Making great sport happen

TYNEMOUTH GOLF CLUB

Advisory Report on the Golf Course incorporating the STRI Programme

Report Date: 9th October 2018
Consultant: Adam Newton

Tynemouth Golf Club

Date of Visit:	Tuesday 18th September 2018	
Visit Objective:	To provide an autumn review of the golf course, collect greens performance data and make recommendations for autumn and winter management.	
Present:	David Steven – Greens Chairman Ian Kerr – Head Greenkeeper	Brian Udberg – Greens Committee Adam Newton – Senior Agronomist
Weather:	Fine and breezy with sunny intervals and temperatures of 17°C.	

Headlines

- Weather patterns have been very challenging this year but the course has fared well and progressed agronomically. Golfer feedback has been very positive this season, especially regarding the greens.
- The greens were performing well, with moisture, firmness, smoothness and greenspeed all being within routine target ranges. Trueness values were within tournament target.
- The surfaces are recovering well from Graden work but a strategy was agreed for the next few weeks.
- Anthracnose disease has a presence on the greens but less so than this time last year.
- Bentgrasses have monopolised on a dry summer and continue to thrive in the greens.
- Elevated watering through summer and reduced sand input have stalled progress with organic matter reduction. Graden sand injection has helped avoid an excessive accumulation of OM.
- Requirements for pipe drainage installation to the 5th and 13th greens were discussed.
- The only notable legacy of the summer drought was turf loss on the 7th and 8th tees.
- Presentation of the fairways and green surrounds have taken a real step up this year.

Key Actions

- Deploy brushing, solid tining, overseeding, sanding and feeding over the next 2 weeks.
- Aerate the profiles through all depths in autumn to manage soil structure.
- Introduce phosphite into the autumn and winter disease management programme.
- An increase in sanding is crucial next year, along with Graden sand injection to drive organic matter down.
- Carry out lab testing to confirm the materials for greens pipe drainage work on the 5th and 13th.
- Take extra precaution with disease prevention around the time of drainage work and ensure that the surfaces are given sufficient time to rest afterwards.
- Returfing would be my preference to repair the drought stressed 7th and 8th tees.
- Tree management remains crucial in key areas to expose playing surfaces to greater sunlight and airflow.

Objective Measurements (Cut and roll @4mm)

Measurement	Average	Target Range
Soil Moisture (%)	25.5% (range 22 – 30%)	15-30%
Hardness (Gravities)	115 Gravities (range 111 – 117g)	85-115 g
Smoothness (mm/m)	25 mm/m	<25 mm/m
Trueness (mm/m)	7.2 mm/m	<10 mm/m
Green Speed	8 ft 9 in	8.5-10.5 ft
Organic Matter 0-20 mm (%)	9.1%	4-6%
Organic Matter 20-40 mm (%)	5.6%	<4%
Soil pH	5.3	5.0-6.0
Phosphate (P_2O_5)	17 mg/l	>10 (mg/l)
Potassium (K_2O)	51 mg/l	>30 mg/l

Key: In Target | Marginal Variance | Out of Target

Photo Observations and Comments

Figure 1: The greens were putting well and of good density and health. Feedback through the summer has largely been very positive, but slightly elevating greenspeeds would be desirable. There was a notable improvement in surface quality when compared to this time last year.

Figure 2: Graden sand injection work went well and the surfaces had recovered in the most. The only exception was the sand based 7th green where recovery has been slower and scarifying lines were still very visible – especially through the shaded back shelf.

Figure 3: Bentgrass populations continue to impress and have strengthened further through the warm, dry summer.

Figure 4: Some light refinement work would be beneficial whilst growth remains to lift and refine laid bentgrasses.

Figure 5: Disease activity is far reduced coming out of the summer this year which is pleasing considering that disease pressures have been very high after the drought. That said, anthracnose did have a presence on some greens (especially the 2nd) and this must be carefully managed over the coming weeks to reduce the risk of fusarium and anthracnose scarring developing through the autumn and winter.

Figure 6: The 13th green has bounced back very well after being saturated through the winter. I was delighted to hear that plans are going ahead to pipe drain both the 5th and 13th greens this October.

Figure 7: The benefits of Graden sand injection were clear to see in the upper profile. This has offset some of the negative effect of increased summer watering but organic matter levels have seen an increase this year (see appendix).

Figure 8: The texture of the upper profiles was good and rooting was fantastic.

Figure 9: Tighter mowing to the green surrounds is providing far better definition, presentation and playability of the green complexes.

Figure 10: The course has largely coped superbly well with the summer drought with the only serious casualties being grass cover on the 7th and 8th tees. Reparation work has begun to help restore cover but I would suggest that returfing would be the best solution. This would also provide an opportunity to relevel the surfaces.

Figure 11: The sand based 7th green is more prone to the leaching of nutrients and water and consequently turf is often weaker than the other greens. The back section of the green is particularly weak due to the influence of shading from trees. It was no surprise to see fusarium patch disease occurring in this area at the time of the visit.

Figure 12: The fairways have come through the drought remarkably well. The presentation and texture of the fairways has seen a real improvement this year in response to new mowing equipment.

Recommendations

Greens

- Feed the greens with Sustane 5:2:10 as soon as possible to help strengthen the turf.
- Plan for a further granular 4:0:8 Invigorator feed to the 7th green alone in mid/late October to help this surface retain better strength through the winter.
- Supplement this with a further pass with the DynaSeeders to all greens injecting browntop bentgrass at 4g/m^2. This will aid infilling of current disease scars (e.g. 2nd) and help introduce more bentgrass into areas where annual meadowgrass populations are currently weak.
- Brush and cut the greens as soon as possible with the Sweep-and-Fill brush to lift lateral growth.
- Cutting heights are ideal at present and should be sustained at 4mm for the time being. Raise mowing heights gradually as autumn progresses, maintaining winter heights at circa 4.5 – 5.5mm.
- Looking to next season, we agreed to slightly reduce mowing heights to 3.5 – 3.75mm routinely to help elevate pace.
- Micro solid tine the greens with 8mm dimeter tines as soon as possible to ease soil tightness and increase sarel rolling inputs to weekly through the autumn/early winter.
- Verti-drain the greens in mid-October to target deep seated compaction. Utilise 12mm diameter tines to approximately 10" depth with heave. Ensure this is done before soils become too wet.
- Sanding totals are a little lower than desired this year (70 tonnes against a target of 120 tonnes) and this has contributed to a slight increase in organic matter (see appendix). Looking to next year, our target should remain at 120 tonnes.
- Plan for 2 – 3 very light dressings (5 – 6 tonnes/ha) over the next 3 – 4 weeks to help smooth out the surfaces and aid infilling of the Graden lines. Ensure these applications are extremely light as smothering the surfaces will make them vulnerable to disease infection.
- Given the increase in organic matter this year, I would recommend that Graden sand injection remains an essential operation for next summer's renovation window.
- Disease management will be the primary focus as autumn progresses. Fusarium pressures are currently high and extra vigilance is now needed to avoid scars developing. Maintain a preventative approach to fungicide application with Instrata Elite application taking place in late September. A further application of *Propiconazole* (e.g. Banner Maxx etc) should then be scheduled for mid-late October prior to the start of drainage works on the 5th and 13th greens. If disease pressures remain high through November, then consider application of *Fludioxonil* (e.g. Medallion).
- Maintain iron sulphate treatments through the autumn and winter and tank mix with small quantities of ammonium sulphate during favourable weather windows to aid sward recovery.
- The merits of phosphite application were also discussed and I would recommend that this is introduced into the disease management programme and tank mixed with iron applications through the autumn and winter. Make the first treatment as soon as possible, then continue on a monthly basis through the winter.
- As discussed in my last report, I would recommend that you vary pin locations on the greens as much as possible through the autumn and winter to spread wear better. My spring visit highlighted that wear is too concentrated through the central sections of greens through the winter and the margins are not utilised enough.

Greens Drainage

- In preparation for the drainage work, send a sample of both the rootzone and gravel to STRI laboratories to test particle sizes and determine bridging factors. This is crucial as it will determine if both materials will bridge correctly.
- I have attached an advisory leaflet detailing drainage requirement in more detail, please contact me if you wish to discuss any of the points further. As recommended in my last report, I would suggest that lateral drains should be introduced at 2m centres to maximise drainage performance.
- Apply the Banner Maxx fungicide 3 – 4 days before work commences to protect the surfaces from disease.
- Apply a dew dispersal agent 2 – 3 days after the fungicide (ideally the day before work commences) to help keep the surfaces dry and dew free through the drainage work. It is crucial that this is not applied before the fungicide as this may hinder chemical uptake.
- Once turf is lifted over the drain trenches, ensure this is stored in a well aerated, open area with plenty of sunlight.
- Firm each layer thoroughly as it is placed in the drain trenches, then aim to get the turf back on to the green as soon as possible. Place this flush with (not proud of) the surrounding turf.
- Rest the greens from play for 2 – 3 months after to allow turf to knit and the surface to strengthen.
- There will inevitably be some topdressing work needed through the latter part of winter and spring to perfect surface levels.

Soil Chemical Analysis Results & Nutrition

- See appendix for lab sheets.
- Soil pH has reduced slightly over the last year from an average of 5.5 to 5.3. These values are ideal and no adjustment is needed. We must however keep an eye on the 7th green over the coming year where pH is lower (pH5).
- Phosphate levels were adequate and there is no need for phosphate input for at least 12 months.
- Potassium levels were satisfactory and will be boosted further by the upcoming Sustane application. After this, no further potassium input will be needed until spring.
- The feeding programme is well balanced and delivering good results. The only change suggested would be to switch to water soluble straight forms of fertiliser for liquid feed applications next year. This will improve the accuracy of applications and be more cost effective. Utilise ammonium sulphate through the cooler spring and autumn then urea through the summer.

Tees

- The drought damaged 7th and 8th tees should ideally be relevelled and returfed this autumn with a strong dwarf ryegrass and fescue turf mix.
- If funds are not available for this to be carried out, then hollow coring, pot seeding (with dwarf ryegrass) and topdressing will be needed as soon as possible. Follow this with application of a controlled release granular feed (with no iron).

Pathways

- Make plans to lift and improve surface levels beneath the rubber matting leading from the 4th tee (as discussed in my spring report).

Fairways

- With verti-draining being missed last winter, I would highly recommend that this is reintroduced to the fairways this autumn to maximise winter drainage performance.

Tree Management

- Thin out the tree plantation behind the 7th green this winter to increase sunlight penetration to the putting surface.
- Continue to thin out trees behind the 5th green (as previously discussed) to aid surface drying.
- My previous report made the following recommendations also:
    - Remove 3 – 4 of the elder trees to the top right 14th and look to thin out the row of poplars at drive length between the 13th and 14th holes. At least 50% of these poplars can be removed without impacting on the strategy of either hole.
    - Continue the excellent thinning work at the back of the 4th green this winter to further improve airflow and sunlight and expose the two pine copses.

Bunkers

- I fully support the notion to remove the bunker to the top-right of the 18th hole, along with the 2 adjacent poplar trees. This will allow the sycamore tree to strengthen and become a real focal point of this area. At present, the combination of the bunker and trees represents a double hazard.

Signed

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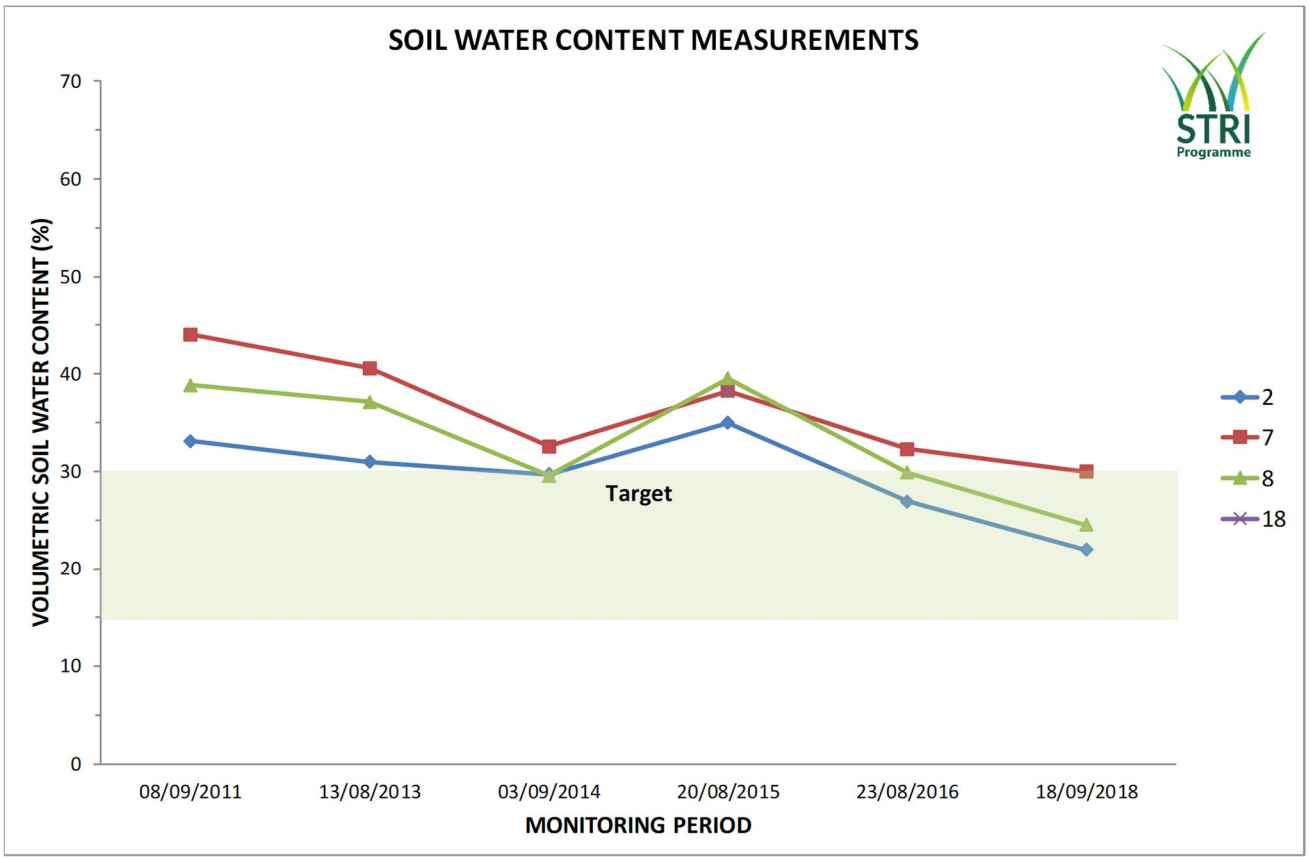
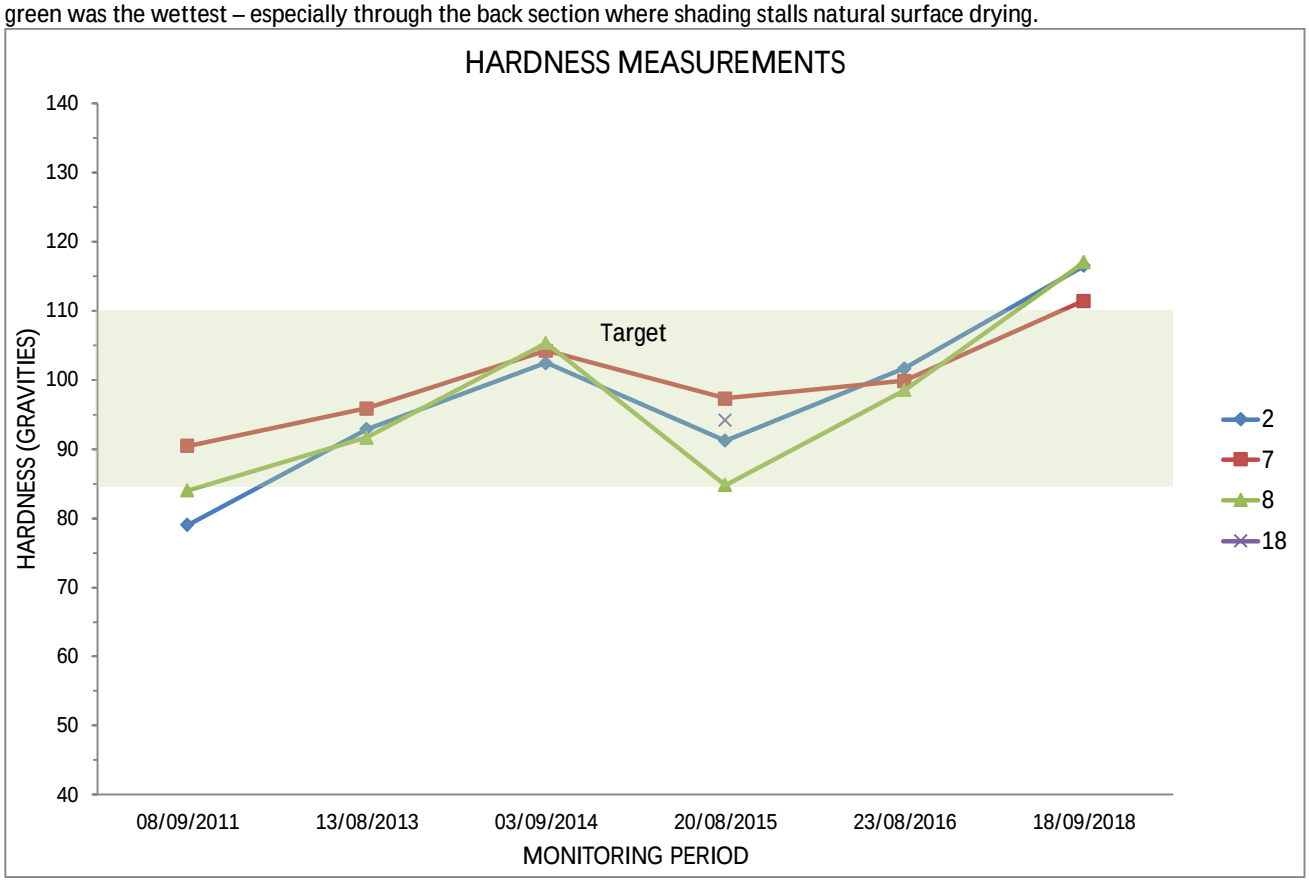
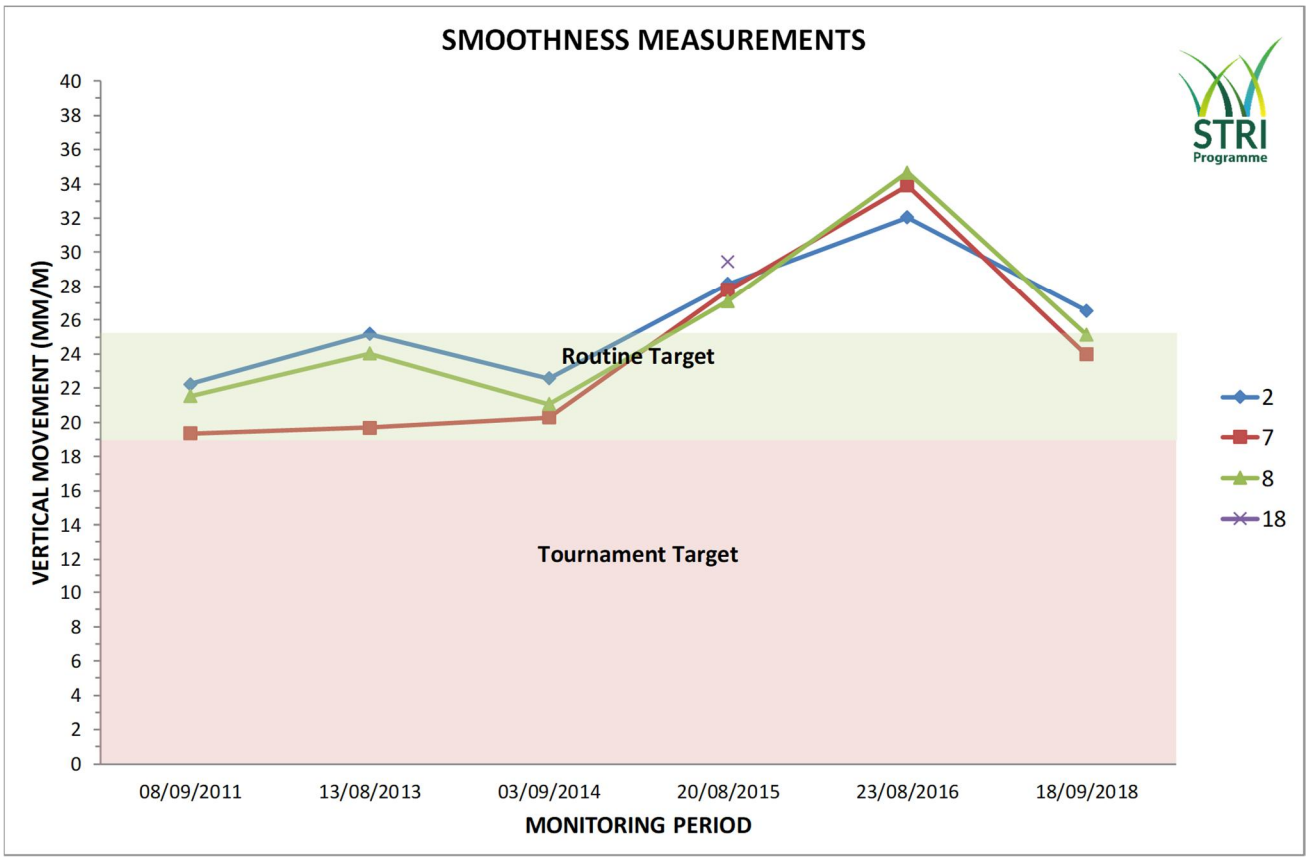
Objective Data



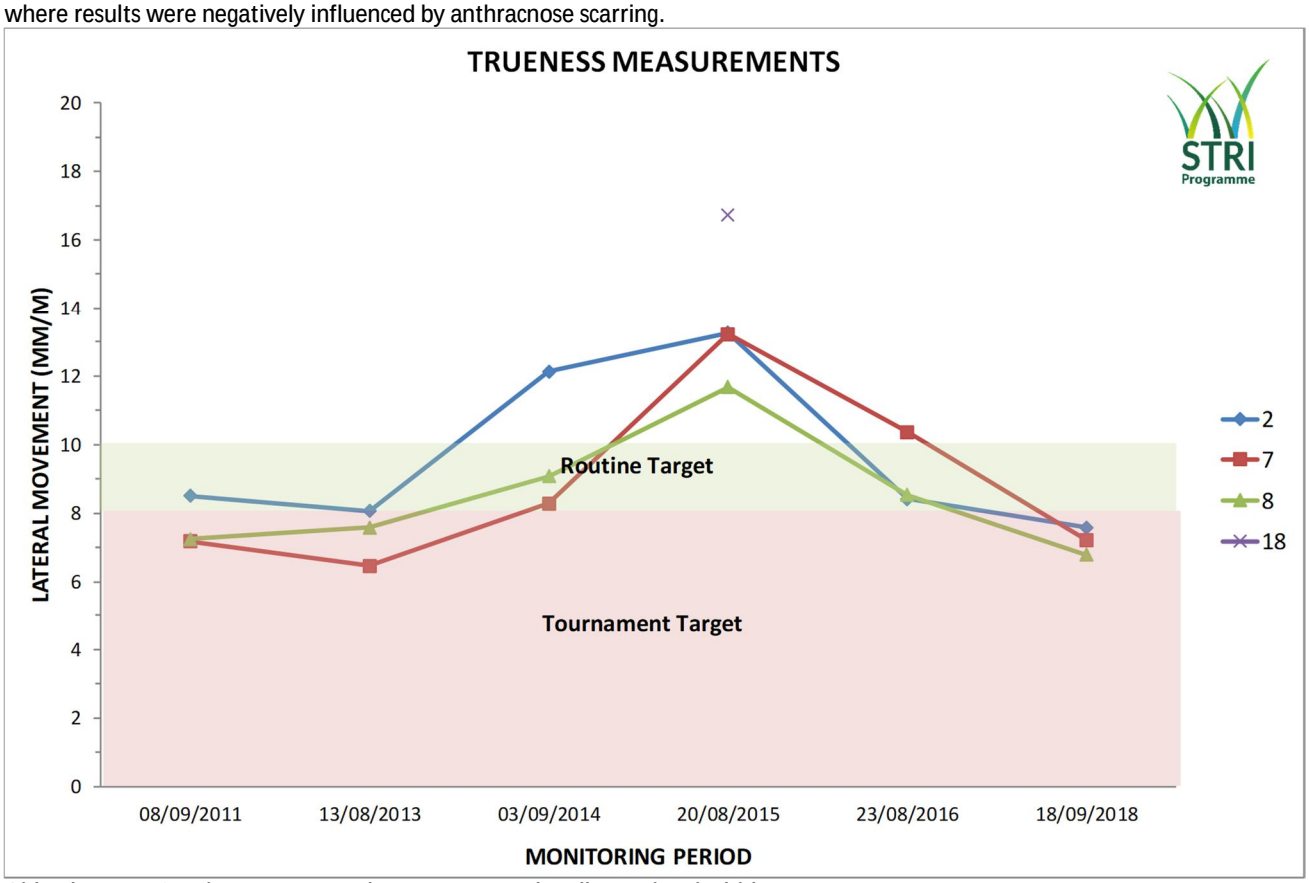
Objective Data Graph 1: Soil moisture content averaged at an ideal 25.5%. The 2nd green was the driest, whereas the sand based 7th green was the wettest – especially through the back section where shading stalls natural surface drying.



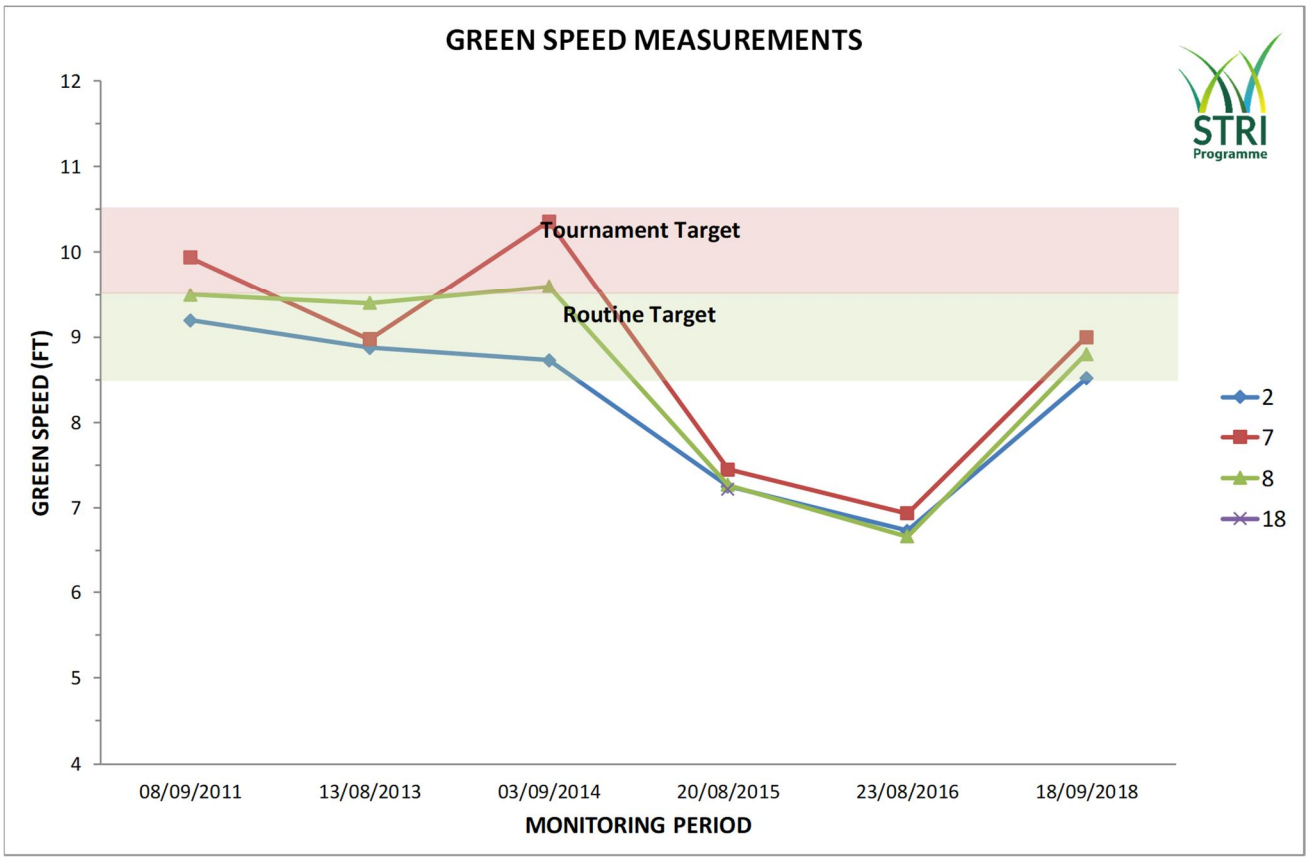
Objective Data Graph 2: The greens were retaining a nice level of firmness (115g average) and this is placing a premium on accurate ball striking when playing into the greens.



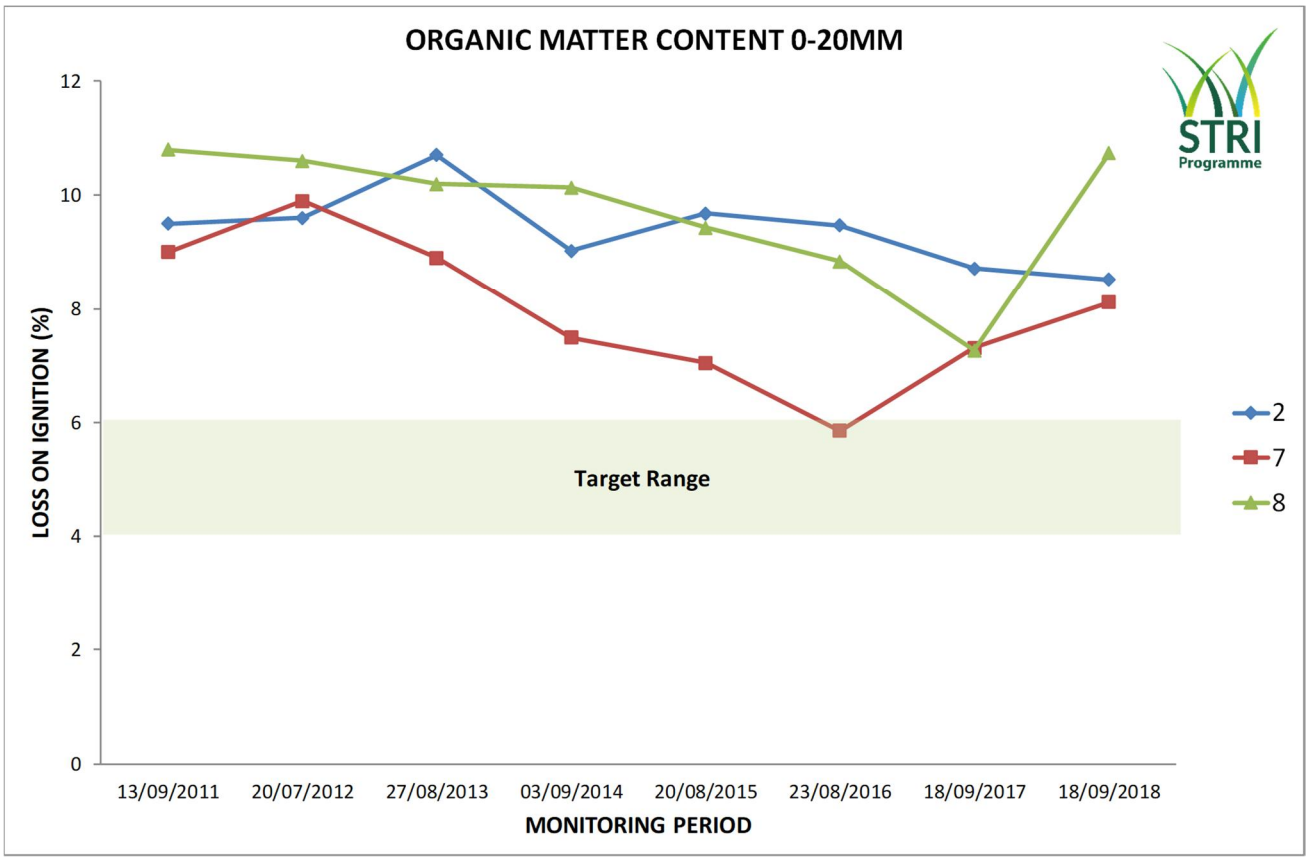
Objective Data Graph 3: Smoothness values were within target range on the 7th and 8th greens but just outside on the 2nd green where results were negatively influenced by anthracnose scarring.



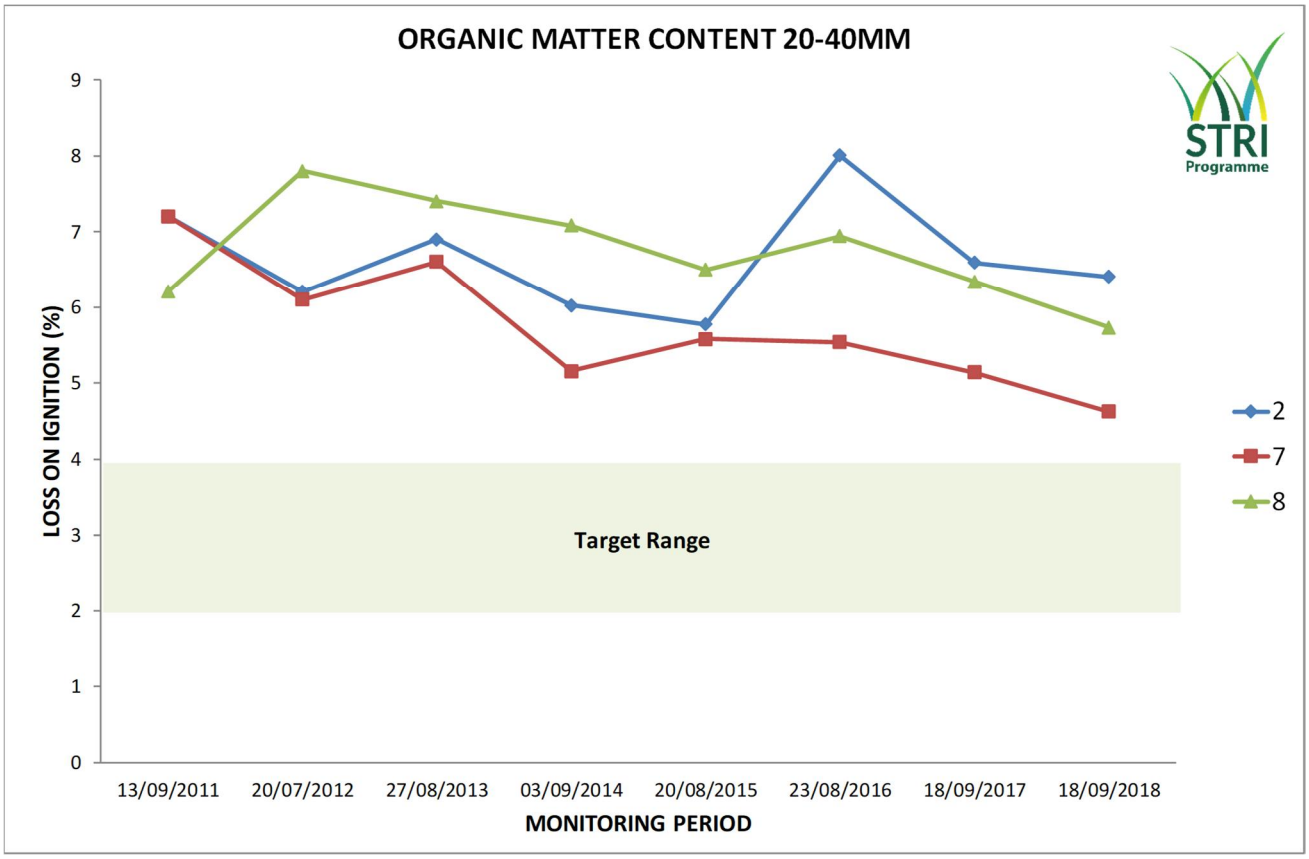
Objective Data Graph 4: Trueness values were exceptionally good and within tournament target range.



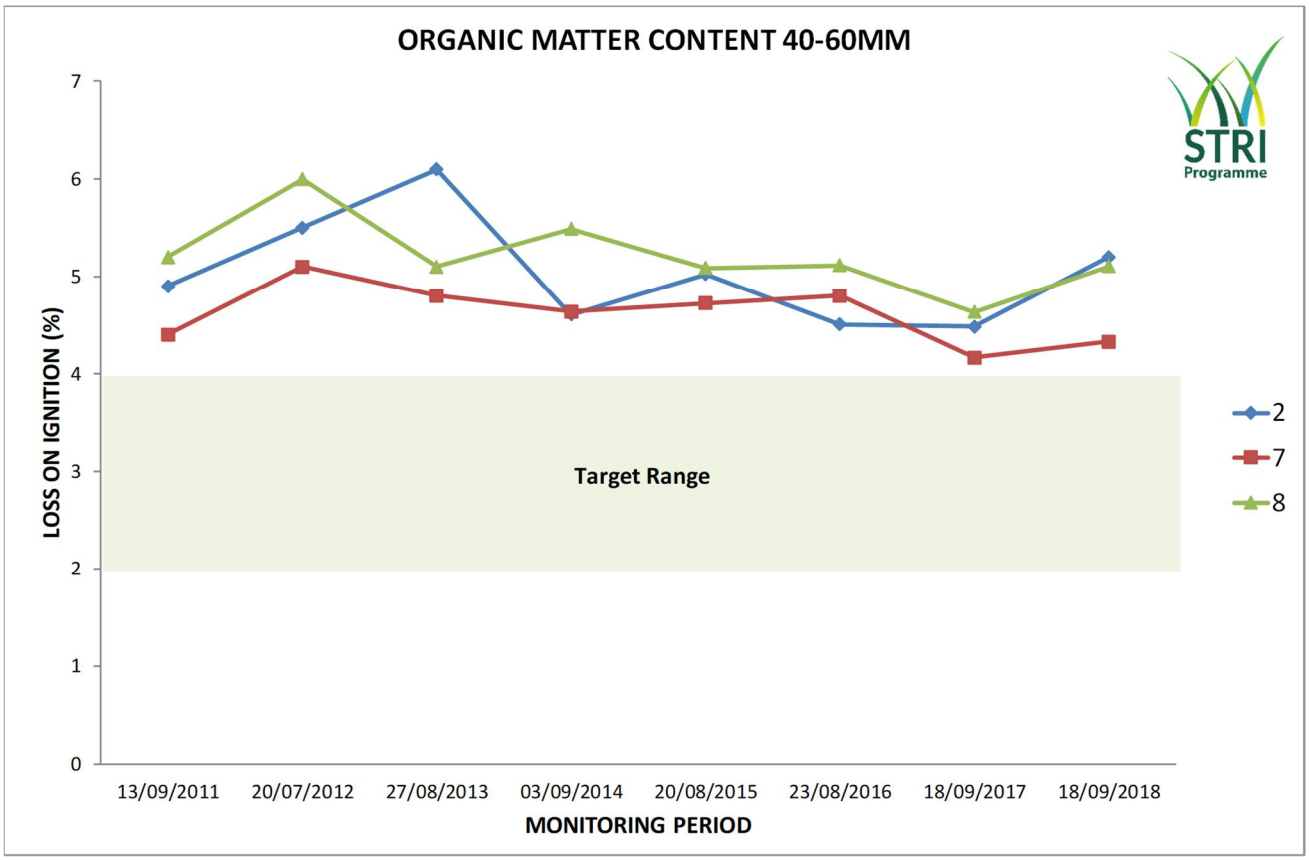
Objective Data Graph 5: Greenspeed averaged at a respectable 8ft 9" after a cut and roll. The 7th was the quickest green (9ft) compared to the 2nd which was the slowest due to it being less smooth.



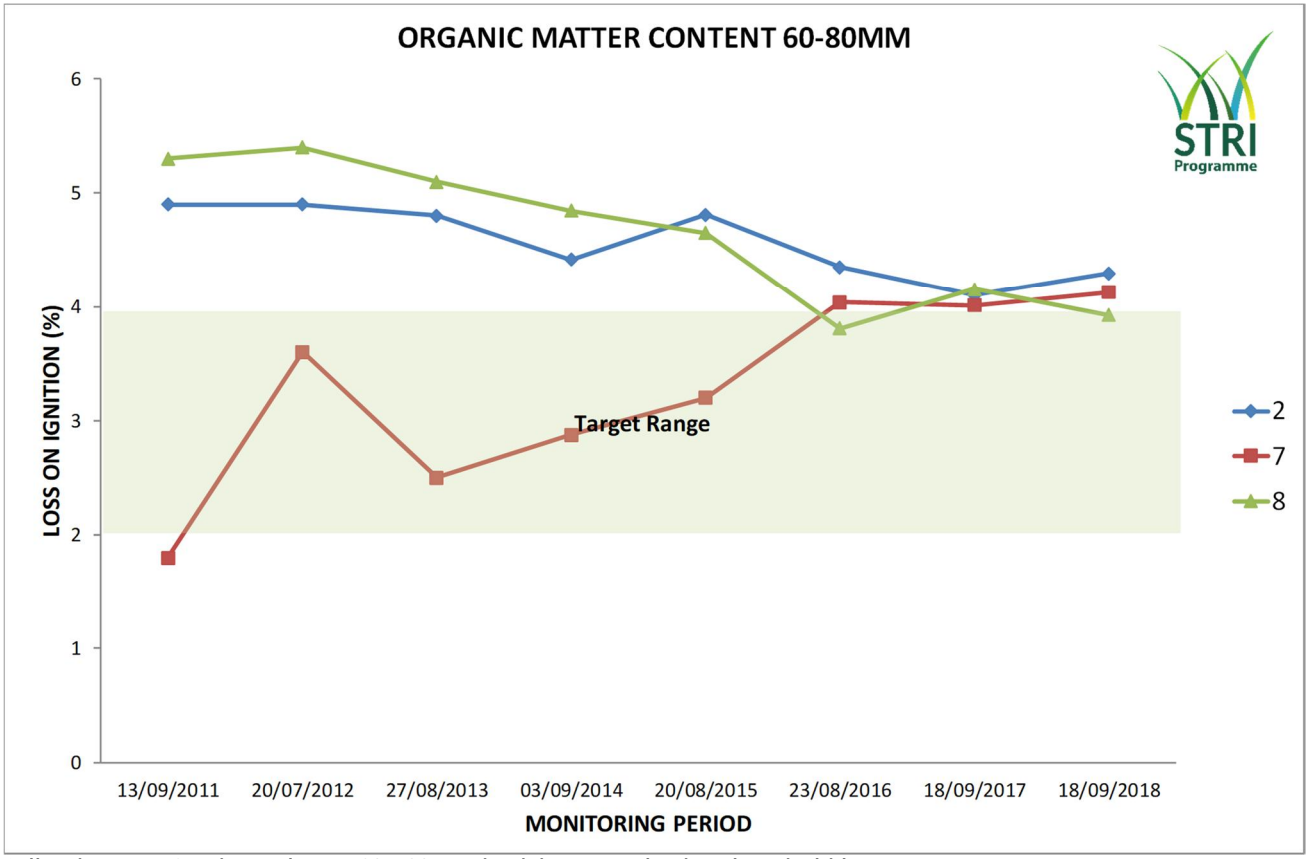
Soils Laboratory Graph 1: Organic matter content in the top 20mm has increased from an average of 7.8% to 9.1% over the last year due to elevated summer watering and reduced sanding through the hot spell. Many Clubs have seen a similar trend this year. Values on the 2nd and 7th have remained relatively static whereas the 8th green has seen a notable increase. All values are higher than ideal.



Soils Laboratory Graph 2: Values at 20 – 40mm depth have seen a pleasing reduction and averaged at 5.6% which is just above target ranges.



Soils Laboratory Graph 3: Values at 40 – 60mm have increased slightly and are on the cusp of target ranges.



Soils Laboratory Graph 4: Values at 60 – 80mm depth have remained static and within target range.

STRI

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SOIL CHEMICAL ANALYSIS

CLIENT:

TYNEMOUTH GC

RESULTS TO: **ARN**

DATE RECEIVED:
10/09/2018

Lab No.	Source	pH	P_2O_5 (mg/l)	K_2O (mg/l)
A17189/1	GREEN 2	5.5	24	41
A17189/2	GREEN 7	5.0	11	58
A17189/3	GREEN 8	5.3	14	55

Mr M A Baines, Soil Laboratory Manager

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

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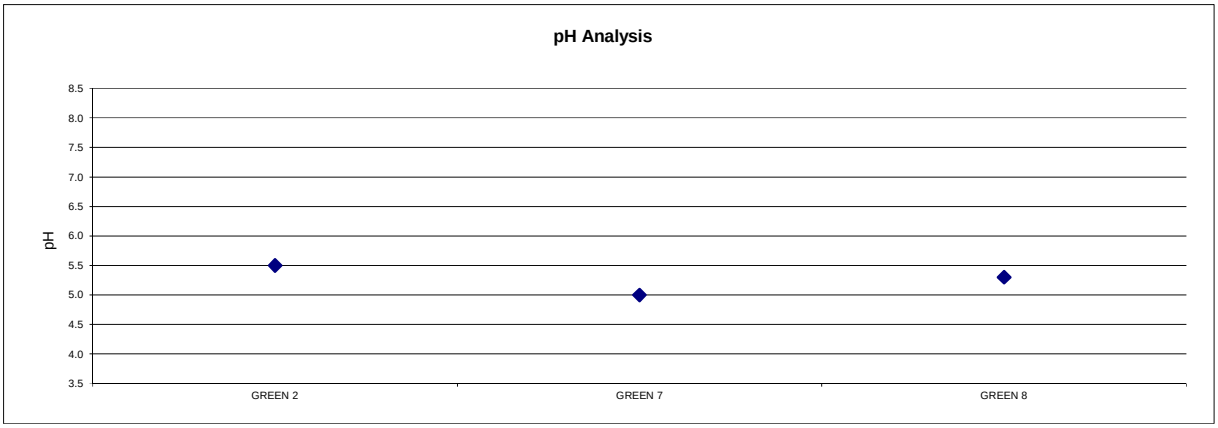
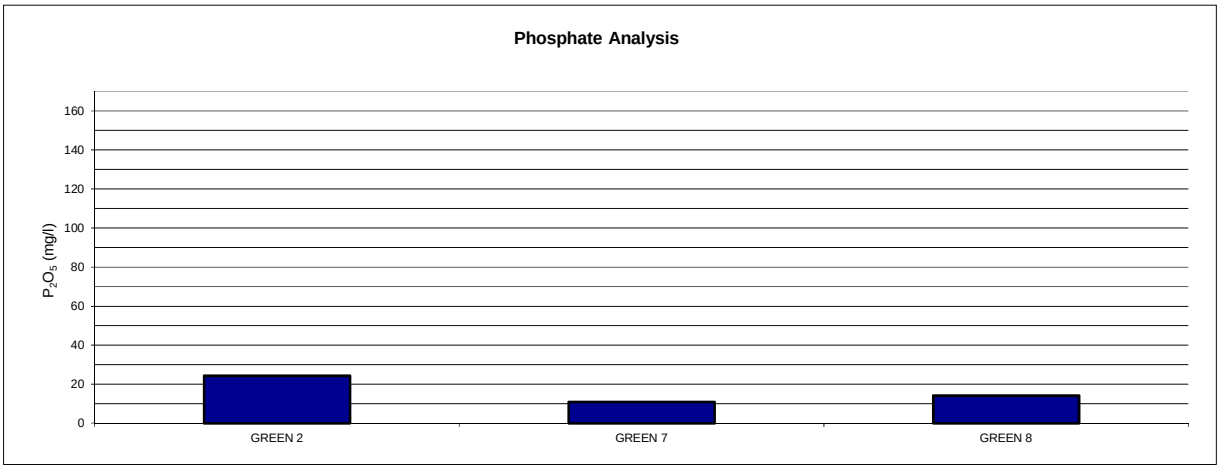
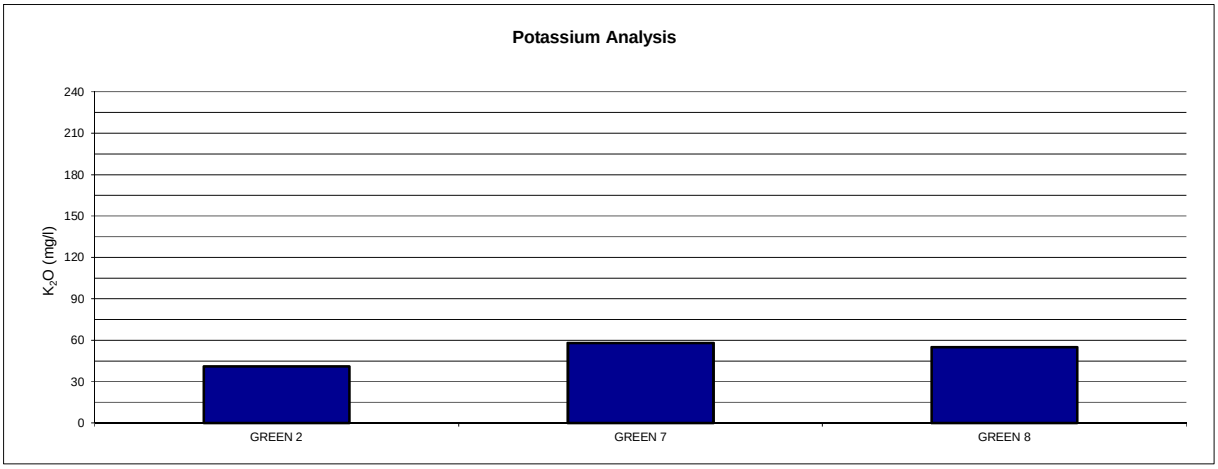
SOIL CHEMICAL ANALYSIS TYNEMOUTH GC Date: 10/09/18







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ORGANIC MATTER CONTENT

CLIENT: TYNEMOUTH GC

ADDRESS: SPITAL DENE,
TYNEMOUTH,
NORTH TYNESIDE, NE30 2ER

DATE RECEIVED: 10/09/18

DATE REPORTED: 13/09/18

RESULTS TO: ARN

TEST RESULTS AUTHORISED BY:

Michael Baines, Laboratory Manager

CONDITION OF SAMPLE UPON ARRIVAL: MOIST

SAMPLE NO	DESCRIPTION		LOSS ON IGNITION (%)*
A17189/1	2	0-20 mm	8.52
		20-40 mm	6.40
		40-60 mm	5.20
		60-80 mm	4.30
A17189/2	7	0-20 mm	8.11
		20-40 mm	4.62
		40-60 mm	4.33
		60-80 mm	4.13
A17189/3	8	0-20 mm	10.73
		20-40 mm	5.73
		40-60 mm	5.10
		60-80 mm	3.92

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

ACCREDITED

Testing Certificate 2159 - 01

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

Technical Note

PIPE DRAINAGE FOR GREENS

Plan the work well in advance and communicate plans to members to minimise disruption and complaints.

Start work as early as possible in the autumn when ground conditions are most suitable. If the ground is worked when conditions are wet it will have a significant impact on the quality of the finished work. There may also be significant damage caused to the haul routes during the works if the ground is too soft. Aim to complete the work prior to Christmas to allow plenty of time for the turf to re-establish along the drain lines before bringing the green back into use in the spring.

The drains may take in excess of 12 months before they start to pull to their full potential but an improvement should be noted straight away. However, further aeration treatments are likely to be required to maximise efficiency of the installed drainage, helping water migration to newly installed pipes. This should be part of a thatch reduction programme involving other elements such as extra top dressing and scarification/hollow tining.

The guidelines for pipe drainage introduction following excavation of drain trenches are as follows:

- Use 80mm diameter plastic pipe at 2-3 metre spacing depending on conditions.
- In cutting the drain trench, allow for 25mm either side of the pipe.
- There is always the risk of drain lines standing out in the summer which is one of the potential problems with pipe drainage introduction compared with redevelopment. Introduce a 60:40 rootzone at a uniform firmed depth of 300mm and a minimum of 250mm.
- To ensure bridging factors are met and to avoid rootzone migration into the gravel over time, it is important to test the suitability of proposed materials in the STRI Laboratory prior to proceeding.
- Whether a blinding layer is required depends on the choice of gravel size. An 8-10mm gauge aggregate could be blinded with 50mm firmed depth of a 1-4mm hard washed grit.
- The aggregate should be a washed, hard aggregate that is not limestone or sandstone.
- In order to dispense with the blinding layer the aggregate size can be reduced to a 3-6mm gravel. As a guide, the blinding layer or rootzone should be around one-sixth of the aggregate size. The depth of aggregate will depend on the drain depth, preferably 600mm but at least 450mm.
- Adequately firm each layer. Once the backfill has been completed, re-lay the stripped turf flush with surrounding ground, not proud in anticipation of settlement. If there is minor settlement then the unevenness can be selectively top dressed. Scalping of the turf should be avoided.
- Finally, give a light roll and top dress. Bringing the green back into play will depend on how quickly the turf knits in. Once the turf is fully integrated and a good surface has been restored, subsequent maintenance should involve tining and top dressing to maintain through flow of water past the initial base of the turf and organic layer into the growing medium and drain below.