

Sports Field Audit Example



AUSTRALIAN SPORTS TURF CONSULTANTS

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Executive Summary

1. Australian Sports Turf Consultants (ASTC), a Brisbane based turf consultancy company, was engaged by [REDACTED] to undertake an independent agronomic assessment of your sports field. The purpose of the assessment was to identify the current condition of your field to help Council and your club maintain and improve the playing surface for its end users.
2. A detailed sports facility audit was conducted by ASTC on 9 June 2019 at [REDACTED]. Testing was conducted at Four (4) Test Locations across the playing surface using the Test Methods shown in Table 2 and described in greater detail at <http://astcs.com.au/performance-testing-tools/>.
3. Turf quality and cover at the time of inspection was rated above acceptable. The desirable turf species across the field was blue couch (*Digitaria didactyla*) which comprised on average 81% turf cover. The largest quantity of weed present was broadleaf carpetgrass (*Axonopus compressus*) with 13 % cover. No bare areas were observed across the field; however moderate to high wear could be seen in the south west corner closest to the clubhouse. Coaches should be reminded to spread training evenly across the entire field.
4. A mean surface hardness level of 63 Gmax, and a peak reading of 80 Gmax was identified across the field. [REDACTED]
5. Mowing height (height of cut) was on average 33 mm across the field. [REDACTED]
[REDACTED]
6. Thatch, which is dead plant material, measured 43 mm within the rootzone [REDACTED]
[REDACTED]
[REDACTED]
7. Very minor surface undulations exist across the field. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
8. Soil nutritional testing, following representative sampling to a depth of 100 mm across the field, the soil showed [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
9. Other: [REDACTED]
[REDACTED]
[REDACTED]

Test Locations

██████████ – Field 1

Physical location: ██████████

Date inspected: 9 June 2016.

Field size: 9,000 m² (0.9 ha).

Field irrigated: No.

Subsoil drainage: No (not observed).

Maintenance grading: Not applicable.

Field usage: Rugby League.

Figure 1 Test locations identified across ██████████ – Field 1. Source Nearmap 2/07/2015

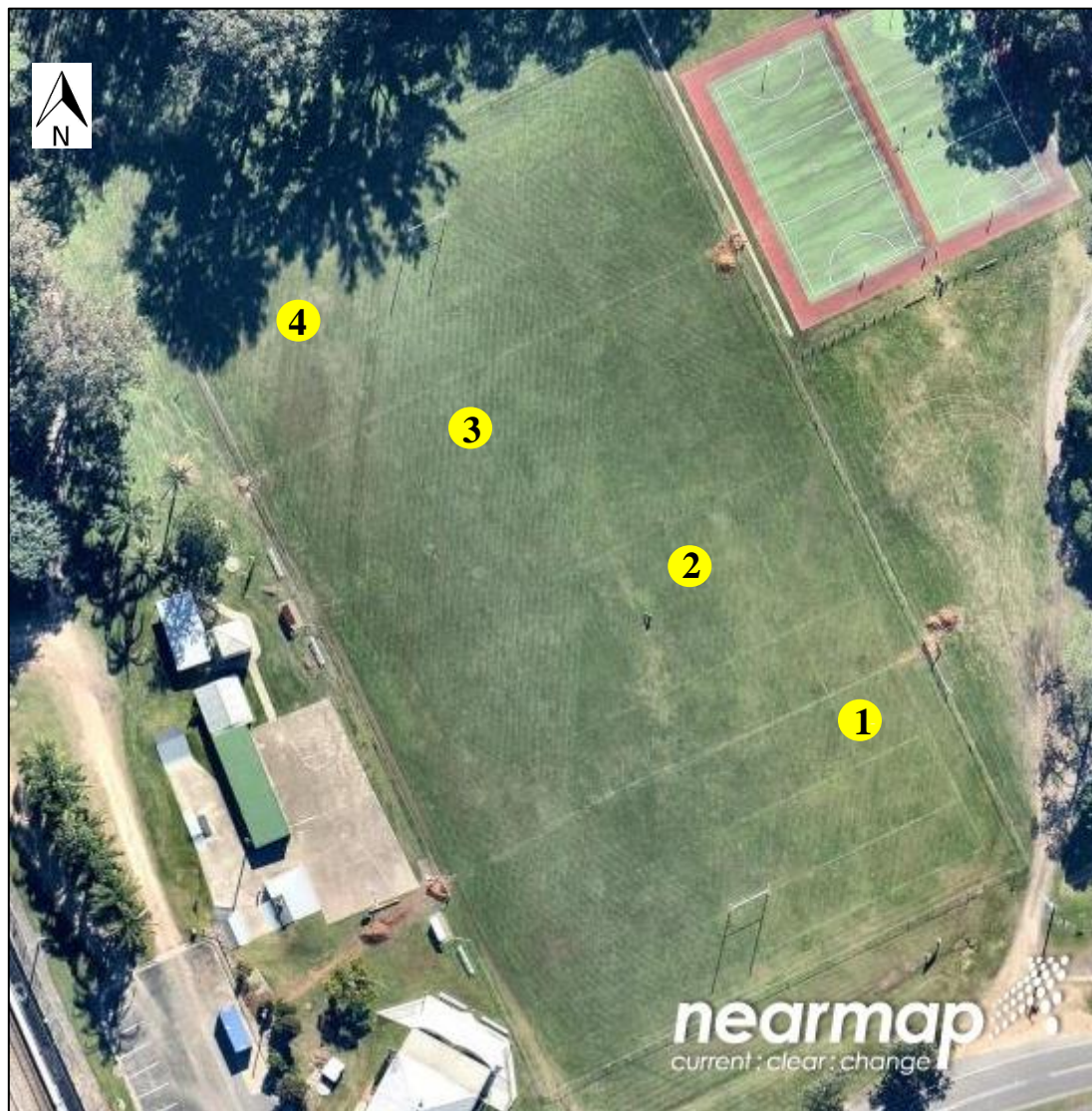


Table 1 GPS coordinates of Test Locations assessed across ██████████ Field 1

#	GPS Coordinates	#	GPS Coordinates
●	████████████████████	●	████████████████████
●	████████████████████	●	████████████████████

Summary of Observations

Red highlighted cells indicate that attention is required in order to meet the recommended range.

Table 2 Summary of data collected across [REDACTED] Field 1 on 9 June 2019.

Parameter	Min	Mean	Max	Recommended Range	Test Method
Ground cover (%)					
Bare ground	0	0	0	>98% start of season; 85% mid-season of desirable turf species. Weeds present <20% grass weeds & <5% broadleaf weeds.	Visual assessment using a quadrat
Green couch	5	2.9	30		
Blue couch	30	80.8	100		
Broadleaf carpet	40	13.3	70		
Narrowleaf carpet	2	2.9	15		
Turf height of cut (mm)	30	33.3	40	20 mm to 40 mm	Toro TurfEvaluator™
Turf quality (rating)	7.5	7.8	8	Turf quality rating of 1 (worst)-9 (best)	Subjective rating
Turf colour (rating)					
Quantitative	8	8	8	Grass Index rating of 1 (worst)-9 (best)	Turf Colour Meter (TCM)
Subjective	5.6	6.9	8		Subjective rating
Hardness (Gmax)					
1 st drop	40	50.8	60	50-130 Gmax. Over 150 Gmax is cause for concern. ≥ 200 Gmax is dangerous.	Surface hardness using a Clegg Impact Hammer
2 nd drop	50	59.2	70		
3 rd drop	50	62.5	80		
4 th drop*	50	62.5	80		
Compaction (psi)					
75 mm*	100	162.5	300	0-200 psi = soft, 200-600 psi = fair, and >600 psi = hard	Hydraulic penetrometer
150 mm*	100	183.3	300		
Soil Moisture (%)	19.3	23.0	27.2	15-30 % by volume	Moisture meter
Infiltration (mm/hr)	400	490.5	600	> 50 mm/hr for club level grounds	Single ring infiltrometer
Surface evenness (mm)	8	9.5	12	level <30 mm over 3 m straight edge (lower club standard)	3 m straight edge and graduated wedge
Soil Profile (mm)					
Thatch depth	40	43.3	50	< 20 mm	105 mm diameter soil corer and ruler
Root holding depth	200	200	200	> 100 mm	
Max. root depth	200	206.7	220	> 180 mm	

Plate 1 Turf quality and percentage ground cover at (a) Test Location 1, (b) Test Location 2, (c) Test Location 3, (d) Test Location 4, (e) view across the sports field looking north and (f) moderate to high wear observed in the south west corner closet to the clubhouse

(a)



(b)



(c)



(d)



(e)



(f)



Soil Profile

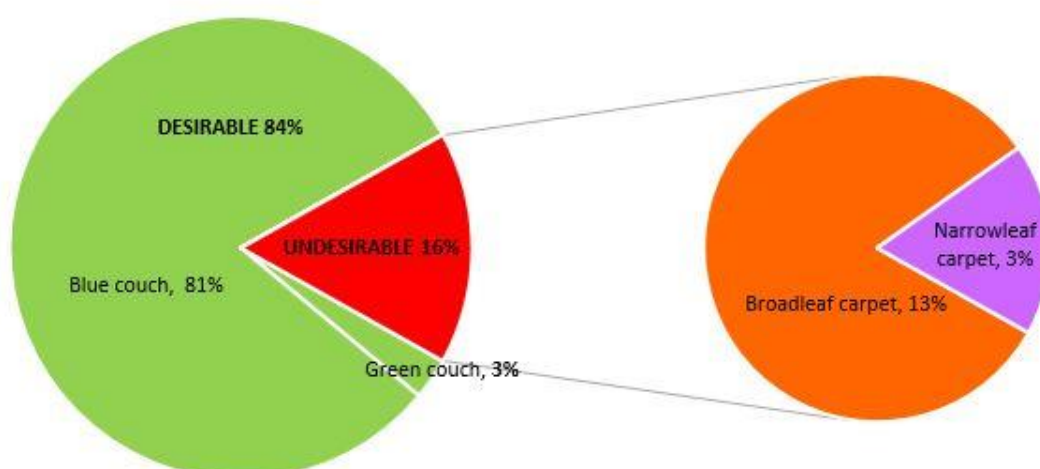
Following soil sampling at three (3) locations across the field, the samples contained [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Plate 2 Soil core samples taken from Test Locations 1, 3 and 4 (left to right) to a depth of 200 mm.



The quantity of turf cover containing largely a stand-alone sward of blue couch was excellent at 81% (Figure 2). The highest amount of weed present within the field was the two forms of carpetgrass, broadleaf and narrowleaf carpetgrass, having 13% and 3% cover respectively.

Figure 2 Graphic representation of the average turf or species composition present across the audited sports field



Disclaimer

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References

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SOIL NUTRITIONAL TESTING



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Client:

Date of Analysis:

Field 1

Analysis	Guideline	9/06/19					Average
pH [1:5 H ₂ O]	6.0 - 7.0	6.7					6.7
Organic Matter %	1 - 3	1.3					1.3
CEC (meq/100g)	3 - 10	3.46					3.46
EC [1:5 H ₂ O] (dS/m)	0.23 - 0.75	0.05					0.05
NO ₃ -N (ppm)	10.0 - 25.0	4					4
Phosphorus (ppm) [Olsen]	7.0 - 14.0	28					28
Potassium [Am.Acet] (meq/100g)	0.2 - 0.5	0.21					0.21
Calcium [Am.Acet] (meq/100g)	5 - 10	2.28					2.28
Magnesium [Am.Acet] (meq/100g)	1.0 - 3.0	0.76					0.76
Sulphur [MCP] (ppm)	11.0 - 20.0	11					11
Boron [CaCl ₂] (ppm)	1.0 - 2.0	0.1					0.1
Copper [DTPA] (ppm)	0.3 - 5.0	1.8					1.8
Iron [DTPA] (ppm)	5 - 120	39					39
Manganese [DTPA] (ppm)	2.0 - 50.0	17.5					17.5
Zinc [DTPA] (ppm)	0.5 - 5.0	3.2					3.2
Sodium [Am.Acet] (meq/100g)	< 0.3	0.17					0.17
Aluminium [KCl] (meq/100g)	< 0.5	0.04					0.04
Chloride (ppm)	< 50	21					21
Ca base saturation (%)	65 - 85%	65.9					65.9
K base saturation (%)	2 - 7 %	6.2					6.2
Mg base saturation (%)	10 - 20%	21.8					21.8
Na base saturation (%)	< 1%	5					5
Al base saturation (%)	< 5%	1.10					1.10
Ca : Mg Ratio	2 - 5%	3.02					3.02

Low	Adequate	High
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Recommendations based on the SLAN Method = Sufficiency Level of Available Nutrients & not the BCSR Method = Base Cation Saturation Method. **Laboratory testing** by Phosyn Analytical, Burleigh QLD. **Source references** Bruce & Rayment (1992), Dept of Ag VIC (2011), Loch (2015), McFarlane (1999), Metson (1961), Rayment & Bruce (1984) and Raymont & Lyons (2011).

GENERAL COMMENTS

The nitrogen level across the field is low and indicate that possible leaching of Nitrate or supplementary nitrogen is required to provide adequate growth. Moderate to high levels of Phosphorous are present within the soil. Higher levels of P reduces both root and shoot growth. No or very little supplementary P should be applied at this time. Adequate to low levels of Potassium are present within the soil. Calcium is low; Calcium deficiencies result in poor root shoot and shoot growth. Magnesium is low; magnesium deficiencies result in foliar chlorosis (yellowing). Adequate level of Sulphur recorded

For further information on turf plant nutritional requirements visit <http://turffinder.com/turf-care/fertiliser>

SOIL NUTRITIONAL REQUIREMENTS

Following soil sampling and analysis the following nutrients are recommended to meet plant requirements. The values are in kg/ha and are based over twelve month period (annual budget).

Primary Nutrients

Element	Kg/ha required
Nitrogen (N)	■
Phosphorous (P)	■
Potassium (K)	■

Secondary Nutrients

Element	Kg/ha required
Calcium (Ca)	■
Magnesium (Mg)	■
Sulfur (S)	■

Micro Nutrients

Element	Kg/ha required
Iron (Fe)	■

Should you have any questions or wish to seek clarification please contact the undersigned.

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