



Notice is given that an ordinary meeting of the Nelson Regional Sewerage Business Unit will be held on:

Date: Friday 22 June 2018
Time: 1.00 pm
Meeting Room: Tasman Council Chamber
Venue: 189 Queen Street
Richmond

Nelson Regional Sewerage Business Unit

AGENDA

MEMBERSHIP

Chairperson	Cr C M Maling
Members	Cr D McNamara Cr T Skinner Cr S Walker

(Quorum 2 members)

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Note: The reports contained within this agenda are for consideration and should not be construed as Council policy unless and until adopted.

AGENDA

1 OPENING, WELCOME

2 APOLOGIES AND LEAVE OF ABSENCE

Recommendation

That apologies be accepted.

3 DECLARATIONS OF INTEREST

4 PUBLIC FORUM

5 CONFIRMATION OF MINUTES

That the minutes of the Nelson Regional Sewerage Business Unit meeting held on Friday, 9 March 2018, be confirmed as a true and correct record of the meeting.

6 PRESENTATIONS

Nil

7 REPORTS

7.1 General Manager's Update 5

7 REPORTS

7.1 GENERAL MANAGER'S UPDATE

Information Only - No Decision Required

Report To:	Nelson Regional Sewerage Business Unit
Meeting Date:	22 June 2018
Report Author:	Jeff Robinson, General Manager
Report Number:	NRSBU18-06-01

1 Summary

1.1 This is the General Manager's update report.

2 Draft Resolution

That the Nelson Regional Sewerage Business Unit:

- 1. receives the General Manager's Update report, NRSBU18-06-01; and**
- 2. endorses the extra costs estimated to complete the consenting process; and**
- 3. instructs the General Manager to manage the Nelson Regional Sewerage Business Unit in accordance with the Draft Business Plan 2018/19 until such time as approval is given (with or without amendment) from both councils.**

3 Purpose of the Report

3.1 This report provides an update of activities during the past three months.

4 Update

Summary update on previous minutes/actions:

- NRSBU18-03-3 Arrange for an independent person to regularly monitor objectionable and offensive odours attributed to the Bell Island WWTP – David Lewis engaged.
- NRSBU18-03-4 Letter to Terry Kreft acknowledging participation – completed.
- NRSBU18-03-5 Initiate discussions with the lessee Raine Farms to cease the lease agreement for land to the satisfaction of both parties.
- Raine Farms was notified in March 2018 that the lease agreement has reached its final term. The notification included an offer that will allow Raine Farms to occupy the land until 31 December 2018.
- Julian Raine has indicated, verbally, that he is keen to continue occupying the land beyond 30 June 2018. A representative of Raine Farms has been invited to speak to the Board at the committee meeting.
- NRSBU18-03-6 Initiate discussions with Nelmac via the Engineer (Alec Louverdis). See agenda item 12 in this report.
- NRSBU18-03-7 Resource consent for the application of bio-solids at Baltune Forest to lapse – completed.
- NRSBU18-03-8 Seek to engage the services of John Marsden for bio-solids consent renewal – not yet actioned.
- NRSBU18-03-9 Andrew Bishop to prepare a letter to both councils regarding Audit NZ recommendation.

General Manager, NRSBU

4.1 Jeff Robinson has resigned and Don Clifford from Beca has been appointed as the Acting General Manager.

New Management Liaison Group

4.2 With the appointment of an interim Acting General Manager (Don Clifford) a separate Management Liaison Group, to assist Don and the two Boards, has been set up comprising Richard Kirby (Tasman District Engineering Services Manager) and Alec Louverdis (Nelson City Council Group Manager Infrastructure) and Don. This group will meet monthly to ensure that there is better coordination between Nelson and Tasman at a technical level.

5 Health and Safety

Bell Island Quarterly H&S Update 01 March - 31 May 2018

- 5.1 Three hundred and fifty-six (356) visitors (based on sign in register), four special visitors, three work experience students from NMIT plus one site tour for an adult student completing an environmental science paper. Five site inductions completed.
- 5.2 Incident/Near miss reports recorded. No major incidents - Minor cuts, slips, H₂S/hazardous gas areas and accidental exposure to waste products were among those reported.
- 5.3 The odour assessment conducted by Stantec in early May to address odour issues at the treatment plant also identified a number of H&S hazards. In particular scope was provided around planning mitigation measures in the near future on the dangerous H₂S levels at the inlet. A hazardous zoning assessment is currently underway to progress the re-connection of the second milliscreen.
- 5.4 Standard Operating Procedures (SOPs) have been further developed to address staff safety working in areas of high H₂S, particularly at the inlet works. These have been passed to a third party for peer reviewing.
- 5.5 Nelmac are in the process of developing a new induction process for staff and subcontractors working on Bell Island. It will take the form of a 30-40 minute PowerPoint presentation and inductees will be required to complete a small questionnaire at the end of the induction. This is expected to be rolled out in mid-June.
- 5.6 Improved signage has been identified as being required at key access areas to operational areas around the plant to reinforce H&S requirements and any particular hazards associated with that area. This is expected to be implemented following the roll out of the new induction process and completion of the hazardous zoning exercise.

6 Odour Management

- 6.1 In the March 2018 agenda we introduced a Topic for the Quarter. With the change in general management we have decided to not introduce a new topic but rather to provide an update on the March topic – Odour Management.
 - 6.1.1 David Lewis has been engaged to carry out independent odour patrols and report on these. The information gathered will be made available to Nelmac, the Best Island residents and used to compile our evidence for the consent hearing. David is a retired Tasman District Council regulatory staff member who was involved with the Bell Island WWTP.
 - 6.1.2 David has completed six odour patrols to date and reported (**Attachment 1**) as follows:
 - A few faint odours (not considered to be offensive) were experienced on Best Island at the eastern and north eastern corners.
 - One slightly offensive odour was experienced on Best Island away from the residential areas.
 - Some faint odours attributable to the Bell Island ponds were experienced along the boundary of Bell Island, none of these were considered offensive.
 - Moderate to strong odours were experienced at the inlet area.

- These odour were considered offensive in the vicinity of the inlet.
 - These odours diminished with distance from the inlet and were not considered to be a source of offensive odour outside the adjacent uninhabitable estuarine areas.
 - The odour patrols will continue and will in future be carried out weekly and as dictated by circumstances (reactive to odour complaints).
- 6.2 John McAndrew (Stantec process engineer who had not previously been involved with the Bell Island WWTP) has completed a preliminary audit of the WWTP (excluding the ponds). A summary of the audit is attached (**Attachment 2**).
- 6.3 The audit has identified a number of health and safety issues, potential areas where odour may be generated and deficiencies in some key plant items. The NRSBU team have met (the Engineer to the Nelmac/NCC contract (Alec Louverdis), Nelmac, NCC Operations staff and AM staff representing the NRSBU and GM Jeff Robinson) and agreed the following actions:
- Ensure that the current H&S procedures on site are up to date and address the hazards identified in the audit findings [Done]
 - Carry out a hazardous zoning exercise [Underway]
 - Nelmac with their sub consultant Stantec to convert the preliminary audit findings into a proposal to provide solutions (including the credentials of the Stantec team to complete this work including John McAndrew). This will include a timeline, priorities and initial cost estimates. This will then be converted into a report to the Board for discussion and approval of funds to complete the required solutions.
- 6.4 The Chairman has added the following questions for discussion:
- The Stantec odour report identifies a number of Health and Safety issues, how long have these issues been outstanding?
 - Why they were not brought to the attention of the Board before now?
 - Will the proposed way forward ensure that there is an effective flow of information to all parties concerned with the operation of NRSBU in the future?
- 6.5 The NRSBU consent renewal application is seeking 5 consents – one being a renewal of discharge to Air. The current consent application for this discharge did not fully identify the information that the preliminary audit has identified because of a history of low number of odour complaints post the last significant upgrade of the plant. The Board's consenting team will update the information provided as part of the development of the overall consent strategy.

Communicating with the Best Island residents

- 6.6 It is time to communicate again with the Best Island residents. It is proposed to send a quick update on progress with:
- Repairs/replacement to odour related plant items
 - Introduce David Lewis and his odour patrols
 - Status of the consents
 - And then talk about a face to face meeting

7 Resource Consents

7.1 Consents to Discharge Overflows of Untreated Sewage (aberrational discharge)

7.1.1 Unfortunately progress on the consent conditions has been hampered by a shortage of resource. As a result of the recent changes and the assigning of a dedicated operational resource for Bells Island this should ensure completion of the necessary actions required to provide compliance. NCC will be working closely with Beca to ensure a successful outcome is achieved.

7.2 Bell Island WWTP Discharge Consent Renewal

The status of this consent is:

7.2.1 Application was notified by Tasman District Council and closed on 23 March 2018.

7.2.2 Fifteen submissions were received which are summarised below:

Number wishing to be heard	10
Number not wishing to be heard	5
Oppose the application	4
Support the application	8
Neutral regarding the application	3
Grant consent	8
Refuse consent	3
Not stated	4

Common themes:

- Odour issues
- More/all treated wastewater should be discharged to land
- Many seek shorter term (5 to 35 years)

7.2.3 Our resource consent (RM171238) has under s91A of the RMA been suspended for up to 130 working days (up to 8 October 2018). This suspension was requested to allow the Board:

- Time to investigate the adequacy of the discharge to air consent renewal application findings
- Time to allow the Board to seek a number of pre hearings with the submitters. These pre hearings provide a good venue for the Board and the submitters to discuss concerns prior to a formal hearing and potentially to find solutions that will satisfy both the submitter/s and the Board.
- A workshop is being planned with the Board and the two Councils in July 2018 to discuss the 2018/19 draft Business Plan and it is proposed to update and discuss with the two Councils the status of the resource consent renewal.
- The GM will provide an update to the Board at this meeting on the status of the consent.

Update and forecast on consultant fees

- 7.3 The following table provides the costs to date plus a best forecast of fees to complete the consenting process. The Board is requested to endorse the forecast of estimated fees.

Service Provider	Costs to date (\$)	Projected to completion (\$)	Total projected (\$)
Cawthron	128,797.42	32,040.00	160,837.42
Duncan Cotterill	92,834.00	75,907.00	168,741.00
MetOcean	48,000.00	8,000.00	56,000.00
Stantec	179,655.16	117,864.00	297,519.16
TDC consents	7,118.70	22,881.30	30,000.00
Ursula Passl	5,654.91	10,345.09	16,000.00
iwi	5,974.97	5,000.00	10,974.97
Odour patrol	2,000.00	4,000.00	6,000.00
Odour review	6,000.00	6,000.00	12,000.00
Contingency 10%			28,000.00
Total	\$476,035.16	\$282,037.39	\$786,072.55

The total approved Purchase Orders to date = \$589,233.75

Balance estimated to complete = \$196,839.00

- 7.4 Consent renewals are deemed to be a capital activity. It is not possible to set lump sums with our service providers due to the uncertainties in the number of pre hearing meetings, duration of commissioner hearings etc.

8 NRSBU Customer Group

- 8.1 The General Manager and Philip Wilson will provide an update on the quarterly Customer Group meeting held on 21 June 2018.
- 8.2 We have been corresponding with Turners and Growers (T&G) who have confirmed that:
- 8.2.1 They have retained the ownership of the (ENZA) site and sold the previous business activities to two confirmed businesses and a third potential business namely:
- Cedenco - a Japanese held processing company
 - NZ Apple Products
 - XYZ who will run the juice plant – at the time of writing this agenda T&G did not have a confirmed buyer.
- 8.2.2 T&G will sign the Trade Waste Agreement with the NRSBU.

- 8.2.3 T&G will put in place a site wide Health & Safety Plan, a Traffic Management Plan and a Wastewater Treatment Plan. The Wastewater treatment plan is important for the Board because it will require the various businesses to work together to ensure that they collectively discharge to our scheme within their allowable limits.
- 8.2.4 T&G will nominate a local Nelson representative to be part of the NRSBU Customer Group.
- 8.2.5 In May 2018 an alert came through to the NRSBU General Manager that there were discharges coming from the T&G site that could put the WWTP at risk. It was confirmed that Cedenco were processing a significant stockpile of apples not fit for export. Based on a Stantec/Nelmac report the GM notified Cedenco to either reduce their discharge load or cease production until their on-site processing was discharging within the agreed limits (even though there is no signed agreement for this site). Philip Wilson intervened and called a meeting which was attended by a T&G representative who updated us on the above sale of business facts. A number of actions were put in place including T&G allowing Cedenco to operate the juice plant and a potential crisis was alleviated.
- 8.2.6 There were some lessons learnt from this process for both the Board and T&G and the outcome was mostly positive however, it did identify the need to have signed Trade Waste agreements in place and clarity around the option of the three Industrial customers being able to share their collective discharge limits when one wishes/needs to have what is called an 'excess discharge' as described in the Agreement.

Agreement for Disposal of Trade waste

- 8.3 It is proposed that the next quarterly topic in the NRSBU agenda be a presentation on the content of the Agreement for Disposal of Trade Waste that the Board signs with the five customers.

9 Operations Report

Contract 3458 (Nelmac and NRSBU)

- 9.1 The activated sludge process was brought back on line during April following a period from late November when the activated sludge treatment area was bypassed to fully utilise the capacity of the ponds during summer.
- 9.2 All six ATAD tanks were cleaned during the summer period.
- A condition assessment of the tanks showed that the internal lining of the tanks are in excellent condition. No signs of deterioration were observed.
 - The inspections showed a significant build-up of heavy sludge/grit in the B and C trains.
 - Sludge removed during the cleaning process was placed within a bunded area in the old aeration basin where the sludge will be solar dried before final disposal.
 - The operation of the ATAD tanks will be reviewed to determine optimal operation procedures to limit the build-up of heavy sludge/grit in the B and C trains.
- 9.3 Nelmac is continuing work on servicing the ATAD and Inlet odour units.
- The one cell of the ATAD biofilter was recommissioned on 16 March 2018.

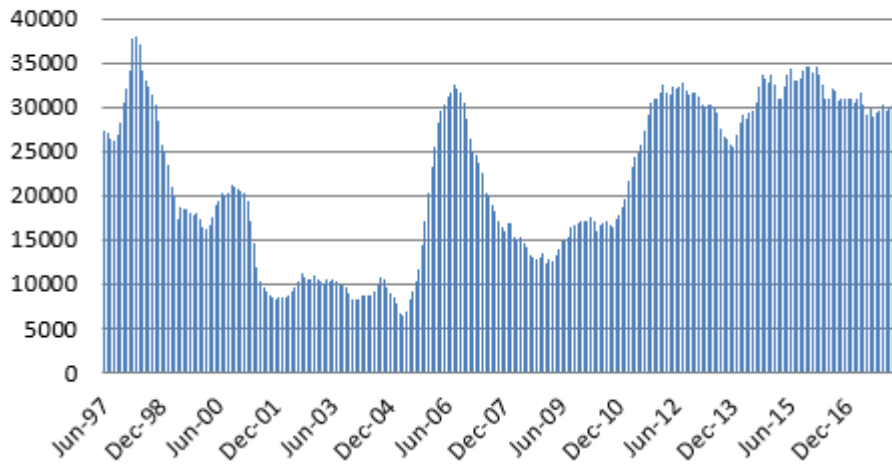
- Work on the second cell is expected to be completed before the end of June 2018.
- Remedial work to seal off areas of foul air leakages has been completed.
- The foul air systems are now inspected weekly for any signs of leakages and any leakage found are sealed off.

9.4 The Beach Road and Saxton Road pump stations are currently operating with a single storm pump while renewals are underway on the second storm pumps. Investigations into the causes for the failure of the Saxton storm pumps are continuing.

Contract 3619 – Biosolids operation (Nelson Marlborough Waste)

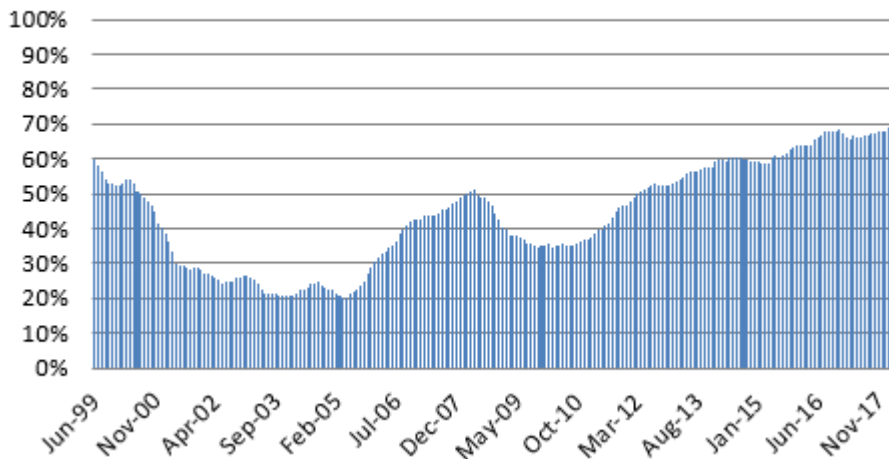
9.5 The 12 month rolling average of biosolids sprayed is 31,000m³.

Annual rolling volume sprayed



9.6 The following graph shows the use of nitrogen capacity of the Bell Island and Rabbit Island pine plantations.

Nitrogen Capacity used in 3 year cycle



9.7 The graph above demonstrates that the NRSBU has a buffer of about 30%. This buffer does not translate directly into capacity for future growth. It is therefore important to optimise the management of the forests.

10 Key performance Indicators and consent compliance

10.1 The outcomes of key performance indicators for the three month period to 31 May 2018 are shown in the table below.

Environmental: Treatment and Disposal			
RMA consent - wastewater Discharge to Coastal Marine Area	RMA Consent - Discharge of Contaminants to Air (Odour complaints)	RMA Consent - Discharge of Contaminants to Land	Equipment Failure of critical components within treatment and disposal system
	Note 1		
Environmental: Pump Stations			
Odour complaints from pump stations	Pump station wet weather overflows	Pump station overflows resulting from power failure	Pump station overflows resulting from mechanical failure
Environmental: Pipeline			
Reticulation breaks	Air valve malfunction		
Capacity: Overloading system capacity			
Treatment & Disposal	Pump Stations		
Reliability: Equipment failure of critical components			
Treatment & Disposal	Pump Stations	Pipelines	
Responsiveness: Speed of response for emergency and urgent maintenance works			
Treatment & Disposal	Pump Stations	Pipelines	
Responsiveness: Speed of response for routine and programmable maintenance works			
Treatment & Disposal	Pump Stations	Pipelines	
Key customer relationships: Overall satisfaction			
Treatment & Disposal	Pump Stations	Pipelines	

Note 1 Two odour complaints were received from Best Island residents in March 2018. Investigations into these two complaints indicated that the odours originated from the facultative ponds.

10.2 Consent Compliance Outcome: The compliance outcome for the 12 months to 31 May 2018 is outlined in the following table.

i)	Resource Consent Compliance (rolling 12 month record)	
	➤ Discharge to Estuary Permit	Achieved.
	➤ Aberrational discharges	N/A. Consent issued in February 2018.
	➤ Discharge to Air Permit	Not achieved

	<ul style="list-style-type: none"> ➤ Biosolids Disposal 100% Compliance ➤ Discharge treated waste water to land 100% Compliance
ii)	Odour Complaints
	<ul style="list-style-type: none"> ➤ Past three months 2 odour complaints were received. ➤ Last 12 months 21 odour complaints were received. 19 of the odour complaints were specifically associated with issues around the ATAD system and ATAD bio-filter.
iii)	Overflows
	<ul style="list-style-type: none"> ➤ Past three months Nil. ➤ Last 12 months An overflow occurred during the storm surge event on 1 February 2018 when the Beach Road pump station was flooded.
iv)	Speed of response for maintenance works
	<p>In past three months:</p> <ul style="list-style-type: none"> ➤ 29 call outs were recorded. <ul style="list-style-type: none"> • 5 call outs relating to Milliscreen issues. • 2 call out associated with the supernatant pumps. • 6 call outs associated with Primary Clarifier sludge transfer pumps. • 5 call outs associated with ATAD C1 mixer tripping out. • 7 call outs for pump stations during storm events in February 2018. • 1 call out for power outage at Bell Island. • 1 call out for power outage at Beach Road pump station. • 1 call out for an odour complaint. • 1 call out for power outage at Wakatu pump station.
	<ul style="list-style-type: none"> ➤ Response within 30 minutes. Achieved.

11 Review of Action Plan Implementation – 2017 AMP and 2017/2018 Business Plan

11.1 The following table indicates the draft timelines for the individual action items:

IP	Business Plan Action	Target Date	Completion Date	Comments
1/17	Consolidate all natural disaster information and review 3 yearly.	June 2019		
	Treated Waste Water Re-use project	April 2018		Technical Report received 25 May 2018.
	Review regional pipeline upgrade strategy	June 2018		A workshop was conducted in April and the report by Fluent was circulated to contributors for comment. Once feedback is received

IP	Business Plan Action	Target Date	Completion Date	Comments
				from contributors a follow up workshop will be arranged with the contributors.
2/17	Renewal of effluent discharge permits.	December 2018		The Consent was publicly notified on 17 February 2018. The processing of the request has been suspended in terms of Section 91 A(1) to allow the NRSBU to further investigate matters raised by submitters.
3/17	Develop sludge removal programme.	December 2018		A sludge survey is programmed for June 2018.
4/17	Review long term plan	December 2019		
5/17	Review AMP	August 2020		
6/17	Investigate use of gravity belt thickener for use to thicken secondary sludge.	June 2020		
BP2	Review secondary sludge separation.	December 2018		
BP10	Construction second sludge storage tank.	June 2019		Work delayed to focus on odour issues at Bell Island.
BP11	Develop sludge removal programme.	December 2018		Subject to review of the performance of the improvement of mixing in F2. Sludge survey to be carried out.
BP13	Renewal of effluent discharge permit			
AP	AMP Action	Target Date	Completion Date	Comments
1	Annual customer survey.	September 2018		
2	Business Continuity Plan review.	March 2019		
3	Consider benefits of succession planning and how it might be implemented once	March 2019		

IP	Business Plan Action	Target Date	Completion Date	Comments
	governance issues (TDC and NCC) have been resolved.			
4	A programme of regular pipe inspections of (high) risk areas to be developed.	September 2018		
5	Monitor sludge levels in ponds and ascertain long term removal and disposal requirements.	December 2018		Covered in this report. Target sludge survey for facultative ponds for June 2018.
6	The existing maintenance schedules and procedures, quality/procedure, decision making process, contingency and operation and maintenance manuals are to be formalised, updated where required.	September 2018		
7	Consolidate all known natural disaster events information for consideration by the board. (lifelines)	December 2018		
8	All condition and performance data shown in INFOR	January 2019		
9	Review of security required at all facilities.	December 2018		
10	Biosolids application permits renewal.	June 2020		

12 Renewal of Contract 3458 (Nelmac and NCC on behalf of the NRSBU)

- 12.1 The Engineer-to-the-contract (Alec Louverdis) will be continuing the work commenced several months ago by Jeff Robinson with respect to the contract with Nelmac. The intention is to roll-over the contract with Nelmac for a further two years but to adopt a new approach.
- 12.2 The Acting General Manager has been tasked, as a matter of urgent business, to meet with all parties to pursue a more collaborative approach for this next two year term. That collaborative approach will include the possibility of an alliancing approach and will see the facility better managed at all levels placing the NRSBU in a better position for the resource consent renewal. It is hoped that demonstrable changes will be evident very soon.

13 Draft Business Plan 2018/19

- 13.1 The draft NRSBU Business Plan 2018/19 was presented for approval by the General Manager to the Nelson City Council Works and Infrastructure Committee on 29 March 2018. The Committee resolved to not approve the draft plan until a meeting could be held with the

NRSBU Board and requested that the Tasman District Council also attend the meeting. The point was made that the draft Business Plan did not contain sufficient detail for the Nelson City to be assured that the NRSBU's environmental aspirations were supported by Nelson City Council. It was also noted that the submissions on the Council's Long Term Plan were not complete and that feedback will be provided to the Board on any relevant submissions.

13.2 Following this meeting the General Manager presented the same draft plan to the Tasman District Council Engineering Services Committee – and passed on the resolution and request for a meeting with the Board from Nelson City Council. The Committee resolved to:

- *Receive the NRSBU – Annual Report and Draft Business Plan; and*
- *Resolved to provide feedback and direction to the NRSBU Committee on any issues that affect the business arising from decisions made as a result of Tasman District Council's Long Term Plan consultation process.*

13.3 Item 17 in this agenda covers a Joint Nelson City Council/Tasman District Council/NRSBU workshop scheduled for 4 July 2018.

13.4 We have received feedback that the only relevant LTP submissions received were a concern about the impact of climate change (sea level) on the Bell Island Plant facility.

14 Financial Status

Financial Reports

14.1 **Attachment 3** is the NRSBU Financial Report for the period up to 30 April 2018. Some comments are:

- 14.1.1 Operational expenditure is tracking to budget. The contract disbursements for the operation and maintenance contract is expected to stay within budget.
- 14.1.2 Electricity costs are tracking well below budget:
- 14.1.3 Pump station power costs are around 20% over budget and are associated with an increase in the number of wet weather events compared to the previous three years.
- 14.1.4 The power costs for the treatment plant is running 15% lower than budget and is associated with the bypassing of the activated sludge area during summer. The strategy to bypass the activated sludge area during summer to save energy will be reviewed considering the condition of the oxidation ponds and the quality of the discharge from Bell Island.
- 14.1.5 Biosolids spraying costs are tracking to budget.
- 14.1.6 Capital and Renewal Work:
 - Pond improvements through the installation of curtains in pond M5 have been delayed and will be completed early in the next financial year.
 - Work on the desludging trial has been delayed until a strategy to deal with odour issues has been finalised.
 - Work on the project to install emergency power at the inlet will be deferred until after the completion of the discharge consent renewal.

- The construction of a second sludge storage tank has been deferred in order to integrate this work with the remedial work associated with the management of odour issues at the different process areas.
- The funding for these projects will be carried forward.

14.2 Attachment 4 is the NRSBU Balance Sheet as at 30 April 2018.

15 Bell Island Treated Effluent Reuse Project update

15.1 A draft Technical Feasibility Report has been received from WSP/OPUS (25 May 2018). The next step is a review by the NRSBU Asset Manager and GM to edit the draft for correctness compared to the initial scope – will not take long (just a matter of finding time to do this). The report covers:

- **Wastewater reuse quality.** There is no standard in NZ for the application of treated wastewater in areas accessible to the public however, there are many countries that have established standards that we can reference. The options are essentially:
 - Class A unrestricted municipal use
 - Class B restricted use
 and treating to Class A is more expensive than Class B
- **User requirements.** Potential users have been surveyed and we suggest that a meeting with them will be the next step to share the findings of the report. In summary five potential customers could require up to 672,000 m³ per annum.
- **Treatment and Reticulation capacity requirements.** An indicative pipeline route is shown plus a proposed treatment system for costing purposes.
- **Consent requirements.** Comment is provided on resource consent and easements.
- **Cost estimates.** Are provided for a number of options and pipe sizes.

15.2 **The Whole Equation** – This report is an update of a 2010 report. The difference between the two reports is that we have specifically not asked WSP/OPUS to comment on the financial feasibility of a scheme – only the technical feasibility. The reason is that we believe that the following values need to be included when assessing the viability of the scheme:

- Technical
- Environmental
- Cultural
- Community
- Financial
- Customer willingness and satisfaction

15.3 **Key Decision makers** – The question of proceeding or not proceeding with a treated effluent reuse scheme should be a joint Council and NRSBU decision. This is a strategic regional opportunity. The NRSBU is the obvious vehicle to make it happen.

15.4 Next steps

- NRSBU team edit/finalise the draft.
- Set up a workshop with the NRSBU, Council representatives and potential customers – this is urgent because the risk is that they will pull out if it drags on too long.
- Find the right person to convert the non-dollar values into a formula that includes the six factors listed above – a bit like a benefit cost ratio exercise noting the challenge to put a value to cultural and environmental and community values – but that is what councils do inherently much of the time.

16 Regional Pipeline

16.1 A technical workshop was held on 6 April 2018 with the five NRSBU customers. Fluent Solutions presented an overview of the history of the regional pipeline/s and the 2009 assumed discharge flows. The aim of the workshop was to update the needs of the customers and discuss pipeline options. An afternoon session followed with Council representatives discussing growth challenges and opportunities.

16.2 The NRSBU team are awaiting final feedback from the users and a strategy on how to move this forward will be presented at the next quarterly meeting. In summary, the workshop achieved its objectives which included an opportunity for all the users to reinforce their needs, concerns and long term growth demands.

17 Joint Nelson City Council/Tasman District Workshop

17.1 A joint Nelson City Council/Tasman District Council workshop has been set for 4 July 2018. This workshop has been requested by the Nelson City Council, noting that the importance of the NRSBU Business Case needs to complement Nelson City Council's Long Term Plan, in particularly its high environmental aspirations. Stantec and Cawthron will lead a presentation on work done to date on the consent.

18 Attachments

1.	David Lewis - Odour Report	21
2.	Summary Findings - Preliminary Odour Audit	25
3.	NRSBU Income account to 30 April 2018	29
4.	NRSBU Balance Sheet 30 April 2018	31

Report on Odour Monitoring
Bell Island Regional Sewage Treatment Plant
Contract No. EPO 248367

Monitoring of the odours emanating from the Bell Island regional sewage treatment plant was carried out on the days and under the weather conditions prevailing as specified in the attached Table.

Assessment of the odours was made at the boundaries of the plant under down-wind conditions and on Best Island during both up-wind and down-wind conditions. It was found that only a faint odour incidence was experienced at the eastern end of Best Island that was considered to be not offensive.

However, apart from some areas of faint odour at parts of the Bell Island boundaries (as specified in the attached Table and map) which were attributable to the ponds, moderate to strong odours were experienced in the area of the raw sewage inlet structures. These odours were deemed to be offensively strong in the vicinity of these structures with mitigating factors being that they would not have any adverse effect other than on the adjacent uninhabited estuarine areas for the prevailing wind conditions at the time and the offensiveness diminished with distance from the structures.

Further monitoring will be carried out as detailed by this Contract.

W R Lewis
CONTRACTOR

Table No. 1

DATE	WEATHER	SITE	INTENSITY	OFFENSIVENESS	COMMENT
26/04/18	N.E. Drift < 5 km/hr 15°C Fine 1/10 Cloud	Bell Island – Southern Shore 1. East of sewage inlet structures. 2. Cove opposite middle of Pond 2. 3. Adjacent to cable warning sign. 4. Opposite Western end of ponds.	Moderate Faint Faint Faint	Moderate Faint Faint Faint	Visible as a mist but had dispersed 2 hours later.
28/04/18	S.W. Breeze 7 km/hr 14°C Light drizzle 10/10 Cloud	Best Island From jetty at S.E. end of residential area (a) to opposite Western end of ponds (b) plus internal roads.	Nil	Nil	Only odours experienced were those typical of an estuarine area.
01/05/18	N. Breeze 10 km/hr 16°C Fine 1/10 Cloud	Best Island as for above.	Very faint	Nil	Slight pond odour near Eastern end of Island (c).
3/05/18	Sth Draft rising to breeze (< 5 km/hr → < 10 km/hr) 12°C Fine 2/10 Cloud (Scud along Eastern hills)	Bell Island Eastern and Southern shoreline A – B B – C C – D D – E E – F	Nil Strong → Faint Nil Faint Nil	Nil Strong → Faint Nil Faint Nil	Strong odour of raw sewage near B that dissipated with distance and dispersion. Oxidation pond odour.

18/05/18

Report No. 2

Odour Monitoring for NRSBU**Contract No. EPO 248367**

Further monitoring for odours from the Bell Island regional sewage treatment plant were carried out on the 8th and 14th of May. During this period unsuitable weather conditions were experienced with predominantly southerly winds and rain. On some days, the preferred northerly winds coincided with high tide and so access to Bell Island was not possible.

On Best Island only faint odour attributable to the operation of the plant was experienced on the northeast corner that was considered to be not offensive whilst, further along the northern coastline but away from residential buildings, faintly offensive odour was experienced.

On Bell Island, under southerly conditions, moderately offensive odours were experienced in the downwind area from the raw sewage inlet structures. The offensiveness decreased with increasing distance to the north away from the inlet structures. Faint odour was experienced along the northern shoreline of the Island that was directly attributable to the ponds.

The findings are shown on the attached Table and Plan.

No monitoring will be carried out for a further fortnight due to the Contractor's absence from the area.

W R Lewis
CONTRACTOR

Table No. 2

Item 7.1

Attachment 1

DATE	WEATHER	SITE	INTENSITY	OFFENSIVENESS	COMMENT
8/05/18	Overcast but fine – showers in ranges W.S.W. breeze < 15 km/hr 17°C	Bell Island			
		Eastern and Southern shoreline.			
		A – B	Nil	Nil	
		B – C	Moderate	Moderate	Odour from raw sewage inlet structures.
		C – D	Faint	Faint	Raw sewage odour dissipating with distance.
		D – E	Nil	Nil	
14/5/18	Fine to Cloud N.E. Breeze 15 km/hr 17°C	Best Island			
		Eastern and Northern shoreline.			
		a to b	Nil	Nil	
		b to c	Very Faint	Nil	Odour not regarded as offensive.
		c to d	Nil	Nil	
		d to e	Faint	Faint	Possibly odour from ponds.
e to f	Nil	Nil			

3.16 Summary

John McAndrew (Stantec Process Engineer) visited Bell Island WWTP on 2 May 2018. His scope was to review the key plant items where odour could be generated to ensure that any repairs/replacement recently completed, underway or planned were being carried out to the relevant standards and overall plant design (and did not include the ponds). John had not visited the plant prior to this audit and was not involved in the contract that Nelmac has with Stantec. This then introduced a level of independence in the audit.

Table 3-2 provides a brief summary of the preliminary audit findings and the summary status is defined below.








	This is a very significant health and safety and/or odour issue
	This is a significant health and safety and/or odour issue
	Potential issue or area for improvement which may be assessed / reviewed in development of a medium – long term strategy
	In line with good practice / unlikely to be a significant odour issue. but may be assessed as part of the development of a medium – long term strategy








Table 3-2: Summary of Audit Findings



Area	Status	Brief Summary
Inlet Works – Receiving Chamber and Screens		<p>High H₂S presents a significant health and safety, odour and corrosion issue. H₂S levels are well in excess of those which may cause significant harm to human health below the covers and often exceed NZ occupational exposure limits above the covers.</p> <p>H₂S levels indicate a potentially significant network septicity issue potentially exacerbated by industrial discharges.</p> <p>Covering and ventilation is sub-optimal and does not provide sufficient ventilation and capture.</p> <p>Concrete is unlined and anecdotally subject to extensive corrosion. This requires attention.</p> <p>There are a number of options to address this including chemical dosing to the network (there are a number of chemical options including iron salts and pH correction which may be assessed), lining and ventilation modifications.</p>
Inlet Works Biofilter		<p>Biofilter does not appear to currently be a large odour source, primarily because the ventilation is poorly designed and it receives little load.</p> <p>The biofilter is not in good condition and would require significant work and/or replacement to be returned to service including media replacement, modifications to irrigation and extraction system.</p> <p>The biofilter is not appropriate to treat the H₂S levels observed in the inlet works area and would be an H&S risk if it were re-instated due to the potential for high levels of H₂S in the adjacent area.</p>


Item 7.1

<p>Inlet Works – Grit Chamber and Associated Channels & Chambers</p>		<p>These chambers and channels are covered but unventilated and a significant corrosion issue and potentially also an odour issue.</p> <p>The structures require a corrosion resistant liner and provision of ventilation to a suitable odour control facility.</p> <p>Hand railing and signage should be added to prevent access to non-trafficable covers (such as on grit chamber)</p> <p>This would be improved by network dosing.</p>
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Attachment 2

Area	Status	Brief Summary
<p>Primary Clarifier</p>		<p>The Primary Clarifier could present an odour impact issue subject to full impact assessment and development of holistic odour strategy for the plant.</p>
<p>Oxidation Ditch and Secondary Clarifier</p>		<p>Unlikely to present a significant odour impact but should be tested as part of an odour impact assessment.</p>
<p>GBT and GBT Room</p>		<p>Current practice is to wear full face respirators to work on operating plant due to H₂S levels in GBT room.</p> <p>Requires improvements to ventilation system to allow this area to operate safely.</p> <p>The area is ventilated to a carbon filter and as long as this is working odour should be managed (with exception of fugitive emissions).</p>
<p>Workshop Below GBT Room</p>		<p>Currently requires full face respirators to work on operating plant and H₂S levels are well in excess of NZ occupational health and safety guidelines.</p> <p>Requires modifications to GBT room ventilation and sealing and ventilation of GBT drains and penetrations.</p> <p>This area is a potential odour risk as it is ventilated to atmosphere.</p>
<p>GBT Area Carbon Filter</p>		<p>The carbon filter should be sufficient to treat the H₂S loads observed but has a finite capacity and will discharge odorous air when this is exceeded. It is not clear what the design operational life is (but typically could be 1 year).</p> <p>A discharge stack may be added to the carbon filter outlet to prevent low level discharge of H₂S when the carbon is saturated (and needs changing). Alternatively monitoring may be provided to ensure the carbon is replaced before it is saturated.</p>
<p>DAF</p>		<p>Unlikely to present a significant odour impact but should be tested as part of an odour impact assessment.</p>
<p>Sludge Tank</p>		<p>Poorly designed and installed cover and lack of ventilation results in potential for high H₂S levels and associated Health and safety, odour and corrosion risk.</p> <p>Tanks should be covered and ventilated to an appropriate odour control facility.</p>
<p>ATADs</p>		<p>ATADs have potential to be a source of odour due to high ammonia levels but are relatively well-sealed and ventilated.</p> <p>There is scope to improve sealing and provide dampers to check/re-balance extraction to ensure all of the ATADs have even and sufficient negative pressure to avoid fugitive emissions.</p>

ATAD Biofilter		<p>The airflow to this has been significantly increased since it was designed in 1996. There is no operational monitoring data but the discharge smelled of ammonia during the audit.</p> <p>The performance should be reviewed and options to improve performance may be investigated if required (such as potential to install a pre-scrubber or replace biofilter altogether).</p>
Biosolids Tank		<p>Poorly designed and installed cover may be a risk of fugitive emissions with high ammonia levels.</p>

Area	Status	Brief Summary
Pond Distribution Chamber		<p>This chamber is highly turbulent. There was no significant odour during the preliminary audit but anecdotally it can be a significant source of odour and should be considered as part of an odour impact assessment and development of a holistic strategy. If this were to be covered it would also need to be lined and ventilated and connected to a suitable odour control system.</p>
Ponds	-	<p>Not assessed as part of this study</p>

**Nelson Regional Sewerage Business Unit
Financial Report**

Income Account for the period to 30th April 2018

	Actual Month	Budget Month	Actual YTD	% YTD	% Year	2017/18 Budget		YTD Variation
						YTD	Annual	
Income								
Contributions Fixed	367,155	344,167	3,671,548	107	89	3,441,700	4,130,000	229,848
Contributions Variable	258,255	258,750	2,830,364	109	91	2,587,500	3,105,000	242,864
Other Recoveries	15,109	12,000	148,835	124	103	120,000	144,000	28,835
Interest	2	-	28			-	-	28
Forestry Income	-	-	-			-	-	0
Total Income	640,520	614,917	6,650,776	108	90	6,149,200	7,379,000	501,576
Less Expenses								
Management	30,830	19,175	193,081	101	84	191,800	230,104	(1,281)
Electricity	65,826	61,543	568,431	92	77	615,400	738,500	46,969
Contract Maintenance	51,686	64,776	539,020	83	69	647,800	777,321	108,780
Reactive and Proactive Maintenance	35,390	40,294	667,378	166	138	402,900	483,500	(264,478)
Monitoring	6,973	15,631	108,762	70	58	156,300	187,560	47,538
Consultancy	9,544	6,250	35,892	57	48	62,500	75,000	26,608
Insurance	4,762	5,000	45,582	91	76	50,000	60,000	4,418
Sundry	75,459	5,564	145,822	262	218	55,600	66,770	(90,222)
Biosolids Disposal	47,630	52,514	510,827	97	81	525,100	630,168	14,273
Operating & Maintenance Expenses	257,321	270,747	2,814,794	104	87	2,707,400	3,248,923	(107,394)
Financial	44,106	48,083	452,770	94	78	480,800	577,000	28,030
Depreciation	158,530	149,583	1,585,297	106	88	1,495,800	1,795,000	(89,497)
Total Expenses	459,957	468,413	4,852,861	104	86	4,684,000	5,620,923	(168,861)
Net Income	180,564	146,504	1,797,915	123	102	1,465,200	1,758,077	332,715

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Nelson Regional Sewerage Business Unit

	Balance Sheet as at 30th April 2018		
	Current	Last Month	June 2017
Equity			
Opening Equity (July)	46,966,781	46,966,781	39,685,993
Plus Net Income YTD	1,797,915	1,617,351	(25,627)
Plus Revaluation	0	0	7,306,415
Closing Equity	<u>48,764,695</u>	<u>48,584,132</u>	<u>46,966,781</u>
Contingency Reserve	100,000	100,000	100,000
	<u>48,864,695</u>	<u>48,684,132</u>	<u>47,066,781</u>
Which was Invested as follows -			
Current Assets			
Bank	11,081	49,840	21,345
Debtors	18,531	29,186	354,795
NCC Current account	301,744	1,011,239	0
Total Current Assets	<u>331,356</u>	<u>1,090,265</u>	<u>376,139</u>
Fixed Assets	62,558,068	62,619,897	62,977,357
Current Liabilities			
Creditors	(81,608)	(32,910)	(16,700)
NCC Loan	0	(1,050,000)	(450,000)
TDC Current Account	56,879	56,879	(490,010)
NCC Current account	0	0	(1,330,005)
Total Current Liabilities	<u>(24,729)</u>	<u>(1,026,031)</u>	<u>(2,286,715)</u>
Term Liabilities	(14,000,000)	(14,000,000)	(14,000,000)
Derivative Financial Instruments	0	0	0
	<u>48,864,695</u>	<u>48,684,132</u>	<u>47,066,781</u>

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