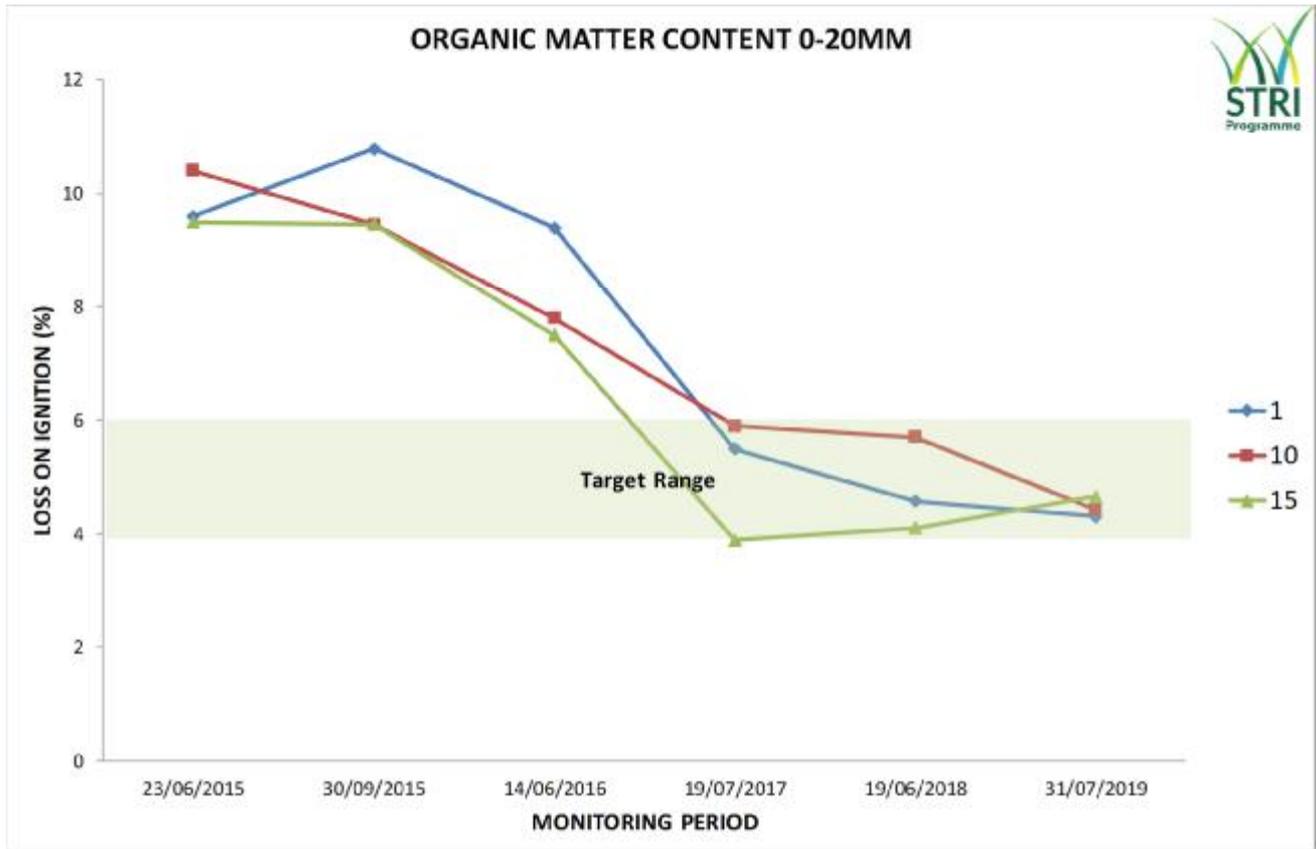
Objective Data Graph 4: Outstanding results, a credit to all at the Club.

Objective Data (continued)

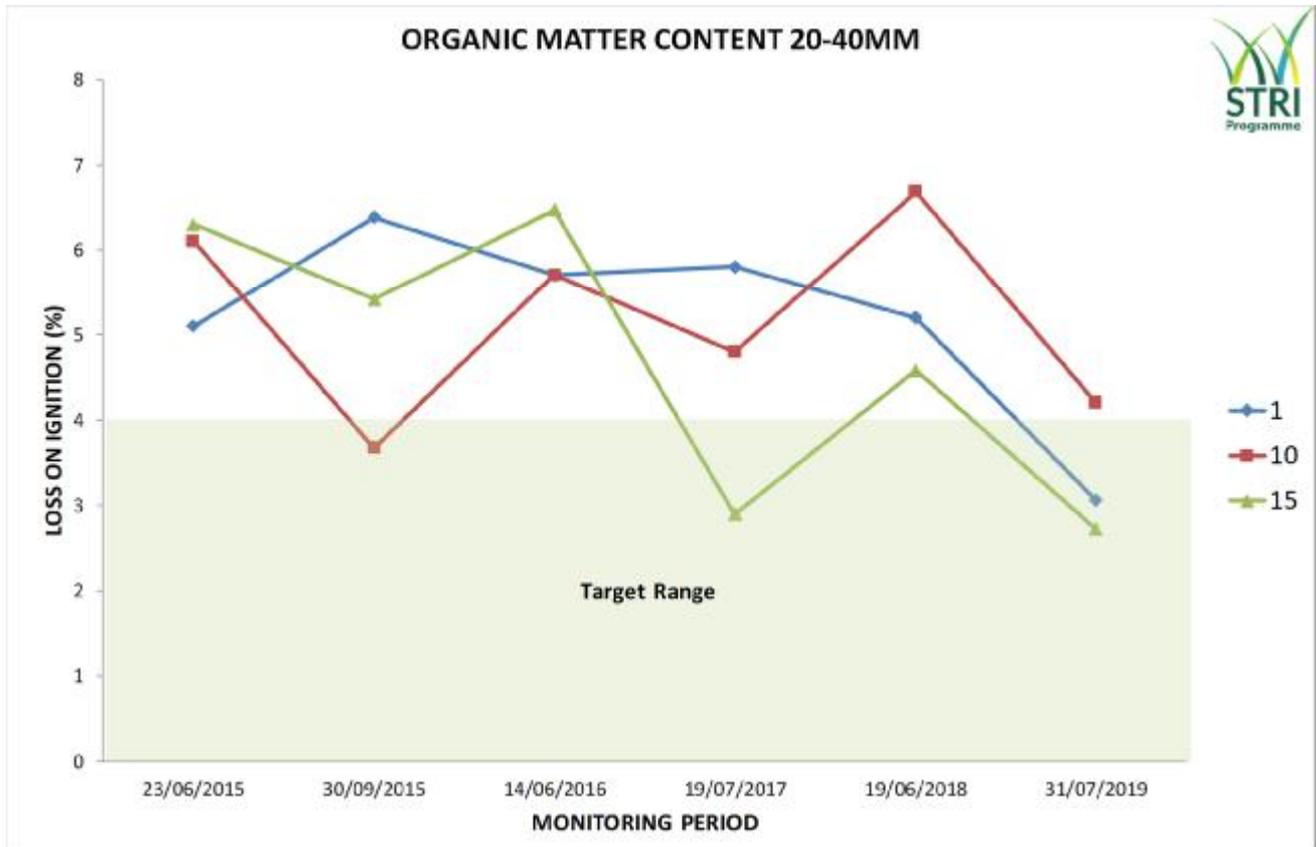


Objective Data Graph 5: Green speed was in target.

# Soils Laboratory Data

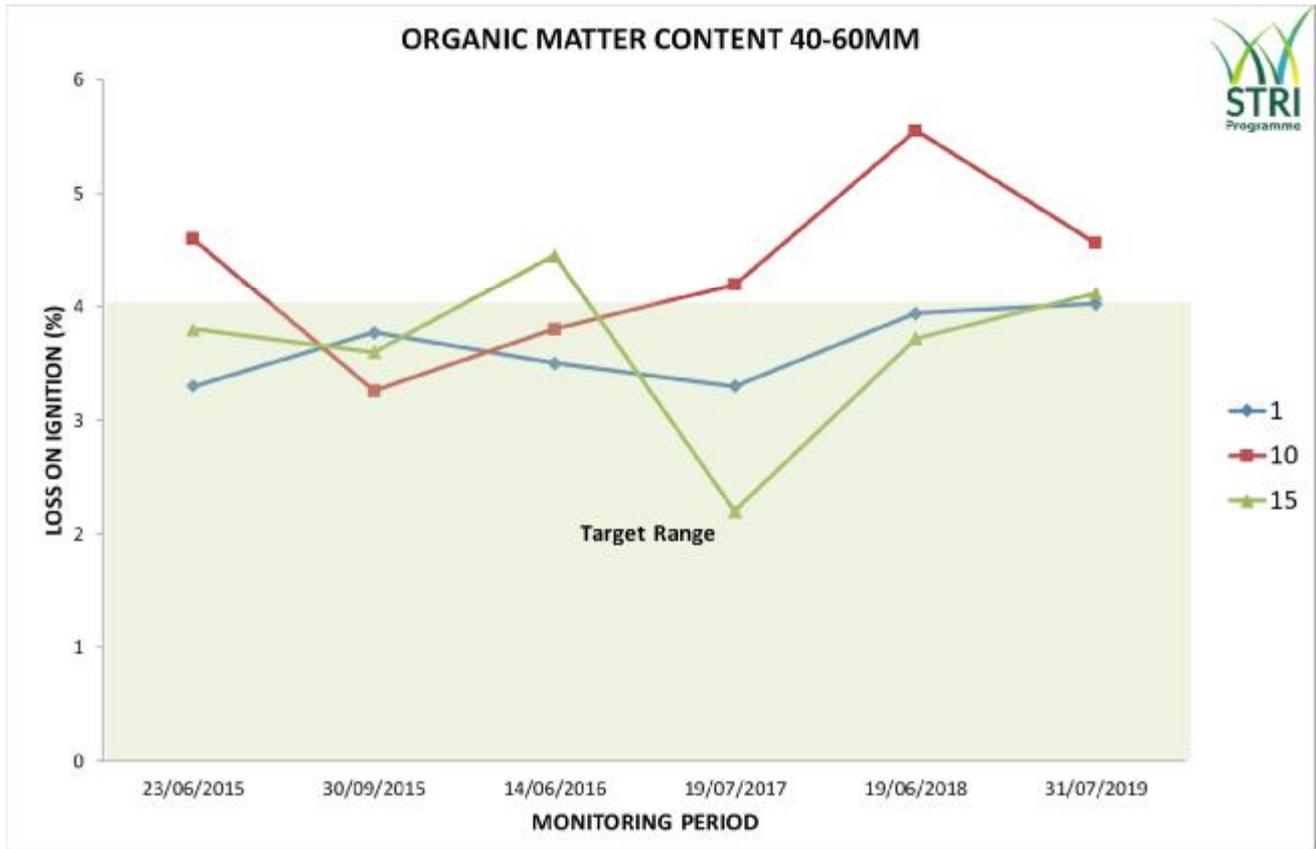


Soils Laboratory Graph 1: An outstanding achievement over a short period and work will continue to manage these low levels.

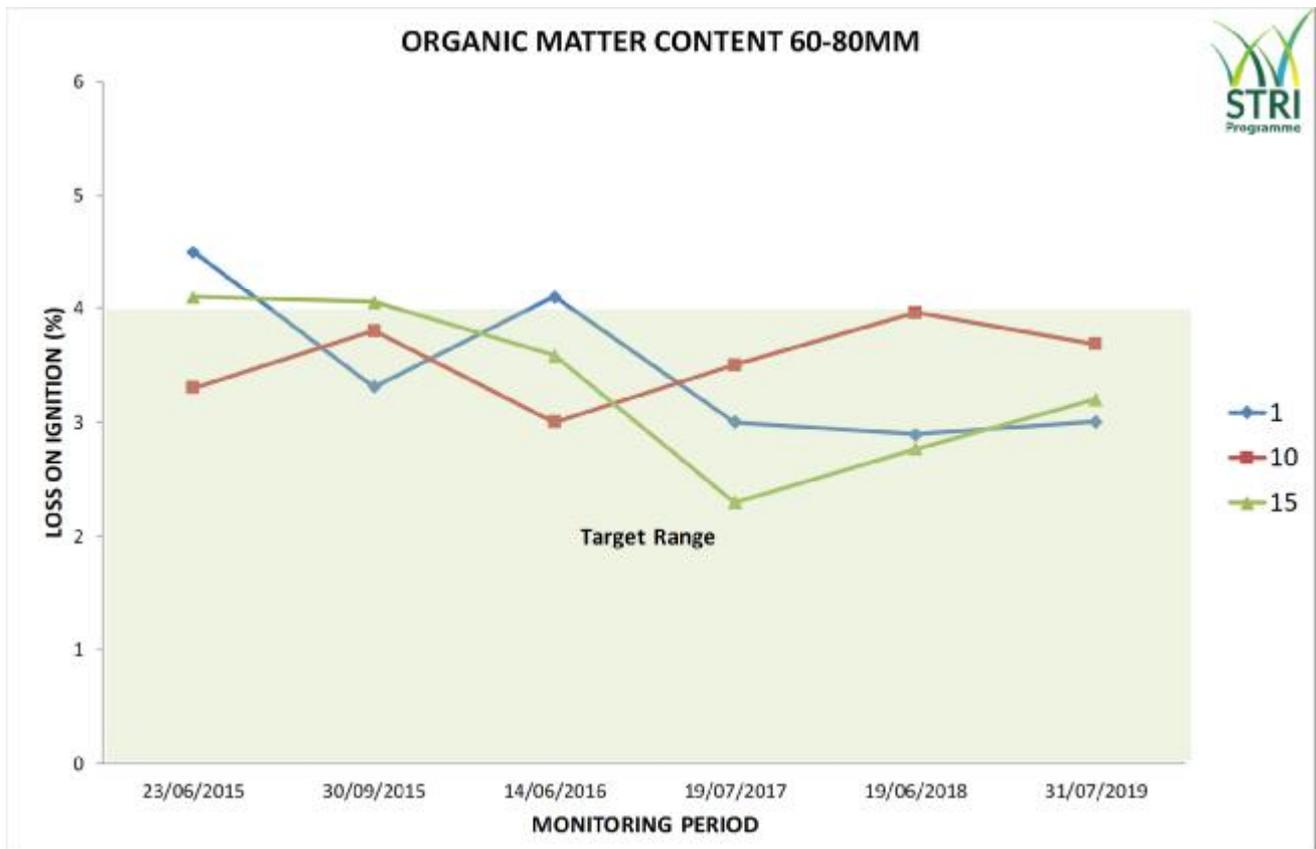


Soils Laboratory Graph 2: This horizon average was in target but variable however no remedial work is required to solve the 0.1 excess in Green 10.

# Soils Laboratory Data (Continued)

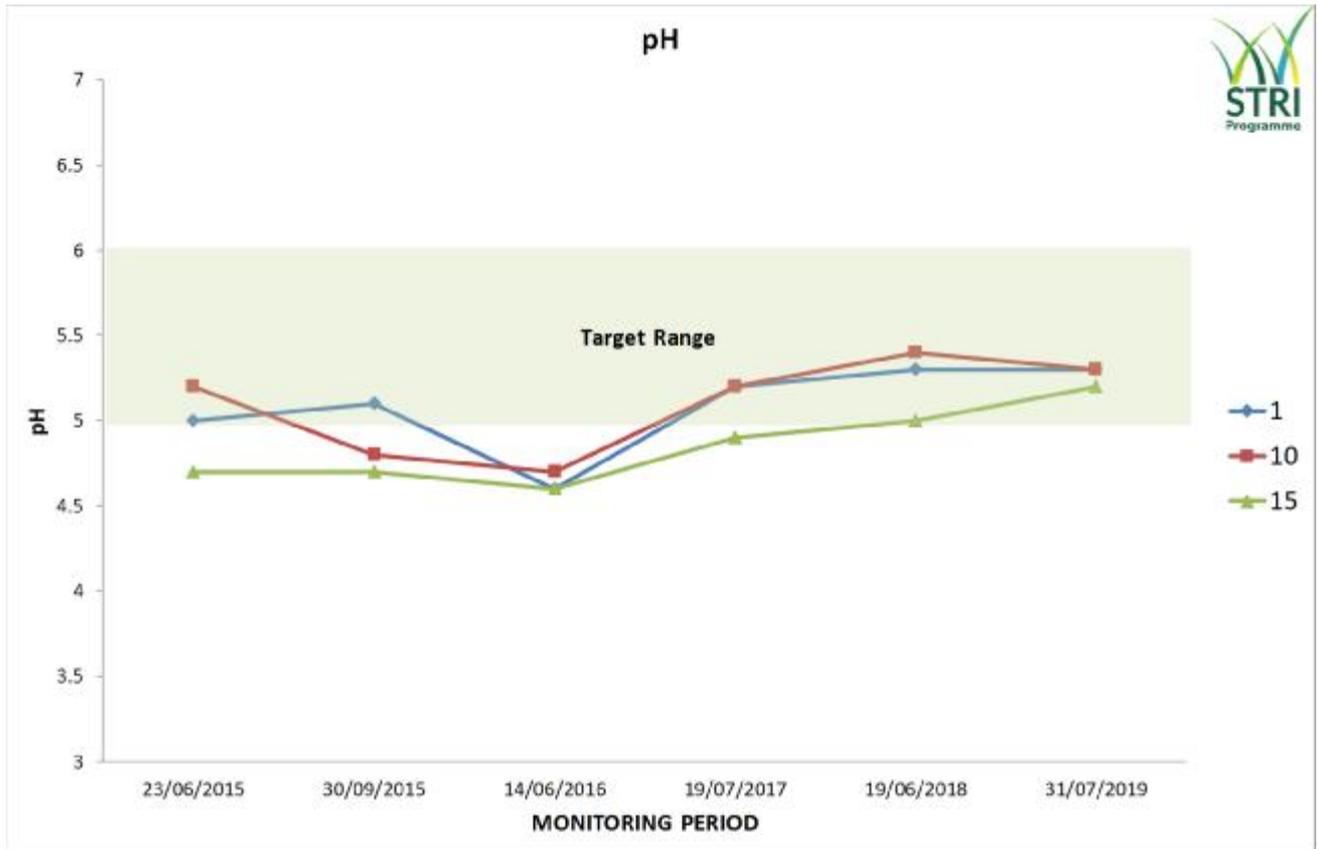


Soils Laboratory Graph 3: Excess of 0.5% and 0.1% are evident and will improve with the routine maintenance in place.



Soils Laboratory Graph 4:

# Soils Laboratory Data (Continued)



Soils Laboratory Graph 5: pH is in target, a gentle increase to 5.5 or above would be a real benefit going forward,

## ORGANIC MATTER CONTENT

CLIENT: NAIRN DUNBAR GC  
ADDRESS: LOCHLOY ROAD,  
NAIRN,  
INVERNESSHIRE, IV12 5AE

DATE RECEIVED: 18/07/19  
DATE REPORTED: 24/07/19  
RESULTS TO: RAW

TEST RESULTS AUTHORISED BY:

Michael Baines, Laboratory Manager

CONDITION OF SAMPLE UPON ARRIVAL: MOIST

| SAMPLE NO | DESCRIPTION | LOSS ON IGNITION (%) <sup>*</sup> |      |
|-----------|-------------|-----------------------------------|------|
| A17900/1  | 1           | 0-20 mm                           | 4.31 |
|           |             | 20-40 mm                          | 3.06 |
|           |             | 40-60 mm                          | 4.02 |
|           |             | 60-80 mm                          | 3.00 |
| A17900/2  | 10          | 0-20 mm                           | 4.43 |
|           |             | 20-40 mm                          | 4.20 |
|           |             | 40-60 mm                          | 4.56 |
|           |             | 60-80 mm                          | 3.68 |
| A17900/3  | 15          | 0-20 mm                           | 4.66 |
|           |             | 20-40 mm                          | 2.73 |
|           |             | 40-60 mm                          | 4.12 |
|           |             | 60-80 mm                          | 3.20 |

\* 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



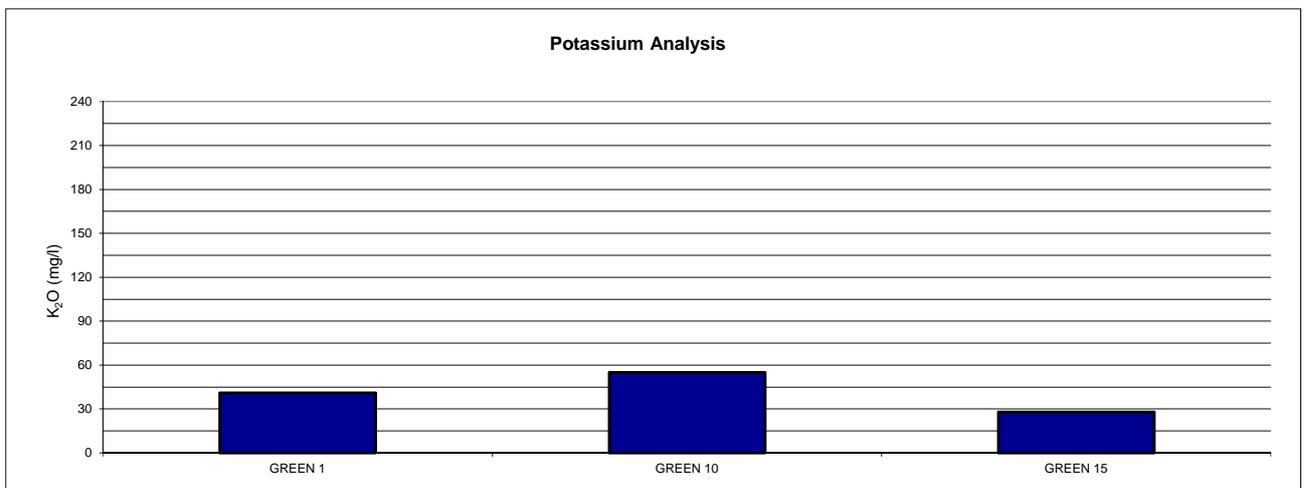
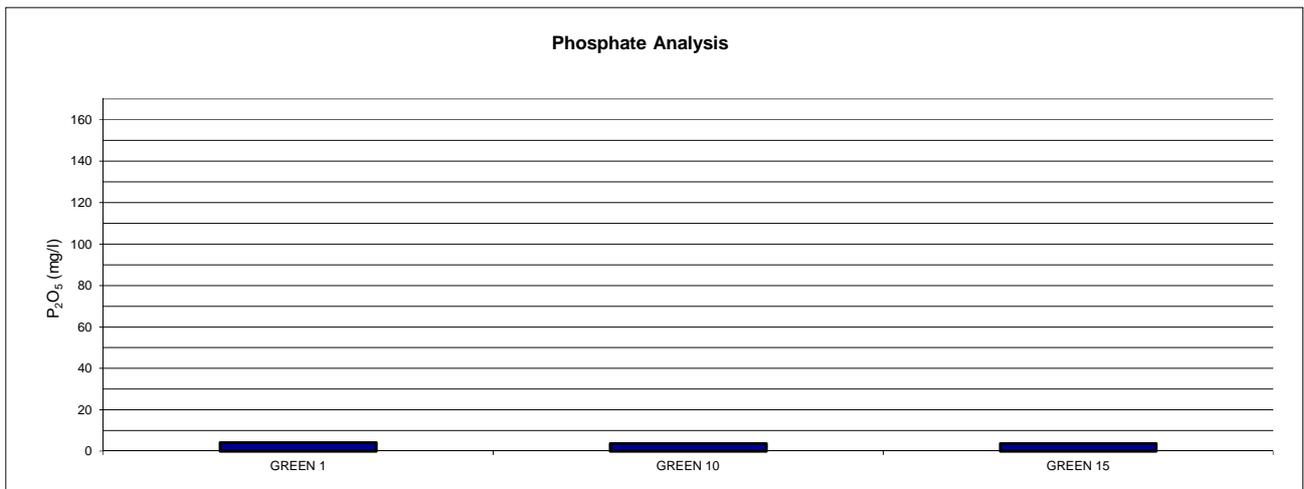
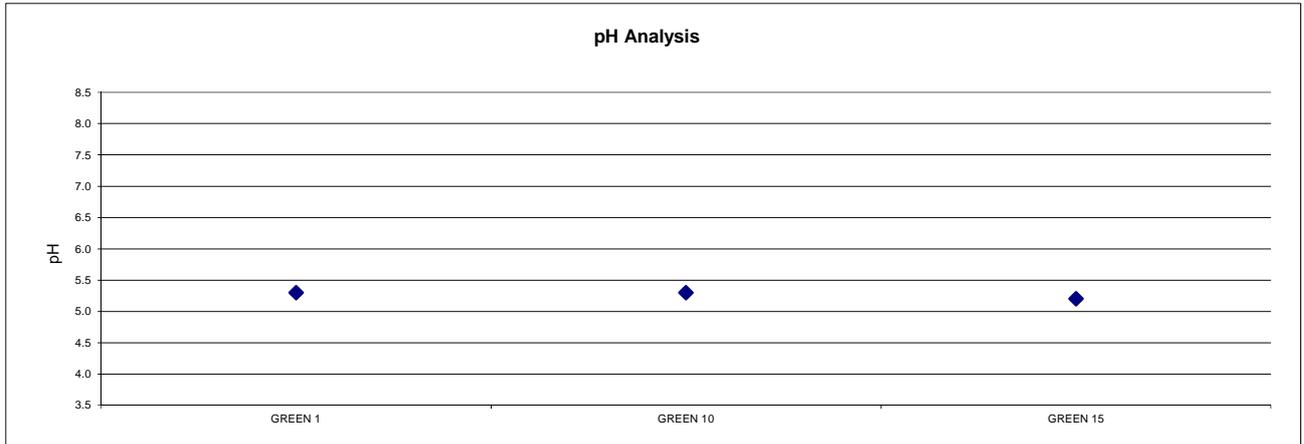
# STRI

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## SOIL CHEMICAL ANALYSIS

## NAIRN DUNBAR GC

Date: 18/07/19



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