Wilson Cook & Co

Engineering and Management Consultants
Advisers and Valuers

Reply to: Auckland Office
Our ref: 1113
Email: info@wilsoncook.co.nz

27 September 2011

The Chief Executive
Vector Ltd
101 Carlton Gore Road
NEWMARKET

Attention: Mr Brett Butler, Group Manager, Pricing & Valuation

Dear Sir,

RE: ENGINEERING REPORT IN RELATION TO COMMERCE COMMISSION'S ASSET ADJUSTMENT PROCESS (GAS DISTRIBUTION)

In accordance with your instructions of 15 June 2011 in relation to Vector Limited's (Vector's) response to the Commerce Commission's (Commission's) request for information under section 53ZD of the *Commerce Act 1986* issued to Vector on 6 July 2011 (the Notice), relating in turn to the gas distribution default price-quality path determination process presently under way, we report as follows.

1 Adjustments

We understand that the asset adjustments that you propose to make are as follows:

(a) an adjustment to include the value of assets omitted in error from your 2009 disclosed assets ($4.9 m);

(b) an adjustment to correct the value of assets allocated to incorrect asset categories or given an estimated quantity, age, category or location that is now known to be incorrect ($5.8 m);

(c) an adjustment to remove the value of assets included in error in the 2009 disclosed assets (reduction of $0.04 m);

(d) an adjustment to include the value of intangible assets; and

(e) adjustments to correct asset ages (these corrections do not affect the value of assets in the year they enter the regulatory asset base, only the depreciated values in subsequent years).

These adjustments, of which items (a), (b) and (c) total $10.66 m, are further identified, described and explained in the attached table, prepared by you in the form of Schedule C of the Notice.

The table is supported by a report dated September 2011 that was also prepared by you, is referred to in the table and should be read in conjunction with the table.

We note that, as a matter of practicality, neither the table nor its supporting documents contains enough information for a reader to verify the arithmetical accuracy of the asset adjustment

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calculations as the calculations are made, in the main, in a computerised geographical information system (GIS) or in other such systems operated by your staff. However, we further note that those systems are of a type commonly used by gas pipeline businesses for undertaking analyses and making calculations of the type concerned in relation to the present matter.

2 Opinion

Having reviewed your material as identified above and after making reasonable enquiries with you, we are satisfied that to the best of our knowledge:

(a) the adjustments described in (a), (b) and (c) above are of types that comply with the Commission's requirements, as set out in its determination of December 2010 and as summarised in the Notice;

(b) the data, information, criteria and assumptions employed, as set out in your documentation (but not repeated or paraphrased here for reasons of their length and for clarity), are appropriate and reasonable for the purpose of defining the adjustments; and

(c) the methods of calculation employed to quantify the adjustments, as set out in your documentation, are appropriate for the purpose.

Based on the foregoing, we consider that this report meets the requirements of Schedule C in respect of the items described in (a), (b) and (c) of section 1 of this letter, subject to the qualifications stated in 3 below.

3 Qualifications

Values Determined under Generally Accepted Accounting Practice Not Reviewed by Us

The derivation of values of a type normally determined in accordance with generally accepted accounting practice is a matter outside our ambit and therefore no such values, if any, have been reviewed by us or are covered by our opinion.

Such matters include the proposed adjustments in relation to intangible assets and the calculation of depreciation and rolled-forward amounts.

Verification of Calculations by Audit Not Reviewed by Us

The verification of calculations by methods normally considered an audit (or using processes of a type that a qualified auditor would use) is also a matter outside our ambit and therefore no such calculations have been verified by us or are covered by our opinion.

Such calculations include those made in or derived from your GIS system or from other such systems.

No Consideration of Roll-Forward of Valuation

No consideration has been given by us to the roll-forward of any values from the year 2003.

No Determination of Impact of Professional Judgement

For reasons of practicality, no attempt has been made by us to quantify the impact of the exercise of professional judgement in your calculations, as the exercise of professional judgement is implicit in (and an integral part of) the calculations and the calculations would not be valid without the assumptions so made.

4 Qualifications of the Reviewer

This opinion has been prepared for and on behalf of Wilson Cook & Co Ltd by Mr Jeffrey Wilson, with the assistance of Mr Peter Cole. Mr Wilson believes that both he and Mr Cole meet the definition of "engineer" in clause 1.1.4 of the *Commerce Act (Gas Distribution Services Input Methodologies) Determination 2010* as both are chartered professional engineers, acting in that

professional capacity and independent (defined in turn by the Commission as neither in a relationship with, nor having an interest in, for present purposes, Vector, that is likely to involve him in a conflict of interest between his duties to us and any normal professional duties to the Commission).

Mr Wilson is qualified professionally in engineering and commerce and has over forty years experience as a professional engineering adviser in the energy industry, including more than 20 years of experience in asset valuations, regulatory assessments and related work. Mr Cole is qualified professionally in engineering and has a similar length of experience in mechanical engineering, including in gas engineering and gas reticulation.

No restriction or influence that we considered inappropriate was imposed on us or on the scope of our services by Vector's management or other circumstances.

5 Conditions Accompanying Our Opinion

Disclosure

Wilson Cook & Co Limited has prepared this report in accordance with the instructions of its client on the basis that all data and information that may affect its conclusions have been made available to it. No responsibility is accepted if full disclosure has not been made. No responsibility is accepted for any consequential error or defect in our conclusions resulting from any error, omission or inaccuracy in the data or information supplied directly or indirectly.

Disclaimer

This report has been prepared solely for our client, Vector, for the purpose stated in the preamble to this report. Wilson Cook & Co Limited, its officers, agents, subcontractors and their staff owe no duty of care and accept no liability to any other party, make no representation or warranty as to the accuracy or completeness of the information or opinions set out in the report to any person other than to its client including any errors or omissions howsoever caused, and do not accept any liability to any party if the report is used for other than its stated purpose.

Non-Publication

With the exception of its publication by Vector in full as part of its response to the Commission, neither the whole nor any part of this report may be included in any published document, circular or statement or published in any way without our prior written approval of the form and context in which it may appear.

Yours faithfully

Wilson Cook & Co Limited

Encl. Letter of Engagement and Table of Adjustments

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15 June 2011

Mr Jeffrey Wilson
Managing Director
Wilson Cook & Co Ltd
PO Box 2296
Auckland
New Zealand

Dear Jeffrey

ENGINEERING REPORT AND OPINION IN RELATION TO ASSET ADJUSTMENT PROCESS – TERMS OF ENGAGEMENT

Thank you for agreeing to act as Vector Limited's (Vector) independent engineer for the purpose of our response to the Commerce Commission's request for information under section 53ZD of the Commerce Act 1986, in relation to the Commission's Commerce Act (Gas Distribution Services Input Methodologies) Determination 2010 and Commerce Act (Gas Transmission Services Input Methodologies) Determination 2010.

We are undertaking the asset adjustment process set out in clause 2.2.1 of the above Commerce Acts and are required to provide the Commission with certain expert opinions and supporting information.

Terms of Engagement

Wilson Cook & Co Ltd is engaged by Vector to provide your services to perform, on its behalf, the services set out below until 30 September 2011 or such date as we agree mutually.

You confirm that you meet the definition of "engineer" in clause 1.1.4 of the above Commerce Acts – namely, that you are (a) a Chartered Professional Engineer; (b) acting in that professional capacity; and (c) independent (defined in turn as neither in a relationship with, nor having an interest in, for present purposes, Vector, that is likely to involve you in a conflict of interest between your duties to us and your duties to the Commission).

The Services

The services are: (a) the preparation of a report complying with the requirements set out in Schedule C (including Table 1 of that Schedule) of the 2011 Notices to Supply Information; (b) reporting to us on the progress of your work as required; and (c) all other work as required by us from time to time during the engagement.

The commercial terms of your engagement have been agreed previously with us by way of a separate agreement.

Confidentiality

You will be required to keep confidential all information and documents that you acquire during this engagement, other than where we specifically authorise you in writing to disclose such information or where you must do so by law.

I look forward to hearing whether these terms are acceptable to you.

Yours faithfully

Brett Butler
Group Manager Pricing & Valuation

Appendix A - *Summary table of adjustments corresponding to Table 1 of Schedule C: Information requirements for engineer's report*

Nature of adjustment	**Inclusions for assets omitted in error from the 2009 disclosed assets**	
Category of adjustment	Correct asset register errors	
GDB IM cl. Ref	2.2.1(2)(c)(i)	
Designated asset type	Included	
Description and number of assets	Special Crossings	182
	Critical Spares	1
	Valves	1,158
Supporting information	Section 3 of report	
2003 ODV original ($000)	Special Crossings	0
	Critical Spares	0
	Valves	0
	Total	0
2003 ODV adjusted ($000)	Special Crossings	4,318
	Critical Spares	132
	Valves	473
	Total	4,923
Value of adjustment ($000)	Special Crossings	4,318
	Critical Spares	132
	Valves	473
	Total	4,923

Nature of adjustment	**Corrections for assets allocated to the incorrect asset category, or given an estimation of quantity, age, category or location now known to be incorrect**	
Category of adjustment	Correct asset register errors	
GDB IM cl. Ref	2.2.1(2)(c)(iii)	
Designated asset type	Modified value	
Description and number of assets	Cathodic Protection	678
	Gate Station/DRS	183
	Mains Pipe	2,863,232
	Services	56,838
Supporting information	Section 3 of report	
2003 ODV original ($000)	Cathodic Protection	109
	Gate Station/DRS	2,489
	Mains Pipe	87,779
	Services	21,248
	Total	111,626
2003 ODV adjusted ($000)	Cathodic Protection	2,144
	Gate Station/DRS	2,091
	Mains Pipe	94,204

	Services	18,961
	Total	117,400
Value of adjustment ($000)	Cathodic Protection	2,035
	Gate Station/DRS	-398
	Mains Pipe	6,424
	Services	-2,287
	Total	5,775

Nature of adjustment	**Corrections for assets included in error in the 2009 disclosed assets**	
Category of adjustment	Correct asset register errors	
GDB IM cl. Ref	2.2.1(2)(c)(iii)	
Designated asset type	Excluded	
Description and number of assets	Odorisation	2
Supporting information	Section 3 of report	
2003 ODV original ($000)	Odorisation	38
2003 ODV adjusted ($000)	Odorisation	0
Value of adjustment ($000)	Odorisation	-38

Nature of adjustment	**Inclusions for assets omitted in error from the 2009 disclosed assets**	
Category of adjustment	Correct asset register errors	
GTB IM cl. Ref	2.2.1(2)(c)(i)	
Designated asset type	Included	
Description and number of assets	Intangible Assets	1
Physical asset life	Intangible Assets	0 (not depreciated)
Supporting information	Section 7 of report	
2005 Disclosure year addition ($000)	Intangible Assets	1,442
Value of adjustment in 2005 disclosure year ($000)	Intangible Assets	1,442

Nature of adjustment	**Adjustment to correct asset age**	
Category of adjustment	Correct asset register errors	
EDB IM cl. Ref	2.2.1(2)(b)(iii)	
Designated asset type	Value modified	
Description and number of assets	Gate Stations & DRS	444
	Pipeline	101,424
	Cathodic Protection	678
Supporting information	Section 4 of report	
2003 value ($000)	Gate Stations & DRS	2,091
	Pipeline	111,193
	Cathodic Protection	2,144
	Total	115,429

Nature of adjustment	**Adjustment to correct asset age**	
Category of adjustment	Correct asset register errors	
EDB IM cl. Ref	2.2.1(2)(b)(iii)	
Designated asset type	Value modified	
Description and number of assets	Gas Pipelines	44
	Gas Stations	3
Supporting information	Section 4 of report	
2004 value ($000)	Gas Pipelines	2,217
	Gas Stations	6
	Total	2,223

Nature of adjustment	**Adjustment to correct asset age**	
Category of adjustment	Correct asset register errors	
EDB IM cl. Ref	2.2.1(2)(b)(iii)	
Designated asset type	Value modified	
Description and number of assets	Gas Pipelines	155
	Gas Stations	3
Supporting information	Section 4 of report	
2005 value ($000)	Gas Pipelines	4,375
	Gas Stations	188
	Total	4,563

Nature of adjustment	**Adjustment to correct asset age**	
Category of adjustment	Correct asset register errors	
EDB IM cl. Ref	2.2.1(2)(b)(iii)	
Designated asset type	Value modified	
Description and number of assets	Gas Pipelines	95
Supporting information	Section 4 of report	
2006 value ($000)	Gas Pipelines	2,341
	Total	2,341

Nature of adjustment	**Adjustment to correct asset age**	
Category of adjustment	Correct asset register errors	
EDB IM cl. Ref	2.2.1(2)(b)(iii)	
Designated asset type	Value modified	
Description and number of assets	Gas Pipelines	112
Supporting information	Section 4 of report	
2007 value ($000)	Gas Pipelines	2,080
	Total	2,080

Nature of adjustment	**Adjustment to correct asset age**	
Category of adjustment	Correct asset register errors	
EDB IM cl. Ref	2.2.1(2)(b)(iii)	
Designated asset type	Value modified	
Description and number of assets	Gas Pipelines	55
	Gas Stations	7
Supporting information	Section 4 of report	
2008 value ($000)	Gas Pipelines	5,678
	Gas Stations	264
	Total	5,942

Nature of adjustment	**Adjustment to correct asset age**	
Category of adjustment	Correct asset register errors	
EDB IM cl. Ref	2.2.1(2)(b)(iii)	
Designated asset type	Value modified	
Description and number of assets	Easement-Gas	2
	Gas Pipelines	56
	Gas Stations	7
Supporting information	Section 4 of report	
2009 value ($000)	Easement-Gas	2
	Gas Pipelines	4,966
	Gas Stations	268
	Total	5,235

ADJUSTMENTS TO GAS DISTRIBUTION NETWORK OPTIMISED DEPRIVAL VALUATION (as at 30th June 2003)

September 2011

Contents

1. Introduction

The Commerce Commission's (the Commission) Input Methodologies Determination of 2010[1] (2010 IM) requires gas distribution networks such as Vector to produce an initial regulatory asset base (RAB) as of 30 June 2009.

Vector's gas distribution network consists of:

- the Auckland network, subject to the Commission's Gas Final Authorisation of 2005,
- the North Island network, historically owned by NGC Holdings Limited and not subject to the Commission's Gas Final Authorisation.

The 2010 IM prescribes the initial RAB of the Auckland gas distribution network by specifying the dollar value of the system fixed assets and non-system fixed assets as at 30 June 2005. The value of the initial RAB is then made up of the sum of the prescribed 30 June 2005 value and additions between 1 July 2005 and 30 June 2009, valued at cost under GAAP, adjusted for depreciation and changes in the consumer price index, as per the 'Gas Control Model'[2]. The 2010 IM does not permit any adjustments to be made to the value of Auckland gas distribution assets.

For the North Island gas distribution network the 2010 IM prescribes the initial RAB as the value of assets included in the 'Non-Current Assets' category in the 2009 disclosure financial statements ("2009 disclosure value"). A number of adjustments are permitted (2010 IM section 2.2.1(2)(a)-(c) and 2.2.1(3)):

(a) Indexing of the value of assets to allow for changes in the consumer price index between 1 July 2005 and 30 June 2009.
(b) The inclusion of assets omitted from the 2009 disclosed assets in error ('included' type).
(c) The exclusion of assets included in the 2009 disclosed assets in error ('excluded' type).
(d) Correction of errors resulting from assets being allocated to the incorrect asset category, or given an estimation of quantity, age, category or location now known to be incorrect ('value modified' type).

This report addresses the adjustments allowed under (b), (c) and (d) above for the North Island gas distribution network.

The value of North Island gas distribution assets in the 2009 disclosure financial statements was based on an NGC valuation produced as at 30 June 2003[3], adjusted each year for additions, disposals and depreciation. Vector has submitted in various rounds of consultation, including the consultation on the 2010 IM, that the 2003 NGC valuations

[1] Commerce Act (Gas Distribution Services Input Methodologies) Determination 2010 – 22 December 2010

[2] "Gas Control Final Authorisation Model 2008" http://www.comcom.govt.nz/final-decisions/

[3] "ODV 2003 Optimised Deprival Valuation Transmission & Distribution as at 30 June 2003", Disclosed NGC Report

were flawed[4]. There were a number of limitations to the 2003 NGC asset register including, but not limited to:

- Uncertain reconciliation between the 2003 register and current asset information systems as the 2003 register does not contain asset ID keys to trace to current asset registers.
- The 2003 register was compiled from successive historical valuation registers over a number of years with unclear and ad-hoc processes used to make updates.
- The process used to update the asset register was not well documented and was open to interpretation, assumptions and amendments. The register contained some errors.
- The register was based on a number of estimations rather than actual asset specific data, for example service connections, service pipes and cathodic protection.

The Commission stated in the Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper that "the IM requires regulated suppliers, in establishing their initial RAB values, to establish RAB values for their assets on a disaggregated basis. This will require regulated suppliers to revisit, and possibly recreate, asset registers to ensure that assets in the RAB are clearly defined and assigned a RAB value"[5].

In order to address the above issues Vector produced a robust internal valuation of the North Island gas distribution network in 2008[6]. This valuation was undertaken using an ODV approach and used the Commission's Opening Regulatory Asset Base Valuation Methodology[7] (15 February 2007), created for the Commission's authorisation of Powerco and Vector's Auckland gas distribution networks. The 2008 valuation was signed off by PricewaterhouseCoopers[8] and Wilson Cook & Co Ltd[9].

The asset register produced for the 2008 internal valuation is considered a robust reference for identifying adjustments permitted under the 2010 IM because:

- It was created from an extract of all assets from the Vector geographical information system (GIS) which is considered the master data source for North Island gas distribution assets.
- It contains asset ID keys which allows for ongoing reconciliation with the financial system and are necessary for purposes such as asset disposals.
- Assets are listed at a granular level with accurate information on actual quantities and categories.

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[4] "Statement of Duncan Ian Head, 23 August 2010, Submission on EDBs and GPBs Input Methodologies Asset Valuation"

[5] Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper – December 2010, paragraph E2.63

[6] "Optimised Deprival Valuation for the North Island Gas Distribution Networks As at 30 June 2008", Undisclosed Internal Vector Report

[7] Authorisation for the Supply of Natural Gas Distribution Services by Powerco and Vector – Valuation of the Opening Regulatory Asset Base – Valuation Methodology, published by the Commerce Commission on 15 February 2007

[8] "ODV Valuation of Vector Limited's Non-Auckland Gas Distribution System Fixed Assets at 30 June 2008", PricewaterhouseCoopers - Letter to Vector, 9 October 2009

[9] "RE: Valuation of System Fixed Assets of Vector's Uncontrolled Gas Distribution Networks as 30 June 2008", Wilson Cook & Co – Letter to Vector, 30 September 2009

2. Adjustment process

To identify if any of the permitted adjustments (included, excluded or value modified types) need to be made to the 2009 disclosure value for the North Island network assets, the underlying 2003 valuation register has been compared with the 2008 asset register. To make this comparison, any assets with commissioning dates after 30 June 2003 have been filtered out of the 2008 asset register. As a result of this comparison, the 2003 NGC valuation asset register has been updated and an adjusted 2003 asset register established.

2010 IM section 2.2.1(6), requires the adjusted asset value to be based on the value that would have resulted from an application of the Gas (Information Disclosure) Regulations 1997 as at the later of the date the asset was first commissioned or that the fixed assets were most recently revalued. The North Island network assets' most recent valuation was the 2003 NGC valuation. Where practical, the assets in the adjusted 2003 asset register have been valued using to the same methodologies and input assumptions (i.e. unit replacement costs and total asset lives) as in the 2003 NGC valuation. The same processes to calculate the optimisation and economic value (EV) adjustments have also been used as these form part of the valuation methodology.

In some instances entire asset categories were excluded in error in the 2003 NGC valuation. These asset categories include, but are not limited to, valves, special crossings and critical spares. As there was no valuation methodology applied to these asset categories in the 2003 NGC valuation, the valuation approach that was used to value the Auckland Gas Distribution Network for the Gas Final Authorisation of 2005 has been used[10].

[10] Vector Limited, "Opening Regulatory Asset Base Valuation for the Auckland Gas Distribution Network as at 30 June 2005", prepared in accordance with the "Authorisation for the Supply of Natural Gas Distribution Services by Powerco and Vector; Valuation of the Opening Regulatory Asset Base Valuation Methodology"

3. Valuation methodology 2003

NGC used a bespoke valuation methodology loosely based on a draft ODV Handbook developed by the Ministry of Economic Development in 2000. Some detailed treatments are not well documented and a number of inconsistencies between reported methodologies and actual calculations exist. Due to this, assumptions and engineering judgement have been necessary in order to create the updated valuation.

Replacement cost and Quantities

Mains Pipeline

Pipeline replacement costs per metre were set equal to the rates used in the 2003 NGC valuation. Where pipeline of a particular material and size and from a particular region was not present in the 2003 NGC valuation, the replacement cost has been calculated with reference to the valuation of similar pipes from other regions. Where valuation of similar sized pipes in other regions was not available, pipe sizes were valued at the next size up. This latter approach is consistent with that in the electricity distribution ODV handbook[11].

The following shows the reconciliation between the mains pipeline lengths in the original 2003 NGC valuation and the updated 2003 asset register.

Material	Original 2003 asset register length (m)	Updated 2003 asset register length (m)	Δ length (m)
IP Steel	212,796	203,378	-9,418
MP Steel	188,644	147,212	-41,432
LP steel	0	21,187	21,187
LP PE	0	43,022	43,022
MP PE	2,230,767	2,448,433	217,666
Grand Total	**2,632,207**	**2,863,232**	**231,025**

Mains pipelines have been treated as "value modified" assets as they were given an estimated quantity in 2003, now known to be incorrect (Clause 2.2.1(2)(c)(iii)).

Service Connections and Pipes

The term "service" was used in the 2003 NGC valuation to describe the assets by which the consumer is connected to the distribution system pipeline. This includes the pipe from the gas main, tie into the main, riser and valve at the meter set end, but excludes meters and regulators.

The 2003 NGC valuation valued services according to the size of the meter used for each service. An assumption was made about the diameter of the pipe used for each service connection, based on the meter size. The cost of the service connection was then built up from the cost of the service pipe, the cost of the riser and an allowance for the cost of mapping and supervision and records.

[11] Handbook for Optimised Deprival Valuation of System Fixed Assets of Electricity Lines Businesses, 30 August 2004, clause A.45(d)

The asset register used for the 2003 NGC valuation did not contain exact asset details of the service pipe assets such as length. Assumptions of the average length of service pipe were made based on meter size and a sample of records[12]. The following table shows the assumptions for service pipe length that were used in the 2003 NGC valuation:

Meter Type	Service pipe size assumption (mm NB)	Average Length assumption (m)
M10	10	25
M20	50% 10 & 50% 25	24
M40	25	21
M80	25	21
M150	32	21
M300	50	21
M500	50 % 80 & 50% 100	10

The revised asset register created in 2008 contained a greater level of detail for service connection assets, breaking these down into records for the service connection including valve and riser and separate records for the service pipes. Service connection and pipes have been treated as "value modified" assets as they were given an estimation of quantity in 2003, now known to be incorrect (Clause 2.2.1(2)(c)(iii)).

The following table summarises the service pipe data from the revised asset register:

Material	Pressure	Length (m)	Number of service connections	Average service pipe length per connection
Polyethylene	IP	182	5	36
Polyethylene	LP	38,282	1,954	20
Polyethylene	MP	1,041,081	54,240	19
Steel	IP	1,526	91	17
Steel	LP	6,596	333	20
Steel	MP	17,698	921	19
Unknown	IP	0	2	0
Unknown	LP	0	1	0
Unknown	MP	222	83	3
Grand Total		**1,105,587**	**57,630**	**19**

Consistent with the 2010 IM, the updated service connection records have been valued using the same methodology as used in the 2003 NGC valuation. The replacement cost for service connections including riser and valve was set equal to the sum of the riser cost and the cost for supervision and records which were used for the 2003 NGC valuation.

The service pipe cost was calculated using the same methodology as was used for the 2003 NGC valuation. In 2003 the costs for service pipes were broken into a base cost for the first 20 metres of pipe, plus a cost per metre for the length of pipe which exceeded

[12] Natural Gas Corporation Optimised Deprival Report for Distribution systems as at 30 June 2000, page 12 and Appendix V, page 31

20 metres. This same approach has been used in the updated valuation; however the actual length of the service pipe from the adjusted 2003 asset register has been used rather than the average length. If a particular service pipe was shorter than 20 metres, only the base cost was used.

As not all service pipe sizes were represented in the 2003 NGC service connection valuation, costs for intermediate pipe sizes were estimated using the next highest pipe size, (or the highest standard pipe size which was available, in accordance with the handbook approach in electricity.

Cathodic Protection

The cathodic protection assets in the updated 2008 asset register could not be reconciled with the cathodic protection assets in the 2003 NGC valuation as cathodic protection in the earlier valuation was based on an allowance rather than actual asset details. The 2003 NGC valuation of cathodic protection was based on the general rule that as the length of pipeline increases, the level of cathodic protection required increases and the type of cathodic protection required changes. The 2003 quantities cathodic protection assets are effectively notional. The 2008 asset register contains details of actual cathodic protection assets. These assets have been treated as "value modified" assets as they were given an estimated quantity in 2003, now known to be incorrect (Clause 2.2.1(2)(c)(iii)).

Cathodic Protection assumptions used in 2003 NGC valuation:

Length of steel pipe by network	Cathodic Protection asset	Replacement cost per asset	Quantity allowance
Less than 5,000 metres	Sacrificial anode bed	$3,000	11
Between 5,000 and 15,000 metres	Sacrificial anode bed	$10,000	20
Greater than 15,000 metres	Impressed current system	$25,000	4

Cathodic Protection asset summary from adjusted 2003 asset register based on actual quantities:

Asset Description	Number of assets
Cathodic Protection - Anode	372
Cathodic Protection – Bonded Isolation	1
Cathodic Protection - Monitor Wire	304
Rectifier	1

It can be seen from the two tables above that it is not possible to reconcile the 2003 NGC valuation cathodic protection allowances with the quantities in the adjusted asset register.

There are no values for replacement costs for anodes, bonded isolation, monitor wires or rectifiers in the 2003 NGC valuation. Instead, as for other asset types which were not

valued in 2003, the valuation approach that was used to value the Auckland Gas Distribution Network for the Gas Final Authorisation of 2005 has been used.

For the purpose of the NGC valuation as at 30 June 2003, these costs have had an adjustment of -4.3% applied, to index the costs back from 30 June 2005 to 30 June 2003[13].

DRS and Gate Stations

Gate stations and District Regulating Stations (DRS) have been treated as "value modified" assets as they were given an estimated quantity in 2003, now known to be incorrect (Clause 2.2.1(2)(c)(iii)). These assets were valued according to three size categories in the 2003 NGC valuation. There was no differential in costs between gate stations and DRS.

2003 NGC ODV Gate station and DRS costs:

DRS Type	Category	Size classification	DRS cost	Valves & installation	Total cost
DRS1	Type 1	Provides up to 750 scmh	$34,217.52	$3,029.09	$37,246.61
DRS2	Type 2	Provides up to 2500 scmh	$34,217.52	$3,029.09	$37,246.61
DRS3	Type 3	Provides up to 5000 scmh	$68,435.05	$4,487.54	$72,922.59

The adjusted 2003 asset register contains gate stations split into 8 size categories and DRS split into 4 size categories. These were mapped to the corresponding 2003 size category in order to value these using the same methodology as for the 2003 NGC valuation.

Asset Type	2008 code	2008 category	Equivalent 2003 category
Gate station	GS-GO1	25000-80000 m3/h	Type 3
Gate station	GS-GO2	12500-25000 m3/h	Type 3
Gate station	GS-GO3	6000-12500 m3/h	Type 3
Gate station	GS-GO4	4000-6000 m3/h	Type 3
Gate station	GS-GO5	1500-4000 m3/h	Type 3
Gate station	GS-GO6	1000-1500 m3/h	Type 2
Gate station	GS-GO7	500-1000 m3/h	Type 2
Gate station	GS-GO8	0-500 m3/h	Type 1
DRS	PR-100F	0-100 m3/h	Type 1
DRS	PR-500F	100-500 m3/h	Type 1
DRS	PR-2000	500-2000 m3/h	Type 2
DRS	PR-8000	2000-8000 m3/h	Type 3

The gate station and DRS asset records in the adjusted 2003 asset register are split into several components – building, regulator (for DRS only), valves, pipework and fittings, and instrumentation and RTUs. The replacement costs used in the 2003 NGC valuation were split into a cost for the DRS, and a separate cost for "valves and installation". The

[13] The adjustment method used for all CPI adjustments was the same as that used for the Gas Control Model, which uses a weighted average of the sum of the four quarterly CPI indices

2003 NGC valuation classification of valves and installation was assumed to correspond to the 2008 asset category "valves, pipework and fittings" and so the cost for this category was set equal to the 2003 NGC valuation cost for valves and installation.

Costs for the other components of the gate station and DRS costs were based on the 2003 NGC valuation DRS cost, and split into the different components by using the relativities of the replacement costs from Vector's 2008 internal valuation.

Gate Station/DRS classification (updated 2003 register)	Replacement costs applied to updated 2003 asset register				
	Building	Instrumentation	Regulator	Valves, Pipework & Fittings	Total (matches 2003 total cost)
GS-GO1	$48,211	$20,224		$4,488	$72,923
GS-GO2	$39,146	$29,289		$4,488	$72,923
GS-GO3	$48,507	$19,928		$4,488	$72,923
GS-GO4	$46,257	$22,178		$4,488	$72,923
GS-GO5	$43,496	$24,939		$4,488	$72,923
GS-GO6	$20,754	$13,464		$3,029	$37,247
GS-GO7	$23,790	$10,427		$3,029	$37,247
GS-GO8	$21,373	$12,845		$3,029	$37,247
PR-100F	$17,323	$9,504	$7,391	$3,029	$37,247
PR-500F	$17,025	$4,793	$12,400	$3,029	$37,247
PR-2000	$18,482	$8,851	$6,884	$3,029	$37,247
PR-8000	$32,073	$8,426	$27,936	$4,488	$72,923

Odorisation

Odorisation assets were excluded from the 2008 asset register due to low materiality. The 2003 NGC valuation contained two odorisation assets in Rotorua and Gisborne. These assets will not be included in the initial RAB and will be treated as excluded assets under clause 2.2.1(2)(c)(ii).

Special Crossings

The 2003 NGC valuation did not include special crossings – additional costs associated with laying pipeline across rivers, streams or railways. Special crossings were listed in the 2008 asset register and included in the adjusted 2003 asset register as permitted by the 2010 IM section 2.2.1(2)(c)(i): assets omitted from the 2009 disclosed assets in error. These assets will be classified as "included" assets.

Summary of special crossings in updated 2003 register:

Material of pipeline using special crossing	Number of special crossings
IP Steel	54
LP Steel	1
MP Polyethylene	93
MP Steel	34

Since replacement costs for special crossings are not available from the 2003 NGC valuation, the valuation approach that was used to value the Auckland Gas Distribution Network for the Gas Final Authorisation of 2005 has been used.

The special crossing costs from the work completed for the 2005 Auckland Gas Distribution Network ODV required some adjustments before they could be used for the North Island network. The calculation of the average special crossing cost required the deduction of the average standard pipeline cost. The calculation was changed to use the average standard pipeline cost from the 2003 NGC ODV rather than the 2005 Auckland Gas ODV.

As the costing work for the 2005 Auckland Gas ODV was completed in 2006, an adjustment of -6.6% was applied to index the costs back from 31 March 2006 to 30 June 2003.

Critical Spares

The 2003 NGC valuation did not include any value for critical spares. These are allowed to be included in the initial RAB through the 2010 IM section 2.2.1(2)(c)(i): assets omitted from the 2009 disclosed assets in error. These assets will be classified as "included" assets.

The value of critical spares has been determined from a register of gas spares compiled in 2008. The level of critical spares held by Vector in 2008, acting as a reasonable and prudent operator, has been deemed to be the same level of spares that would have been held in 2003 by an asset owner operating on the same basis. It is not possible to establish the exact list of spares that were held in 2003 due to the length of time that has elapsed and changes in staff and systems over that time.

To calculate the value that critical spares would have had as at June 2003, an adjustment of -12.6% was applied to the 2008 costs to arrive at 2003 values. Critical spares are included as a single record in the adjusted 2003 asset register.

Pipeline Valves

Pipeline valves were not included in the 2003 NGC valuation. There was no mention of mains or service pipe valves in the 2003 NGC valuation report, nor was there any detail on the standard replacement cost of pipeline valves in the draft MED handbook which the 2003 NGC valuation report referenced.

The 2008 asset register recorded mains and service pipeline valves. Based on this information, the following table shows quantities of valves that were included in the 2003 adjusted asset register as allowed for under the 2010 IM section 2.2.1(2)(c)(i): assets omitted from the 2009 disclosed assets in error. These assets will be classified as "included" assets.

Valve type	Quantity
Mains Pipe Valve	1,008
Service Pipe Valve	150

In the absence of detail on how valves were valued in 2003, the valuation approach that was used to value the Auckland Gas Distribution Network for the Gas Final Authorisation of 2005 has been used.

The 2005 valve replacement costs were adjusted by CPI movements of -4.3% to arrive at a value applicable at 30 June 2003.

Depreciation

Asset Lives

The following lives have been used for the updated 2003 valuation. These are the same as the lives used for the 2003 NGC valuation. Where residual lives were applied in the 2003 NGC valuation (a minimum remaining life used for calculating the depreciated value) these have been replicated in the adjusted 2003 asset register.

Category	**Standard life**	**Residual life**
Cathodic Protection	25	5
District Regulating Station	30	5
Gate Station	30	5
Mains Pipe – polyethylene pre 1985	25	5
Mains Pipe – MP and LP steel	30	5
Mains Pipe – polyethylene post 1985	50	8
Mains Pipe – IP steel	65	8
Service Connection	30	0
Service Pipe	30	0
Special Crossings - polyethylene	50	0
Special Crossings - steel	65	0
Valves	35	0
Critical Spares	43.5[14]	0

Optimisation

The optimisation of the gas distribution assets in the 2003 NGC valuation was based on a projection of load growth using a planning horizon of 15 years. Pipelines larger than that required for the forecast load were optimised down, and pipelines no longer required were optimised out. Pipelines below 50mm of diameter were not considered for optimisation as replacement cost differences were not significant for the smaller sizes of pipe. Many of the optimisations involved replacing steel pipelines which could be operated as PE pipelines at lower costs[15].

[14] This is the weighted average life of all gas distribution assets, weighted by replacement cost

[15] "ODV 2003 Optimised Deprival Valuation Transmission & Distribution as at 30 June 2003", Disclosed NGC Report

Optimisation was applied to the adjusted 2003 asset register by reviewing the list of assets optimised in the 2003 NGC valuation, identifying and matching assets (to the extent possible) and applying the same optimisation to the corresponding record(s) in the revised asset register. In some cases matching records were not able to be found, which may have been due to assets being removed between 2003 and 2008 or other data quality errors in the 2003 NGC valuation.

As in 2003, optimisation was applied to district regulating stations where steel IP main pipes were optimised to MP PE pipelines, meaning that any DRS on that line were no longer required.

Comparison of optimisation for mains pipelines between 2003 NGC valuation and the adjusted 2003 asset register:

Optimisation of mains pipeline assets	Depreciated replacement cost ($)	Optimised depreciated replacement cost ($)	Optimisation ($)	Optimisation (%)
Original 2003 NGC valuation	94,759,215	90,431,736	4,327,479	4.6%
Adjusted 2003 asset register	101,578,439	97,786,725	3,791,714	3.7%

The adjusted 2003 asset register reflects a lower level of optimisation than the original 2003 NGC valuation asset register because the more detailed and accurate asset records include less steel pipe and hence less optimisation is required. For example there was a decrease of approximately $300,000 in the optimisation for Hamilton MP steel mains pipe due to having 20 km less MP steel pipe in the adjusted 2003 asset register.

Economic Value Test

The 2003 NGC valuation economic value (EV) test compared the present value of the annual revenue (the economic value) from each individual network area, with the Optimised Depreciated Replacement Cost ("ODRC") of mains pipelines and facilities for that network area. Where the ODRC was greater than the economic value, an EV adjustment was applied to the ODRC so that the optimised deprival value was equal to the EV.

The EV adjustment for the revised asset register was calculated using the same spreadsheet that was used for the original 2003 NGC valuation EV adjustment calculation. The ODRC values were updated to those calculated in the adjusted 2003 asset register.

Due to the increased quantity of mains pipe, leading to an increase in the ODRC value, the EV adjustment increased from $2.8 million in the original 2003 NGC valuation to $4.9 million for the valuation based on the adjusted asset register.

The following table shows the network areas which have had EV write downs applied:

Network areas	Original 2003 NGC valuation EV write down ($)	EV write down based on revised asset register ($)
Waitoa	116,508	120,110
Pirongia	25,698	35,300
Kinleith Dist	68,667	43,108
Okoroire	19,430	1,714
Te Rapa	8,911	No adjustment
Kiwitahi	33,809	42,870
Tatuanui	35,092	Decommissioned
Tauwhare	35,092	Decommissioned
Whangarei	109,682	337,580
Warkworth	71,600	49,678
Wellsford	69,476	87,634
Oakleigh	202,007	203,262
Maungatapere	1,138	No adjustment
Kuku	16,555	Decommissioned
Te Horo	253,200	232,038
Edgecumbe	7,871	7,664
Rainbow Mountain	4,676	4,571
Reporoa	24,728	22,603
Te Teko	31,964	38,642
Drury	No adjustment	45
Whangaparoa	1,682,924	3,691,114
Papakura (Karaka)	No adjustment	637
Total	2,819,029	4,918,571

The overall increase in EV adjustment is primarily due to an increase in the EV adjustment applied to the Whangaparoa network. This network had the largest write down in the 2003 NGC valuation. However, due to the increase in quantity of pipe identified in the Whangaparoa network in the adjusted asset register the ODRC has increased. As the present value of the annual revenue (the economic value) from the network area is unchanged, the network has a higher EV write down in the adjusted 2003 asset register.

4. Adjustment to correct asset ages

As part of the asset register roll forward process Vector has identified for the North Island gas distribution system, that asset ages, and the way these were applied to assets in order to roll forward the original asset valuation under the Gas (Information Disclosure) Regulations 1997, do not correspond with the asset ages and their application to assets in the more detailed asset register.

Vector has elected to correct this error as allowed under the IM clause 2.2.1(2)(c)(iii) where "assets ... [have been] given an estimation of ... age ... now known to be incorrect ...". All assets in the asset register apart from special crossings, critical spares, valves and intangible assets are affected by this error and are therefore classified as "value modified" under IM clause 2.2.1(1). The corrected depreciation calculations from 2003 to 2009 are now calculated on an individual asset basis, considering each asset's correct commissioning date and remaining life.

The age corrections do not affect the value of assets in the year they enter the RAB asset register. The correction only affects depreciation values in subsequent years. This adjustment is not required in Schedule A4 but is included in an amended table (Appendix A) which complies with the requirements set out in Table 1, Schedule C of the Notice issued on 6 July 2011.

5. Asset Register 2003

The following table provides the reconciliation between the quantities in the 2003 NGC valuation and the quantities from the adjusted 2003 asset register.

Category	Units	Original Quantity	Adjusted Quantity	Δ Quantity
Cathodic Protection	number	35	678	643
District Regulating Station	number	175	134	8
Gate Station	number	included under DRS	49	
Odorisation	number	2	0	-2
Mains Pipe	metres	2,632,207	2,863,232	231,025
Service Connection	number	55,832	56,838	1,006
Service Pipe	metres	not measured	1,105,587	N/A
Special Crossings	number	not included	182	N/A
Critical Spares	number	not included	1	N/A
Valves	number	not included	1,158	N/A

6. Adjusted 2003 valuation

The following table shows the reconciliation between the original 2003 NGC valuation and the valuation based on the adjusted 2003 asset register

Category	Original 2003 valuation ($)	Adjusted 2003 valuation ($)	Δ Valuation ($)
Cathodic Protection	109,025	2,143,948	2,034,923
District Regulating Station	2,488,874	1,453,067	-397,674
Gate Station	included under DRS	638,134	
Odorisation	38,373	0	-38,373
Mains Pipe	87,779,430	94,203,841	6,424,411
Service Connection	21,248,320	1,971,862	-2,286,837
Service Pipe	included in service connection	16,989,622	
Special Crossings	not included	4,318,091	4,318,091
Critical Spares	not included	131,611	131,611
Valves	not included	473,586	473,586
Totals	111,664,022	122,323,760	10,659,738

7. Inclusion of Intangible Assets

Vector has included a value of $1.4 million for intangible assets (excluding goodwill) as allowed under the 2010 IM clause 2.2.1(2)(c)(i) for assets omitted in error. This asset is treated as an 'included' type and has been included in 2005.

The value has been established in accordance with NZ IAS 38 paragraph 24 (as specified in 4.1.8 of the Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper December 2010 and has been reviewed by a qualified accountant.

The Independent Engineer has not reviewed this value.

Appendix A - *Summary table of adjustments corresponding to Table 1 of Schedule C: Information requirements for engineer's report*

Nature of adjustment	**Inclusions for assets omitted in error from the 2009 disclosed assets**	
Category of adjustment	Correct asset register errors	
GDB IM cl. Ref	2.2.1(2)(c)(i)	
Designated asset type	Included	
Description and number of assets	Special Crossings	182
	Critical Spares	1
	Valves	1,158
Supporting information	Section 3 of report	
2003 ODV original ($000)	Special Crossings	0
	Critical Spares	0
	Valves	0
	Total	0
2003 ODV adjusted ($000)	Special Crossings	4,318
	Critical Spares	132
	Valves	473
	Total	4,923
Value of adjustment ($000)	Special Crossings	4,318
	Critical Spares	132
	Valves	473
	Total	4,923

Nature of adjustment	**Corrections for assets allocated to the incorrect asset category, or given an estimation of quantity, age, category or location now known to be incorrect**	
Category of adjustment	Correct asset register errors	
GDB IM cl. Ref	2.2.1(2)(c)(iii)	
Designated asset type	Modified value	
Description and number of assets	Cathodic Protection	678
	Gate Station/DRS	183
	Mains Pipe	2,863,232
	Services	56,838
Supporting information	Section 3 of report	
2003 ODV original ($000)	Cathodic Protection	109
	Gate Station/DRS	2,489
	Mains Pipe	87,779
	Services	21,248
	Total	111,626
2003 ODV adjusted ($000)	Cathodic Protection	2,144
	Gate Station/DRS	2,091
	Mains Pipe	94,204

	Services	18,961
	Total	117,400
Value of adjustment ($000)	Cathodic Protection	2,035
	Gate Station/DRS	-398
	Mains Pipe	6,424
	Services	-2,287
	Total	5,775

Nature of adjustment	**Corrections for assets included in error in the 2009 disclosed assets**	
Category of adjustment	Correct asset register errors	
GDB IM cl. Ref	2.2.1(2)(c)(iii)	
Designated asset type	Excluded	
Description and number of assets	Odorisation	2
Supporting information	Section 3 of report	
2003 ODV original ($000)	Odorisation	38
2003 ODV adjusted ($000)	Odorisation	0
Value of adjustment ($000)	Odorisation	-38

Nature of adjustment	**Inclusions for assets omitted in error from the 2009 disclosed assets**	
Category of adjustment	Correct asset register errors	
GTB IM cl. Ref	2.2.1(2)(c)(i)	
Designated asset type	Included	
Description and number of assets	Intangible Assets	1
Physical asset life	Intangible Assets	0 (not depreciated)
Supporting information	Section 7 of report	
2005 Disclosure year addition ($000)	Intangible Assets	1,442
Value of adjustment in 2005 disclosure year ($000)	Intangible Assets	1,442

Nature of adjustment	**Adjustment to correct asset age**	
Category of adjustment	Correct asset register errors	
EDB IM cl. Ref	2.2.1(2)(b)(iii)	
Designated asset type	Value modified	
Description and number of assets	Gate Stations & DRS	444
	Pipeline	101,424
	Cathodic Protection	678
Supporting information	Section 4 of report	
2003 value ($000)	Gate Stations & DRS	2,091
	Pipeline	111,193
	Cathodic Protection	2,144
	Total	115,429

Nature of adjustment	**Adjustment to correct asset age**	
Category of adjustment	Correct asset register errors	
EDB IM cl. Ref	2.2.1(2)(b)(iii)	
Designated asset type	Value modified	
Description and number of assets	Gas Pipelines	44
	Gas Stations	3
Supporting information	Section 4 of report	
2004 value ($000)	Gas Pipelines	2,217
	Gas Stations	6
	Total	2,223

Nature of adjustment	**Adjustment to correct asset age**	
Category of adjustment	Correct asset register errors	
EDB IM cl. Ref	2.2.1(2)(b)(iii)	
Designated asset type	Value modified	
Description and number of assets	Gas Pipelines	155
	Gas Stations	3
Supporting information	Section 4 of report	
2005 value ($000)	Gas Pipelines	4,375
	Gas Stations	188
	Total	4,563

Nature of adjustment	**Adjustment to correct asset age**	
Category of adjustment	Correct asset register errors	
EDB IM cl. Ref	2.2.1(2)(b)(iii)	
Designated asset type	Value modified	
Description and number of assets	Gas Pipelines	95
Supporting information	Section 4 of report	
2006 value ($000)	Gas Pipelines	2,341
	Total	2,341

Nature of adjustment	**Adjustment to correct asset age**	
Category of adjustment	Correct asset register errors	
EDB IM cl. Ref	2.2.1(2)(b)(iii)	
Designated asset type	Value modified	
Description and number of assets	Gas Pipelines	112
Supporting information	Section 4 of report	
2007 value ($000)	Gas Pipelines	2,080
	Total	2,080

Nature of adjustment	**Adjustment to correct asset age**	
Category of adjustment	Correct asset register errors	
EDB IM cl. Ref	2.2.1(2)(b)(iii)	
Designated asset type	Value modified	
Description and number of assets	Gas Pipelines	55
	Gas Stations	7
Supporting information	Section 4 of report	
2008 value ($000)	Gas Pipelines	5,678
	Gas Stations	264
	Total	5,942

Nature of adjustment	**Adjustment to correct asset age**	
Category of adjustment	Correct asset register errors	
EDB IM cl. Ref	2.2.1(2)(b)(iii)	
Designated asset type	Value modified	
Description and number of assets	Easement-Gas	2
	Gas Pipelines	56
	Gas Stations	7
Supporting information	Section 4 of report	
2009 value ($000)	Easement-Gas	2
	Gas Pipelines	4,966
	Gas Stations	268
	Total	5,235

GDB Name: **Gas Distribution Business**
Disclosure Year Ended: **30 June 2010**

SCHEDULE A4: ASSET ADJUSTMENT PROCESS

Summary of Engineer's Valuation Adjustments (at time asset enters regulatory asset register)

row	Show only the incremental amount of the valuation adjustment **Asset adjustment process - adjustments**	2003 * ($000)	2004 ($000)	2005 ($000)	2006 ($000)	2007 ($000)	2008 ($000)	Year Ended 2009 ($000)	Ref
10	Include assets used to **supply gas distribution services**								2.2.1(2)(b)
11	Correct asset register errors								
12	Special Crossings	4,318							
13	Critical Spares	132							
14	Valves	474							
15	Cathodic Protection	2,035							
16	Gate Station/DRS	(398)							
17	Mains Pipe	6,424							
18	Services	(2,287)							
19	Odorisation	(38)							
20	Intangible Assets			1,442					
21									
22		10,660	–	1,442	–	–	–	–	2.2.1(2)(c)
23									
24	Total value of adjustments by **disclosure year**	10,660	–	1,442	–	–	–	–	

25 ** Includes assets which first entered the regulatory asset register in a disclosure year prior to 2003.*

26

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Pieter Nel
Director
Nel Consulting Limited
Auckland

18 July 2012

Dear Mr Nel

RE: ASSET ADJUSTMENT QUERIES – GAS DISTRIBUTION

In accordance with your email of 27 June 2012, Vector's report "Supplementary Information Required by the Commerce Commission on Adjustments to Gas Distribution Network Optimised Deprival Valuation (as at 30th June 2003)" dated July 2012 is attached providing responses to the queries you raised. This report should be read in conjunction with and supplementary to the September 2011 report referred to in your email.

We have engaged with Wilson Cook & Co, who acted as an Independent Engineer in relation to the September 2011 report, in order to provide the supplementary information. Attached is a letter from Wilson Cook & Co that acknowledges they have seen the July 2012 report and that the submission of that information does not require them to modify their letter dated 27 September 2011 titled, 'Re: engineering report in relation to Commerce Commission's asset adjustment process (Gas Distribution)".

If you would like to discuss this matter further please contact Brett Butler, Group Manager Pricing & Valuation on 09 978 8286 or at brett.butler@vector.co.nz.

Yours sincerely

Allan Carvell
Group General Manager Regulation & Pricing

Wilson Cook & Co
Engineering and Management Consultants
Advisers and Valuers

Reply to: Auckland Office
Our ref: 1212
Email: info@wilsoncook.co.nz

18 July 2012

The Chief Executive
Vector Ltd
101 Carlton Gore Road
NEWMARKET

BY EMAIL

Attention: Mr Brett Butler, Group Manager, Pricing & Valuation

Dear Sir,

RE: SUBMISSION BY VECTOR OF SUPPLEMENTARY INFORMATION IN RELATION TO COMMERCE COMMISSION'S ASSET ADJUSTMENT PROCESS FOR GAS DISTRIBUTION

We refer to your request in relation to your gas distribution asset adjustment process for a letter that, if considered appropriate, "notes that [Wilson Cook & Co is] aware of additional information being provided by Vector [in relation to the value of various assets associated with Vector's gas distribution network] and confirms that [Vector's] submission of that information does not require [us] to modify [our letter dated 27 September 2011 titled, *'Re: engineering report in relation to Commerce Commission's asset adjustment process (gas distribution)'*]".

The additional information referred to is set out in Vector's document, *'Supplementary information required by the Commerce Commission on adjustments to gas distribution network optimised deprival valuation (as at 30th June 2003), July 2012'*. It comprises information under the following headings: Mains Pipeline, Service Connections and Pipe, Critical Spares, Intangible Assets, the Correction of Asset Ages, Tests to Determine Asset Quantity and Life, and Optimisation and EV Testing.

No Change in Our Letter of 27 September 2011

After making enquiries with you, we are satisfied on reasonable grounds that:

(a) the adjustments discussed in your additional information are unaltered from those expressed in the original report prepared by you in September 2011 and discussed in our letter of 27 September 2011 insofar as they relate to the particular asset classes and methodologies on which we expressed an opinion in that letter;

(b) the further explanations given in your additional information are consistent with the facts as we know them insofar as they relate to the particular asset classes and methodologies on which we expressed an opinion in that letter; and therefore

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(c) that letter – *viz.* our letter of 27 September 2011 – remains applicable in all respects including (but not limited to) the opinions, qualifications, conditions, exclusions and other statements expressed in it.

Additional Certifying Parties

In relation to this matter, we again recommend that you draw to the Commission's attention a statement made by Mr Pieter Nel, the Commission's consultant, in his email to Vector of 22 June 2012, reading,

> *It is recognised that specific asset adjustments, as in the case of intangible assets, are more appropriately reviewed by a qualified party (or party other than the Independent Engineer).*

We agree with that view and thus consider that Mr Nel was wrong to have continued in his email, stating (in relation to electricity assets but implicitly in relation to gas assets as well),

> *However, as per the Commission's Information Request ("Notice To Supply Information to the Commerce Commission – Section 53ZD of the Commerce Act 1986"), should an EDB elect to undertake an asset adjustment process, a written engineer's report complying with the requirements specified in Schedule C must be provided. It is for this reason that a signed statement from Wilson Cook & Co (we note that you have engaged Wilson Cook & Co as your independent engineer) which at a minimum should state that where values under Generally Accepted Accounting Practice have been relied on (for this instance, for the proposed inclusion of intangible assets), the values have been supplied or reviewed by an appropriately qualified party (typically identifying the qualified party/accountant, type and date of review performed, supporting documentation which provides a breakdown of the proposed adjustment with a description of each to improve the ability of the reader of the Independent Engineer's report to better understand the proposed adjustment), and that based on this, the corresponding values in relation to the proposed asset value adjustment for intangible assets meets the requirements of Schedule C.*

No matter ought to be certified by a chartered professional engineer (or any other type of engineer, for that matter) unless it is an engineering matter within the certifier's field of competence. Of relevance to your gas distribution assets, values determined from financial records (e.g. in relation to intangible assets), calculations related to the rolling-forward of the valuation (arising in the present instance from the correction of asset ages) and audit functions of all types (including any work that involves processes of a type that a qualified auditor would use) are clearly instances that ought to be excluded from any engineering certification if the certificate is not to be unfounded and thus potentially misleading.

Thus, we are not able to accede to Mr Nel's request in relation to those matters that we stated in our letter of 27 September 2011 were outside our ambit and excluded from our certification.

However, there would appear to be no reason why Vector could not provide other methods of certification in relation to these asset classes, methodologies, calculations or suchlike, if considered necessary in support of the material it has already provided.

Yours faithfully,

Wilson Cook & Co Limited

SUPPLEMENTARY INFORMATION REQUIRED BY THE COMMERCE COMMISSION ON ADJUSTMENTS TO GAS DISTRIBUTION NETWORK OPTIMISED DEPRIVAL VALUATION

(as at 30th June 2003)

July 2012

A. Introduction

Additional information is provided in response to a query from the Commerce Commission received on 27 June 2012. This information is supplementary to, and should be read in conjunction with, "Adjustments to Gas Distribution Network Optimised Deprival Valuation (as at 30th June 2003) September 2011" (**the Report**).

B. Additional Information Requirements

1. Mains pipeline

Request from the Commerce Commission

"*In relation to Mains Pipeline – Even though it is clear that Vector used updated information to develop their latest valuation (based on the register produced for the 2008 internal valuation) and compared the results with the valuation performed in 2003, the information presented only provides insight into the quantity differences per material type for the two valuations. The requirements set by the Commission requires the reader of the Independent Engineer's report to be able to understand the data, information, calculations and assumptions employed, as well as to verify the arithmetical accuracy of the asset adjustment calculations. With this in mind, from the information submitted it is not clear what impact asset ages had on the proposed adjustment values when applying these two different registers and, without being prescriptive, it would assist the reader if the table on page 4 could be enhanced further to show average asset ages and values (Replacement and Depreciated). Furthermore, as a reader, the overall value of assets that are now included in the 2008 register which were not included in the 2003 register is not clear. From the table provided in your report, refer to page 4, it would appear that material types LP steel and LP PE were not present in 2003, however it is not clear if this is indeed the only additions not forming part of the 2003 valuation*."

Vector response

As noted in **the Report** (Section 6 and Appendix A Table 1) Vector increased the 2003 value of mains pipelines by $6.424 million. Mains pipelines are adjusted under the allowance for correction of asset register errors and have been treated as "value modified" assets.

The Report summarises the methodology followed to determine an adjusted register for mains pipelines. Subsequently, the value of the adjusted mains pipelines was determined by the same methodologies and input assumptions (i.e. unit replacement costs and total asset lives) as in the 2003 NGC valuation[1]. The valuation methodologies were unchanged in order to be compliant with the 2010 Input Methodologies (Section 2.2.1(6)) which requires the adjusted asset value to be based on the value that would have resulted from an application of the Gas (Information Disclosure) Regulations 1997 as at the later of the date the asset was first commissioned or that the fixed assets were

[1] ODV 2003 Optimised Deprival Valuation Transmission & Distribution as at 30 June 2003, Disclosed NGC Report

most recently revalued. The North Island network assets' most recent valuation was the 2003 NGC valuation.

In order to allow the reader to better understand the data, information, calculations and assumptions employed, Table 1 shows a comparison between the characteristics of mains pipelines in the original 2003 NGC valuation and the adjusted 2003 asset register.

The asset adjustment for mains pipelines has included both corrected quantities and ages. It is not practicable to determine the impact of age or quantity in isolation as each has an effect on the other. However we have included additional information presented in Table 1 which shows the change in length and weighted average age of all categories of mains pipelines.

Low Pressure (LP) pipes were included in the original 2003 NGC register but not listed as a separate category. LP pipes were included and valued as medium pressure (MP) as this was considered the modern equivalent (MEA) asset type for ODV purposes. As part of the asset adjustment we have shown LP pipes in their own category, however these continue to be valued as MP pipes as per the 2003 valuation. Additional information in relation to LP pipes has been included in Table 1. Overall, the adjustment made to mains pipes is submitted under the allowance for quantity corrections ("value modified"), not found ("included") assets.

Application of the 2003 NGC valuation methodology to the corrected asset register for mains pipelines resulted in an increase of $6.424 million.

TABLE 1 – Mains Pipelines

Original 2003 NGC valuation

Pressure and Material	Length (m)	RC ($)	DRC ($)	ODRC ($)	ODV ($)	RC weighted average age (yr)
IP Steel	212,796	28,965,045	20,926,825	19,009,667	18,452,125	18.0
MP Steel	188,644	22,601,422	4,134,273	1,852,922	1,798,577	30.3
MP PE	2,230,767	102,034,873	69,698,116	69,569,148	67,528,728	12.9
LP Steel	0	0	0	0	0	
LP PE	0	0	0	0	0	
Total	**2,632,207**	**153,601,340**	**94,759,215**	**90,431,736**	**87,779,430**	**16.4**

Adjusted 2003 valuation

Pressure and Material	Length (m)	RC ($)	DRC ($)	ODRC ($)	ODV ($)	RC weighted average age (yr)
IP Steel	203,378	27,826,051	19,598,991	18,007,968	16,748,598	19.2
MP Steel	147,212	17,617,143	3,345,170	1,569,790	1,565,510	29.9
MP PE	2,448,433	112,224,672	77,944,227	77,736,933	74,963,666	12.5
LP Steel	21,187	2,377,398	398,896	180,879	180,879	32.8
LP PE	43,022	2,000,681	745,189	745,189	745,189	22.2
Total	**2,863,232**	**162,045,946**	**102,032,472**	**98,240,758**	**94,203,841**	**15.9**

Difference

Pressure and Material	Length (m)	RC ($)	DRC ($)	ODRC ($)	ODV ($)	RC weighted average age (yr)
IP Steel	- 9,418	- 1,138,994	- 1,327,835	- 1,001,698	- 1,703,527	1.2
MP Steel	- 41,432	- 4,984,279	- 789,103	- 283,132	- 233,067	- 0.4
MP PE	217,666	10,189,799	8,246,111	8,167,785	7,434,938	- 0.4
LP Steel	21,187	2,377,398	398,896	180,879	180,879	
LP PE	43,022	2,000,681	745,189	745,189	745,189	
Total	**231,025**	**8,444,606**	**7,273,258**	**7,809,022**	**6,424,411**	**- 0.5**

2. Service connections and pipe

Request from the Commerce Commission

"*In relation to Service Connections and Pipes – Similar to the comments in number 1 above, it is not clear how asset ages were affected by the use of an updated register (2008 register) and this should be made more clear by providing more information to assist the reader of the report to understand the data, information, calculations and assumptions employed as well as to verify the arithmetical accuracy. Also the overall value of assets now added which did not form part of the 2003 register should be made more clear. Additional to the same concerns raised in number 1, for Service Connections and Pipes Vector applied the same method of valuing the service connections in the 2003 asset valuation was used for the 2008 asset valuation. The method used in 2003 included using a base cost for the first twenty (20) meters of pipe and adding costs for pipes exceeding the 20 meter length. From this method, Vector has stated that they used the same base cost for pipes with lengths shorter than twenty (20) meters. With this in mind and the fact that Vector now has accurate pipe length information available (and appear to be using this updated data for purposes of the proposed adjustment in cases where the length is more than 20 meters), it is unclear why Vector did not use the actual pipe lengths to calculate all the asset values (also for those less than 20 meters). NCL notes from the table on page 5 that the bulk of the pipes are made from Polyethylene (pressure MP) with an average length of nineteen (19) meters which, depending on replacement costs, may have an impact on the overall adjustment value*."

Vector response

As noted in **the Report** (Section 6 and Appendix A Table 1) Vector decreased the 2003 value of service connections and pipes by $2.287 million. Service connections and pipes are adjusted under the allowance for correction of asset register errors and have been treated as "value modified" assets.

The Report summarises the methodology followed to determine an adjusted register for service connections and pipes. The value of the adjusted service connections and pipes was determined by the same methodologies and input assumptions (i.e. unit replacement costs and total asset lives) as in the 2003 NGC valuation[2]. The valuation methodologies were unchanged in order to be compliant with the 2010 Input Methodologies (Section 2.2.1(6)) which requires the adjusted asset value to be based on the value that would have resulted from an application of the Gas (Information Disclosure) Regulations 1997 as at the later of the date the asset was first commissioned or that the fixed assets were most recently revalued. The North Island network assets' most recent valuation was the 2003 NGC valuation.

NCL queries the valuation methodology followed for service pipes. Vector agrees that more appropriate valuation methodologies are available and in fact required as discussed in detail in previous submissions[3]. However, Vector is obliged to comply with the requirements of the 2010 Input Methodologies which, as discussed above and in **the Report**, in this case requires adjusted assets to be valued using the same valuation

[2] "ODV 2003 Optimised Deprival Valuation Transmission & Distribution as at 30 June 2003", Disclosed NGC Report

[3] Website: www.comcom.govt.nz. Document: /assets/Pan-Industry/Input-Methodologies/Draft-Reasons-Papers/Draft-Reasons-EDBs/AssetValutionSub/Vector-Attachment-Submission-on-EDBs-and-GPBs-Input-Methodologies-Asset-Valuation-Duncan-Ian-Head-Statement-Public-23-August-2010.

methodologies followed in the 2003 NGC valuation. Accordingly, service pipes were valued by applying the 2003 NGC base cost to the first 20 metres and the 2003 NGC cost per metre to the length of pipe exceeding 20 metres.

In order to allow the reader to better understand the data, information, calculations and assumptions employed, Table 2 shows a comparison between the characteristics of "services" in the original 2003 NGC valuation and "service connections" and "service pipes" in the adjusted 2003 asset register.

In answer to the NCL query the adjustment made to services connections and service pipes is submitted under the allowance for quantity corrections ("value modified"), not found ("included") assets. As noted in **the Report** the original 2003 NGC valuation included service connections and service pipes under a single asset type called services. Due to the limited information in the original 2003 valuation it is not possible to provide a comparison at a disaggregated level. For the same reasons it is not possible to demonstrate the impact of changes in asset ages or lengths on the asset valuation at a disaggregated level. If this were possible it would not be practicable to demonstrate the effect of age or quantity in isolation as each has an effect on the other. However we have included additional information presented in Table 2 which shows the change in quantities and weighted average age of all categories of service connections and pipe to the extent this information is available.

Application of the 2003 NGC valuation methodology to the corrected asset register for service connections and service pipes resulted in a reduction of $2.287 million.

TABLE 2 – Service Connections and Pipes

Original 2003 NGC valuation - Services (Including connection and pipes)

	Quantity	RC ($)	DRC ($)	ODRC ($)	ODV ($)	RC weighted average age (yr)
Services	55,832	32,894,289	21,248,320	21,248,320	21,248,320	10.3

Adjusted 2003 valuation - Service connections

Pressure	Quantity	RC ($)	DRC ($)	ODRC ($)	ODV ($)	RC weighted average age (yr)
IP	76	40,270	16,693	16,693	16,285	17.8
MP	54,541	3,321,320	1,885,697	1,885,697	1,859,075	13.0
LP	2,221	302,730	96,502	96,502	96,502	21.0
Total	**56,838**	**3,664,320**	**1,998,892**	**1,998,892**	**1,971,862**	**13.7**

Adjusted 2003 valuation - Service pipes

Pressure and Material	Length (m)	RC ($)	DRC ($)	ODRC ($)	ODV ($)	RC weighted average age (yr)
IP Steel	1,526	71,823	31,329	31,329	29,447	16.9
IP PE	182	5,253	2,315	2,315	2,291	16.8
MP Steel	17,698	386,181	20,739	20,739	20,699	29.9
MP PE	1,041,081	26,905,546	17,106,337	17,106,337	16,602,290	10.9
MP unknown	222	5,600	456	456	456	29.7
LP Steel	6,596	137,062	1,831	1,831	1,831	33.1
LP PE	38,282	850,705	332,608	332,608	332,608	18.4
Total	**1,105,587**	**28,362,170**	**17,495,614**	**17,495,614**	**16,989,622**	**11.5**

Difference

	Connection Quantity	RC ($)	DRC ($)	ODRC ($)	ODV ($)	RC weighted average age (yr)
Total	1,006	- 867,799	- 1,753,814	- 1,753,814	- 2,286,837	1.5

3. Critical spares

Request from the Commerce Commission

"*In relation to Critical Spares - Vector has proposed for the inclusion of critical spares in their initial regulatory asset base and has indicated that the value of critical spares has been determined from a register of gas spares compiled in 2008 and the level has been deemed to be the same level of spares that would have been held in 2003. It is recognised that from the Input Methodologies – Reasons Paper ("Input Methodologies (Electricity Distribution and Gas Pipeline Services – Reasons Paper", December 2010) it is stated that GPBs should include network spares in the roll forward as additions to the RAB value where they are treated as the cost of an asset under GAAP and held in appropriate quantities, considering the historical reliability of the equipment and the number of items installed on the network. In order to allow a reader to fully understand and verify the accuracy of the adjustment as required for in Schedule C, NCL is of the view that to fully comply Vector should include more information on how the appropriate quantity of spares was derived for the 2008 register which forms the basis of the proposed adjustment in 2003."*

Vector response

As noted in **the Report** Vector included a value of $131,611 for critical spares in 2003 which was based on a critical spares list established in 2008.

The 2008 register of critical gas spares was compiled for a robust internal valuation of the North Island gas distribution network in 2008[4]. The purpose of the 2008 valuation was to address the shortcomings of the 2003 NGC valuation (shortcomings discussed in detail under previous submission[5]). The 2008 valuation was reviewed by PricewaterhouseCoopers[6] and Wilson Cook & Co[7]. Wilson Cook & Co considered spares to have been valued appropriately for the purposes of the 2008 valuation.

The 2008 register of spares was compiled by field staff and reviewed by Vector asset engineers. The register includes 213 individually valued items which fall into the following categories:

- wrap around repair clamps
- temporary repair joints
- TDW fittings
- PE-steel transitions
- DRS spares
- Overhaul kits
- PE fittings – non-standard
- valves
- emergency fittings

[4] Vector Limited, "Optimised Deprival Valuation for the Gas North Island Distribution Network As at 30 June 2008", Undisclosed Internal Vector Report

[5] Website: www.comcom.govt.nz. Document: /assets/Pan-Industry/Input-Methodologies/Draft-Reasons-Papers/Draft-Reasons-EDBs/AssetValutionSub/Vector-Attachment-Submission-on-EDBs-and-GPBs-Input-Methodologies-Asset-Valuation-Duncan-Ian-Head-Statement-Public-23-August-2010.

[6] Letter from PricewaterhouseCoopers to Vector, RE: Gas ODV Valuations, 29 October 2008

[7] Letter from Wilson Cook & Co to Vector, RE: Valuation of system fixed assets of Vector's un-controlled gas distribution networks at 30 June 2008, 30 September 2009

- emergency pipe

The list was compiled using the historical ODV approach which allows the inclusion of a level of spares which is appropriate considering the historical reliability of equipment and the number of items installed on the network. Engineering judgement was used by Vector's asset engineers to estimate a conservative quantity necessary to meet Vector's stated quality of supply with non-emergency and excess items removed from actual spares quantities.

The 2008 book value of spares ($150,606) were adjusted by CPI (Series SE9A) movements between 2003 and 2008 to reflect costs in 2003 terms ($131,611).

As noted in **the Report** spares were given a weighted average life of 43.5 years, compliant with the 2010 Input Methodologies requirement that spares need to be assigned the same asset lives as the network assets they support.

4. Intangible assets

Request from the Commerce Commission

"*In relation to Intangible Assets - As per the Commission's Information Request ("Notice To Supply Information to the Commerce Commission – Section 53ZD of the Commerce Act 1986"), should a GDB elect to undertake an asset adjustment process, a written engineer's report complying with the requirements specified in Schedule C must be provided. The Input Methodologies – Reasons Paper ("Input Methodologies (Electricity Distribution and Gas Pipeline Services – Reasons Paper", December 2010) further states the nature of the Intangible Assets that could form part of the adjustment value. From the above, NCL notes that the proposed adjustment value is not broken down sufficiently for a reader to assess if indeed the proposed adjustment could be allowed under the requirements set by the Commission. Also, Vector has mentioned in the report that the value has been established in accordance with NZ IAS 38 and has been reviewed by a qualified accountant. However, it would assist the reader if more information about the qualified accountant and the nature of the review performed by them were supplied (especially in this case that the independent engineer has indicated that it did not review such information). Thus in order to fully comply, apart from the requirement of providing more details about the proposed Intangible Assets, NCL is of the view that the Independent Engineer (in this case Wilson Cook & Co Limited) should at a minimum state that a separate qualified party reviewed information in relation to intangible assets and reference or include documentation in relation to this review process in support of the proposed adjustment, and further state that the corresponding value meets the requirements of Schedule C.*"

Vector response

As noted in **the Report** Vector included a value of $1.442 million for intangible assets (excluding goodwill) as allowed under the Input Methodologies (IM) clause 2.2.1(2)(b)(i) for assets omitted in error. This asset is treated as an 'included' type and has been included in 2005.

The value is based on an internal Vector investigation in September 2011 to identify and value intangible assets to be included in the RAB. The investigation was conducted under the guidance of the suitably qualified senior employees of Vector – the Vector

Group Financial Controller (BCom, CA) and the Vector Acting Chief Financial Officer (BCA, LLB (Hons), CA) who are considered by Vector to be qualified parties under Schedule C. A review of the information was performed by KPMG in their capacity as auditor under the July 2011 s53ZD notice in order to provide their audit certificate. The review included an assessment of Vector's application of intangible asset recognition criteria to identify assets and treatment of useful life estimate.

The value is made up of a number of intangible assets listed in Table 3. The list only includes items which meet the intangible asset recognition criteria summarised below.

The Input Methodologies allow the inclusion of intangible assets in the RAB providing the intangible asset is not goodwill and meets the GAAP definition for intangible assets. Under NZ GAAP (NZ IAS 38) for items to be recognised as intangible assets, certain recognition criteria must be met. These criteria are specifically referred to in the IM Reasons Paper:

- it is capable of being separated or divided from the entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, asset or liability, or arises from contractual or other legal rights, and
- it is probable that future economic benefits that are attributable to the asset will flow to the entity and the cost of the asset can be measured reliably.

Items meeting the recognition criteria were valued on a cost to re-create basis which is consistent with the IM's guidance that intangibles should be included at cost. Operational staff and management involved in creating the information or involved in creating similar information provided estimated times to create. Hourly rates were established for each relevant area of the business to provide an accurate calculation for each activity.

As all hourly rates were determined in 2009 terms the overall value of intangible assets ($1.632 million as per Table 3) was adjusted by CPI (Series SE9A) movements between 2005 and 2009 to reflect costs in 2005 terms ($1.442 million).

The useful life for intangible assets was estimated to be similar to the useful life of underlying physical assets. A weighted average remaining life of 34 years was adopted.

TABLE 3 - Intangible Assets included in RAB

Intangible Asset Item	Description	Basis for Estimated Cost	Cost (2009 Dollars)
Engineering Standards	Information developed and maintained with respect to asset specs, maintenance history etc.	Total of 2,000 hours @ $95/hr.	$0.190m
Pricing/Billing Models	• Contract Suite • UNANA contract for Non AKL gas Distribution • Customer data base • Pricing and valuation methodologies	• 2.5 people full time 3 months – 1,200 hrs; • 300 hrs * 5 people (legal, marketing, 2 commercial and 1 technical – 1,500 hrs; • 2 people full time 2 months – 640 hrs; and • 4,000 hrs across all distribution networks Total of 7,340 hours @ $95/hr.	$0.697m
Contracting Methodologies	Development of RFP, negotiation and selection of contractors resulting in contracting methodologies and practices. Developed by Vector i.e. internally generated.	Total of 2,992 hours @ 89.23/hr plus 477,767 of external costs (assumes half external costs picked up by gas and half by electricity).	$0.745m
Total			**$1.632m**

5. Correction of asset ages

Request from the Commerce Commission

"*In relation to the Correction of Asset Ages – it is unclear in the report what tests Vector has employed to determine the error in the asset ages and how the adjustments were calculated. It is also worth noting that the independent engineer (Wilson Cook & Co Limited) has not reviewed this adjustment as the adjustment relates to depreciation which the independent engineer specifically qualified is a matter outside their ambit and therefore not covered by their opinion. Given this, NCL is of the view that sufficient information should be provided in order to enable a more thorough review and understanding of such correction. Other than this, while it is recognised that certain asset adjustments may be reviewed by a party other than the independent engineer, it is required that the independent engineer (Wilson Cook & Co Limited) has to indicate that such values have been supplied or reviewed by an appropriately qualified party. Details on the review performed as it relates to this proposed adjustment (e.g. name of the reviewer, nature of the review undertaken, etc.) including a copy of such review document to support the proposed adjustment is also recommended to be submitted.*"

Vector response

As noted in **the Report**, Vector improved the accuracy of rolling forward the 2003 asset register adjusted under IM allowances. The roll forward was done at an individual asset basis, considering each asset's correct commissioning date and assigned standard life.

The adjusted roll forward process resulted in different annual depreciation amounts to what was disclosed under the Gas (Information Disclosure) Regulations 1997. The annual differences at an aggregate level are provided in **the Report** in Appendix A. It was not possible to accurately reconcile the differences on an individual disaggregated level due to insufficient information available from the original 2003 NGC valuation. Vector has in previous submissions explained in detail the shortcomings of the 2003 NGC valuation and its unsuitability as a reference point under the IM requirements[8].

Vector engaged PricewaterhouseCoopers (Lynne Taylor, Advisory Director, Energy Team), considered by Vector to be a suitably qualified party under Schedule C, to roll forward the adjusted 2003 asset register to 2009 at a disaggregated asset level. PwC prepared a custom built database for this purpose following the IM rules and requirements.

A review of the roll forward was performed by KPMG in their capacity as auditor under the July 2011 s53ZD notice in order to provide their audit certificate. The review included an examination of the PwC methodologies, extensive IT analyses of the PwC database to verify completeness and accuracy, comparative roll forward analytics and reconciliation with historical disclosures.

[8] Website: www.comcom.govt.nz. Document: /assets/Pan-Industry/Input-Methodologies/Draft-Reasons-Papers/Draft-Reasons-EDBs/AssetValutionSub/Vector-Attachment-Submission-on-EDBs-and-GPBs-Input-Methodologies-Asset-Valuation-Duncan-Ian-Head-Statement-Public-23-August-2010.

6. Tests to determine asset quantity and life

Request from the Commerce Commission

"*NCL notes that while it is required as per 2 (e) (iii) of Schedule C that the independent engineer should include in its signed statement, an explanation on the tests performed to determine the quantity and physical asset life of assets, this was not provided as part of your submission and in our view should be provided for compliance."*

Vector response

In **the Report** Vector notes that in order to address the shortcomings of the 2003 NGC valuation (shortcomings discussed in detail under previous submission[9]), Vector produced a robust internal valuation of the North Island gas distribution network in 2008[10]. The 2008 asset register was used as the basis for identifying adjustments allowed under the 2010 Input Methodologies.

A major step in producing the 2008 valuation was to create an asset register by recording all individual assets, their ages, installation dates, refurbishment history, quantity and any information that would affect the assessment of useful life. The main source of asset register information is Vector's computerised Geographical Information System (GIS) but also includes other systems or programmes (for example Microsoft Excel). The 2008 register was reviewed by PricewaterhouseCoopers (Lynne Taylor, Advisory Director, Energy Team) in June 2009 following general ODV audit practice including sample testing tracing individual assets back to source systems and reasonableness tests to sign off on completeness and accuracy.

A review of the adjusted asset information under the 2010 Input Methodologies was performed by KPMG in their capacity as auditor under the July 2011 s53ZD notice in order to provide their audit certificate. The review included sample testing of individual asset data tracing back to source systems (e.g. GIS) and sample testing post 2003 additions to ensure that these were not already included in the adjusted 2003 asset register.

7. Optimisation and EV testing

Request from the Commerce Commission

"*NCL further notes that adjustments in relation to optimisation and economic value tests have been discussed in your submission. However, as per 2.2.1.2 of the GDB IM ("Commerce Act (Gas Distribution Services Input Methodologies) Determination 2010 dated 22 December 2010"), such adjustments are not part of asset adjustment processes that a GDB may elect to undertake. It is also worth noting that the optimisation and economic value tests have been discussed only for mains pipeline assets, however it is unclear in the report if there were also adjustments in relation to optimisation and economic value tests applied to other asset categories. Consistent with*

[9] Website: www.comcom.govt.nz. Document: /assets/Pan-Industry/Input-Methodologies/Draft-Reasons-Papers/Draft-Reasons-EDBs/AssetValutionSub/Vector-Attachment-Submission-on-EDBs-and-GPBs-Input-Methodologies-Asset-Valuation-Duncan-Ian-Head-Statement-Public-23-August-2010.

[10] Vector Limited "Optimised Deprival Valuation for the Gas North Island Distribution Network As at 30 June 2008", Undisclosed Internal Vector Report

the requirements in Schedule C of the Commission's Information Request that sufficient information should be provided to enable a reader to understand the data, information, calculations and assumptions employed, and in order to assist in understanding where such adjustments were applied, as a suggestion, a table showing the change in quantities, RC, DRC and ODRC for all the asset categories proposed to be adjusted could assist. Apart from this proposed additional information, it is required that the submission be revised to exclude adjustments in relation to optimisation and economic value tests, if any, given that these adjustments are not allowed for in the GDB IM. Such revisions/amendments are recommended for the tables in Section 6, Appendix A and Appendix B of the Vector report and other required submissions to the Commission such as the Independent Engineer's written statement and report, and the excel spread sheet containing the Information Request Schedules."

Vector response

Vector did not include revised optimisation and economic value tests under the "asset adjustment process" as defined in the 2010 Input Methodologies. On the contrary, as per the rules of the Input Methodologies, Vector employed the same optimisation and economic value tests used in 2003 NGC valuation to determine the "modified values" of the adjusted asset register.

As noted in **the Report** the 2010 Input Methodologies section 2.2.1(6), requires adjusted asset values to be based on the value that would have resulted from an application of the Gas (Information Disclosure) Regulations 1997 as at the later of the date the asset was first commissioned or that the fixed assets were most recently revalued. The North Island network assets' most recent valuation was the 2003 NGC valuation[11]. Section 3 of **the Report** describes how the same 2003 NGC optimisation and economic value tests were applied to the corrected 2003 asset register.

As noted in **the Report** (p11) optimisation impacted on mains pipes and district regulating stations. However, economic value tests were performed at a regional level and therefore impacted on all assets in regions requiring an economic value write down (p12).

The impact of optimisation and economic value tests on assets are included in the "modified values" provided in Section 6, Appendix A and Appendix B of **the Report**. As explained optimisation and economic value testing were inherent parts of the valuation process to determine adjusted values compliant with the Input Methodologies. The impact of optimisation and economic value testing should not be separated out in Appendices A and B as it is not a separate adjustment.

In order to allow the reader to better understand the data, information, calculations and assumptions employed, **the Report** (Section 3) provides quantitative information at an aggregate level on the impact of optimisation and economic value tests as applied to the original 2003 NGC asset register and the adjusted 2003 asset register. The main reasons for observed differences are also provided.

[11] ODV 2003 Optimised Deprival Valuation Transmission & Distribution as at 30 June 2003, Disclosed NGC Report

GDB Name: **Vector Limited (Dist)**

Year Ended: **30 June**

SCHEDULE A2: ASSET ADJUSTMENT PROCESS (Public)

Summary of Engineer's Valuation Adjustments (at time asset enters regulatory asset register)

Show only the incremental amount of the valuation adjustment

Asset adjustment process - adjustments	2003 * Submitted ($000)	2004 Submitted ($000)	2005 Submitted ($000)	2006 Submitted ($000)	2007 Submitted ($000)	2008 Submitted ($000)	2009 Submitted ($000)	Total Submitted ($000)	2009 Dollars ($000)** Asset Adjustments ($000)	Resulting Depreciation Adjustment 2004-2009 ($000)	Other *** ($000)	Total Adjustments ($000)	Ref
Correct asset register errors													
Special Crossings	4,318	0	0	0	0	0	0	4,318				4,318	
Critical Spares	132	0	0	0	0	0	0	132				132	
Valves	474	0	0	0	0	0	0	474				474	
Cathodic Protection	2,035	0	0	0	0	0	0	2,035				2,035	
Gate Station/DRS	(398)	0	0	0	0	0	0	(398)				(398)	
Mains Pipe	6,424	0	0	0	0	0	0	6,424				6,424	
Services	(2,287)	0	0	0	0	0	0	(2,287)				(2,287)	
Odorisation	(38)	0	0	0	0	0	0	(38)				(38)	
Intangible Assets	0	0	1,442	0	0	0	0	1,442	(642)			800	
								0				0	
Total value of adjustments by **disclosure year**	10,660	0	1,442	0	0	0	0	12,102	(642)	0	0	11,460	2.2.1(2)(c)

** Includes assets which first entered the regulatory asset register in a disclosure year prior to 2003.*

*** Provide supporting calculations showing how the adjustment values for each year have been converted into 31 March 2009 dollar values.*

**** Provide descriptions and values for each category of item (further explanation can be provided in a separate note if necessary).*

Note: For consistency with previous information provided to the Commerce Commission, Asset Adjustments in column M are shown at their face value i.e. in the dollars of the year in which the asset entered the regulatory asset register. The resulting depreciation adjustment and revaluation adjustment have been shown in cells K13 and K14 respectively of Schedule A1.

Key:

Cells that can be amended

Locked cell