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TABLE DR1. SUMMARY OF KEY LITHOSTRATIGRAPHIC CHARACTERISTICS AND COMPONENTRY OF DEPOSITS
PRODUCED BY LATE HOLOCENE ERUPTIONS AT MOUNT TARANAKI

Layer	Main lithofacies	Componentry (vol%)			
		P	DJ	L	C
<u>Circa 2600 cal yr B.P. Manganui-D Member</u>					
MD2b	Coherent, poorly vesicular or nonvesicular, porphyritic, andesite blocks				
MD3	Clast-supported, four reversely graded beds of scoria and heterolithic lapilli	66	14	10	10
MD2	Clast-supported, reverse to normally graded, scoria, basaltic and lithic lapilli	76	14	2	8
MD1	Clast-supported, reverse to normally graded, scoria, basaltic and lithic lapilli	76	10	8	6
<u>Older than 2600 cal yr B.P. Manganui-C Member*</u>					
MC	Clast-supported, thinly and reversely bedded, scoria, basaltic and lithic lapilli	78	10	2	10
<u>Younger than 3000 cal yr B.P. Manganui-A Member*</u>					
MA3	Matrix-supported, parallel- and cross-stratified, pinching-swelling, lithic lapilli-and-ash	13	67	8	12
MA1-2	Clast-supported, two reversely graded layers of scoria lapilli-and-ash	76	12	8	4
<u>3300 cal yr B.P. Upper Inglewood bed set</u>					
Uig7a	Matrix-supported, massive, pinching, pumice ash				
Uig7	Clast-supported, massive, pumice and andesitic lapilli	67	13	8	12
Uig6	Matrix-supported, parallel- and cross-stratified, pinching-swelling, pumice and lithic ash	57	19	7	17
Uig5	Firm, matrix-supported, massive, pinching-swelling, pumice and lithic lapilli-and-ash	53	32	8	7
Uig4	Matrix-supported, parallel-stratified, pinching, pumice and lithic ash	52	35	6	7
Uig3	Matrix-supported, parallel- and cross-stratified, pinching-swelling, andesitic lapilli-and-ash	20	61	3	16
Uig2	Firm, matrix-supported, reverse to parallel- and cross-stratified, andesitic lapilli-and-ash	5	66	8	21
Uig1	Friable, matrix-supported, reverse to massive, andesitic blocks or blocks-and-ash	2	72	8	18
<u>3500 cal yr B.P. Korito bed set*</u>					
Ko8	Matrix-supported, reverse and massive, pinching, pumice lapilli-and-ash	65	19	5	11
Ko7	Matrix-supported, cross- or massive bedded, pinching-swelling, pumice and lithic lapilli-and-ash	46	23	13	18
Ko6	Matrix-supported, parallel or cross-bedded, pinching-swelling, pumice and lithic lapilli-and-ash	35	21	14	30
Ko5	Firm, matrix-supported, parallel-bedded or massive, pinching, lithic ash	15	26	19	40
Ko4	Matrix-supported, massive, pinching, pumice and heterolithic lapilli-and-ash	45	26	14	15
Ko3a	Matrix-supported, massive, pinching, pumice lapilli-and-ash	55	11	3	31
Ko3	Clast-supported, massive to normally graded, pumice and topmost lithic lapilli	59	17	10	14
Ko2	Matrix-supported, massive, pinching, pumice and lithic lapilli-and-ash	58	14	5	23
Ko1	Matrix-supported, parallel-bedded, pinching, andesitic ash	12	35	8	45
<u>Circa 3800 cal yr B.P. Kapuni-B bed set*</u>					
KB4	Matrix-supported, massive, pinching, pumice and andesitic lapilli-and-ash	56	12	2	30
KB3	Clast-supported, reverse to massive to normally graded, pumice lapilli	73	7	3	17
KB2	Clast-supported, reverse to normally graded, andesitic and lithic lapilli	14	80	1	5
KB1	Clast-supported, reverse to massive, pumice lapilli	72	8	4	16
<u>Circa 3800 cal yr B.P. Kapuni-A bed set*</u>					
KA2	Clast-supported, massive to normally graded, pumice lapilli	75	9	2	14
KA1	Matrix-supported, parallel- and cross-stratified, pinching, andesitic lapilli-and-ash	35	42	8	15
<u>4700–4600 cal yr B.P. Kokowai bed set</u>					
Kw8	Matrix-supported, massive, pinching, pumice and heterolithic lapilli-and-ash	70	12	8	10
Kw7	Clast-supported, reverse, massive to normally graded, pumice lapilli	67	16	7	11
Kw6	Matrix-supported, massive, pinching, pumice lapilli-and-ash	75	10	2	13
Kw5	Matrix-supported, reverse, parallel- or faintly cross-stratified, pinching, lithic ash	6	80	4	10
Kw4	Clast-supported, reverse to massive, pumice and topmost andesitic lapilli	82	9	2	7
Kw3	Matrix-supported, massive, pinching, pumice lapilli-and-ash	80	6	4	10
Kw2	Friable, matrix-supported, reversely graded, andesitic lapilli-and-ash	1	70	5	24
Kw1	Friable, matrix-supported, reverse to massive, andesitic blocks-and-ash	1	70	9	20

Note: All lithostratigraphic data are modified from Torres-Orozco et al. (2017a). P—pumice (or scoria), DJ—dense juvenile andesitic or basaltic clasts, L—combined accessory and accidental lithics, C—free crystals.

*Componentry estimated in this work; otherwise modified from Torres-Orozco et al. (2017a, 2017b).

Note: All lithostratigraphic data are modified from Torres-Orozco et al. (2017a). P—pumice (or scoria), DJ—dense juvenile andesitic or basaltic clasts, L—combined accessory and accidental lithics, C—free crystals.

*Componentry estimated in this work; otherwise modified from Torres-Orozco et al. (2017a, 2017b).

TABLE DR2. SUMMARY DESCRIPTIONS OF THE LITHOFACIES ASSOCIATIONS IDENTIFIED FROM PYROCLASTIC DEPOSITS AT MOUNT TARANAKI

Lithofacies association (Asc.)	Characteristics
<u>Asc1</u>	<p>Lithology: Clast-supported, poorly to moderately well-sorted deposits, dominated by angular to subangular pumice lapilli (60–82 vol%).</p> <p>Boundaries: Lowermost sharp-parallel, rarely gradational. Uppermost gradational, often sharp-irregular.</p> <p>Description: Mostly firm, 35–170-cm-thick, massive lapilli deposits, commonly having thin (<10-cm-thick) basal and top lapilli horizons that comprise faint reversely graded and normally and reversely graded lithofacies, respectively, and are often andesitic clast-rich. Deposits thin laterally and longitudinally in kilometer distance, but preserve massive lapilli lithofacies. Deposits mantle the paleotopography and rarely form lenticular geometries thinning over paleoridges, interpreted from associated under- or overlying channel-fill deposits. Ballistically emplaced pumice bombs and andesitic blocks commonly produce impact sags into underlying deposits. Very common impact-fractured pumice lapilli clasts.</p> <p>Lithofacies: Dispersal axis: L1. Occasional lowermost: L2 or L8 and L5, and topmost: L3, L6, and L8. Lateral and longitudinal variations: L1.</p> <p>Occurrence: Layers Kw4, KB3, Ko3, Uig7. <i>Other associations lithologically or stratigraphically related: Asc5, Asc6, Asc7.</i></p>
<u>Asc2</u>	<p>Lithology: Clast-supported, poorly to moderately sorted deposits, lapilli-grade dominated, angular to subangular pumice (67–75 vol%), or angular to subrounded dense scoria (76–77 vol%) of the Manganui Formation.</p> <p>Boundaries: Lowermost sharp-parallel, commonly gradational. Uppermost gradational, often sharp-irregular.</p> <p>Description: Moderately friable, 25–85-cm-thick, massive or reversely graded lapilli deposits, grading from basal reversely graded lapilli or lapilli-and-ash horizons, and upwards into normally graded lapilli, lapilli-and-ash or ash deposits. Deposits thin laterally and longitudinally in kilometer distance and become dominated by core massive lapilli deposits encapsulated within reverse and normally graded lapilli-and-ash or ash beds. Deposits mantle the paleotopography and often form lenticular geometries thinning over paleoridges. Common impact-fractured pumice clasts and impact sags produced by pumice bombs and andesitic blocks.</p> <p>Lithofacies: Dispersal axis: L1, L7, L2, LA2. Occasional lowermost: L2, LA2, and topmost: L3, LA3, A3, A1. Lateral and longitudinal variations: L1, L2, LA2.</p> <p>Occurrence: Layers Kw7, KA2, KB1, MD1, MD2. <i>Other associations lithologically or stratigraphically related: Asc7.</i></p>
<u>Asc3</u>	<p>Lithology: Clast-supported, poorly to moderately sorted deposits, lapilli-grade dominated, angular to subrounded dense scoria (75–78 vol%) of the Manganui Formation, and associated heterolithic horizons (45 vol%).</p> <p>Boundaries: Lowermost gradational-subparallel, rarely sharp. Uppermost gradational, often sharp-irregular.</p> <p>Description: Very friable, 30–50-cm-thick, strongly bedded deposits, comprising multiple reverse and normally graded and massive lapilli beds, grading from basal, reversely graded, lapilli-and-ash or ash horizons to normally graded lapilli, lapilli-and-ash, or ash deposits. Andesitic and heterolithic clast-rich horizons are common. Deposits thin laterally and longitudinally in kilometer distance and fine into lapilli-and-ash-dominated beds, but preserve strongly stratified lithofacies. More than ±10 km distance, deposits shift toward unsorted massive and reversely graded ash lithofacies. Deposits mantle the paleotopography and very frequently form lenticular geometries produced either by channel-margin deposition or by irregular uppermost erosion.</p> <p>Lithofacies: Dispersal axis: L4, L10, and LA4, dominated by beds of L1, L2, L3, L7 or L8, and LA2 lithofacies. Occasional lowermost: A2, LA2, and LA3, and topmost: L3, L9, LA3, and A1. Lateral and longitudinal variations: LA4 and LA10, dominated by beds of LA2, LA3, L7, L8, and L1 lithofacies. Distal variations: A2 and A1.</p> <p>Occurrence: Layers MA1–2, MC, MD3. <i>Other associations lithologically or stratigraphically related: Asc6.</i></p>
<u>Asc4</u>	<p>Lithology: Clast-supported, poorly to moderately sorted deposits, dominated by angular, juvenile andesitic clast lapilli (~81 vol%).</p> <p>Boundaries: Lowermost gradational-subparallel. Uppermost gradational-irregular.</p> <p>Description: Very friable, 10–25-cm-thick, reversely to massive and topmost normally graded lapilli deposits. These deposits mantle the paleotopography and are interstratified within pumice-rich lithofacies associations.</p> <p>Lithofacies: Dispersal axis: L8, L9, L7.</p> <p>Occurrence: Layer KB2. <i>Other associations lithologically or stratigraphically related: Asc1, Asc2, Asc7.</i></p>
<u>Asc5</u>	<p>Lithology: Very poorly to poorly sorted, matrix-supported, subangular to rounded lapilli, and fine- to coarse-grained ash of approximately evenly proportional pumice (35–57 vol%) and andesitic clasts (26–50 vol%). Common individual pumice, andesitic, and lithic lapilli clasts aligned in the ash.</p> <p>Boundaries: Lowermost sharp-subparallel to low-angular, often undulating. Uppermost gradational-subparallel, often sharp.</p> <p>Description: Very firm, lenticular or pinching-and-swelling in meter distance, 9–45-cm-thick channel-fill massive lapilli-and-ash, grading vertically from lowermost stratified lapilli-and-ash into uppermost, moderately firm, 4–25-cm-thick, parallel thinly bedded and faintly stratified ash. These deposits change laterally and longitudinally into 6–11-cm-thick lapilli-and-ash beds of unsorted massive, faintly stratified, cross-stratified or diversely stratified, i.e., scour-fill or parallel-thinly bedded lithofacies. Deposits often pinch out upslope. May contain charcoal branches and twigs and ash pellets.</p> <p>Lithofacies: Channel-fill (~dispersal axis): LA20–22. Lowermost: LA23, and topmost: A24, LA/A25–28. Lateral and longitudinal variations: LA/A23–29.</p> <p>Occurrence: Layers KA1, Ko4–Ko7, Uig4–Uig5. <i>Other associations lithologically or stratigraphically related: Asc1.</i></p>
<u>Asc6</u>	<p>Lithology: Very poorly to poorly sorted, andesitic or lithic-dominated (43–84 vol%), subangular to subrounded fine to coarse-grained ash. Common andesitic and lithic lapilli clasts matrix-supported in the ash.</p> <p>Boundaries: Lowermost sharp-subparallel to highly angular and undulating, rarely gradational-irregular. Uppermost gradational-subparallel.</p> <p>Description: Moderately to very firm, 5–16-cm-thick, pinching and pinching-and-swelling in meter distance, unsorted massive ash deposits, shifting into deposits of faintly stratified lithofacies and commonly developing cross-stratification and scour-fill bedding laterally and longitudinally. May contain charcoal twigs and ash pellets.</p> <p>Lithofacies: Approx. dispersal axis: A33–37. Lateral and longitudinal variations: A36 and LA34</p> <p>Occurrence: Layers Kw5, Ko1, MA3. <i>Other associations lithologically or stratigraphically related: Asc3, Asc8, Asc9.</i></p>
<u>Asc7</u>	<p>Lithology: Very poorly sorted deposits, dominated by subangular to subrounded pumice lapilli (55–80 vol%) matrix-supported in a fine-grained ash.</p> <p>Boundaries: Lowermost sharp-subparallel to low-angular, occasionally undulating, rarely highly angular. Uppermost gradational-subparallel, often undulating and rarely sharp low-angular.</p> <p>Description: Moderately firm, 8–30-cm-thick, lenticular in meter distance, channel-fill massive or reversely graded lapilli-and-ash deposits, grading vertically into secondary lowermost and uppermost ash deposits of massive and faintly stratified lithofacies or thinly bedded lithofacies, respectively, and passing</p>

laterally into meter-distance pinching, 3.5–14-cm-thick lapilli-and-ash or ash deposits of unsorted massive and faintly stratified lithofacies or subparallel reversely and very thinly bedded lithofacies. May contain charcoal twigs.

Lithofacies: Channel-fill (approx. dispersal axis): LA13–14. Lowermost: A15 and 19, and topmost: A16. Lateral and longitudinal variations: LA or A15, 16, 17, and 19, A24 and 28, and LA25.

Occurrence: Layers Kw3, Kw6, Kw8, KB2a, KB4, Ko2, Ko3a, Ko8. *Other associations lithologically or stratigraphically related:* Asc1, Asc2, Asc4.

Asc8

Lithology: Extremely poorly to very poorly sorted deposits, dominated by subangular to rounded andesitic and lithic lapilli (64–79 vol%) matrix-supported in a fine- to coarse-grained ash.

Boundaries: Lowermost sharp-subparallel to low-angular, often gradational-subparallel and undulating. Uppermost gradational-subparallel, rarely sharp.

Description: Very firm to weakly firm, 25–50-cm-thick, lenticular or pinching-and-swelling in meter distance, channel-fill massive or reversely graded lapilli-and-ash or ash deposits, grading vertically from secondary lowermost lapilli-and-ash-dominated deposits of strongly stratified lithofacies and passing laterally into pinching-and-swelling, 4–13-cm-thick, ash-dominated deposits of unsorted massive and faintly stratified lithofacies or scour-fill, parallel- and dune-bedded lithofacies. Occasional imbrication in channel-fill lithofacies. May contain charcoal twigs and rare ash pellets.

Lithofacies: Channel-fill (approx. dispersal axis): LA20–21, LA or A30–31. Secondary lowermost: LA23 and 25–26, A35 and LA or A37. Lateral and longitudinal variations: LA or A23, 24, and 28, LA or A33, 34, 35, 37, and 38.

Occurrence: Layers Kw2, Uig2, Uig3. *Other associations lithologically or stratigraphically related:* Asc6, Asc9.

Asc9

Lithology: Very poorly sorted blocks or blocks and lapilli-grade, subangular to rounded, andesitic clasts (~80 vol%), matrix-supported in coarse-grained andesitic ash. Fines-depleted basal block horizons commonly observed.

Boundaries: Lowermost sharp-subparallel to low-angular, rarely highly angular. Uppermost sharp-subparallel, rarely gradational-irregular.

Description: Mostly weakly to moderately firm, ~85–500-cm-thick, pinching in meter to kilometer distance, channel-fill massive, reversely or normally graded pyroclastic blocks and block-and-ash beds, often grading from fines-depleted basal block horizons to massive lapilli-and-ash or ash deposits, and passing downstream into finer and thinner, ~20–80-cm-thick, channel-fill lapilli-and-ash or ash deposits or into approximately unconfined massive ash deposits. Deposits can also be very firm in cases in which they normally show imbrication. May contain carbonized logs and charcoal branches and twigs.

Lithofacies: Channel-fill (approx. dispersal axis): B30–31, BA31–32. Secondary lowermost: LA30 and A31. Downstream longitudinal variations: BA33, LA30–32, A31.

Occurrence: Layers Kw1, Uig1. *Other associations lithologically or stratigraphically related:* Asc6, Asc8.

Note: See Table 2 for lithofacies association abbreviations. Sorting categories are from Folk and Ward (1957). Sorting (σ_1) and componentry data are modified and/or completed from Torres-Orozco et al. (2017a, 2017b).

TABLE DR3. SUMMARY INTERPRETATIONS OF THE LITHOFACIES ASSOCIATIONS IDENTIFIED FROM PYROCLASTIC DEPOSITS AT MOUNT TARANAKI

Lithofacies association (Asc.)	Interpretation
Asc1	<ul style="list-style-type: none"> - Pumice-fall deposits: by $\sigma_1 = 0.6\text{--}1.4$, composition, clast angularity, mantle bedding, and extent. - Plinian eruption columns* by massive texture, coarse and impact-fractured pumice clasts. - Fast column waxing, and crosswind plume effects or brief column waning* by basal faint reverse grading, and topmost faint normal grading. - Minor conduit erosion, or eruption of either chilled or gas-depleted magma[†] by dense juvenile clast- or lithic clast-rich horizons. - Column unsteadiness and minor collapse[§] from interstratification with deposits of Asc7.
Asc2	<ul style="list-style-type: none"> - Pumice-fall deposits: by $\sigma_1 = 1.0\text{--}1.9$, composition, clast angularity, mantle bedding, and extent. - Gradual waxing conditions into steady columns* by strong reverse grading and middle massive beds. - Progressive column waning[§] by marked uppermost normal grading. - Plinian or subplinian columns smaller or sustained for shorter intervals* than columns of Asc1: by lateral and longitudinal thinning-and-finning lithofacies. - Column unsteadiness and partial collapse[§] by interstratification with deposits of Asc7.
Asc3	<ul style="list-style-type: none"> - Pumice-fall deposits: by $\sigma_1 = 1.0\text{--}1.3$, composition, clast angularity, mantle bedding, and extent. - Subplinian columns oscillating in height due to fluctuations in intensity[§]: by characteristic strong, multiple grain-size grading. - Eruption of gas-depleted or chilled magma, intense conduit erosion[†] or possible phreatomagmatism* by well-developed dense juvenile clast- and lithic clast-rich horizons.
Asc4	<ul style="list-style-type: none"> - Pumice-fall deposits: by $\sigma_1 = \sim 1.0$, composition, clast angularity, and mantle bedding. - Brief, unsteady Strombolian or Vulcanian columns* by marked reverse to normal and thinly bedded grain-size stratification, and by limited deposit preservation. - Collapsing columns: by lateral interstratification with deposits of Asc7. - Eruption of gas-depleted or chilled magma[†], possible phreatomagmatism*, or likely effusive activity** by dense andesitic clast- or lithic clast-dominated lithology
Asc5	<ul style="list-style-type: none"> - Pyroclastic density current (PDC) deposits: by $\sigma_1 = 1.5\text{--}2.5$, clast angularity, and pinching-and-swelling structures. - Current unsteadiness and nonuniformity^{††} by lateral thickness variations, faint stratification, and low-angle truncations. - Waxing and/or waning flow conditions^{§§} by reverse and/or normal grading - Rapid suspension-sedimentation and mild traction of highly to moderately concentrated “flow-type” PDCs^{§§} by grain size, channel-fill massive and faintly stratified lithofacies, and progression from lowermost faintly stratified lithofacies. - Full tractional deposition from dilute, turbulent, and unconfined “surge-type” (hot) PDCs^{§§} by grain size, progression into uppermost or transition into lateral/longitudinal parallel- and cross-stratification, obstacle scours, often undulating contacts, and occasional charcoal branches and twigs. - Deposition from energetic, highly mobile, laterally directed “blast-type” PDCs^{##} by elliptical lateral and longitudinal large runout extensions (e.g., 10–18 km), pinching-and-swelling shape and minimum topographic deflection interpreted from deposition-landscape relationships.
Asc6	<ul style="list-style-type: none"> - PDC deposits: by $\sigma_1 = 3.2$, clast angularity, and pinching-and-swelling structures. - Rapid suspension-sedimentation and moderate traction of unsteady, nonuniform PDCs^{†† §§} by massive and faintly stratified lithofacies. - Full tractional deposition from fully dilute, turbulent, and unconfined “surge-type” PDCs^{§§} by lateral and longitudinal transitions into stratified lithofacies. - “Ash-cloud” PDCs by dome-collapse and rapid generation and segregation of fine particles***, or by hydrothermal or phreatomagmatic activity* by lithic lithology and fine, angular ash. - Magmatic, “hot” PDCs: by occasional charcoal content.
Asc7	<ul style="list-style-type: none"> - PDC deposits: by $\sigma_1 = 3.1\text{--}3.2$, clast angularity, and lenticular architecture. - Waxing flow conditions^{§§} by reverse grading. - Sedimentation from gravity-driven, unsteady, nonuniform and confined dense underflows^{†† §§} by dominating channel-fill massive lithofacies and small deposit volumes (e.g., $10^{-3}\text{--}10^{-4}$ km³). - Tractional deposition from dilute, turbulent, “ash-cloud” PDCs, or from laterally waning “surge-type” PDCs^{§§} *** by progression into uppermost thin-bedding, in addition to lateral transitions into pinching-and-finning, subparallel-bedded lithofacies. - PDC produced by partial collapse of unsteady eruption columns^{§§} by pumice lithology, channel-confinement, short runout distances (e.g., 2–5 km), and interstratification with deposits of Asc1–Asc4.
Asc8	<ul style="list-style-type: none"> - PDC deposits: by $\sigma_1 = 2.1\text{--}4.1$, clast angularity, and pinching-and-swelling structures. - Waxing flow conditions^{†† §§} by marked reverse grading. - Tractional deposition of low-concentrated basal PDCs^{§§} by strongly stratified lowermost horizons. - Rapid suspension-sedimentation of moderately concentrated, unsteady, nonuniform, relatively confined PDCs^{§§} by grain size, and dominating channel-fill and unsorted massive textures. - Tractional deposition from dilute, turbulent, and unconfined “surge-type” PDCs^{§§} by lateral thinning-and-fining into massive and faintly stratified lithofacies, and later development of scour, parallel- and dune-bedding with undulating contacts. - “Ash-cloud” PDCs by explosive dome-collapse and rapid generation and segregation of fine particles*** by lithic lithology, charcoal content, and interstratification with deposits of Asc9. - Deposition from energetic, mobile, laterally directed “blast-type” PDCs^{##} by elliptical distribution and lateral/longitudinal runout distances (e.g., 5–8 km).
Asc9	<ul style="list-style-type: none"> - PDC deposits: by $\sigma_1 = 3.5\text{--}3.9$, clast angularity, and strong lenticular channel architecture. - Sedimentation from dense, gravity-driven, nonturbulent, confined PDCs, or en-masse deposition of highly concentrated granular underflows at the basal level of density-stratified PDCs^{†† §§} *** by fines-depleted, dominant channel-fill massive or reversely and normally graded lithofacies. - Dispersive pressure due to grain-to-grain collisions^{†† §§} by reverse and reverse to normal grading. - Suspension-sedimentation from moderately-dilute PDCs and/or current waning*** by deposits thinning-and-fining downstream into confined and weakly confined massive lithofacies. - Sedimentation from dense basal avalanches produced by explosive dome-collapse*** by dense andesitic clast or lithic lithology, short downstream runout distances (e.g., 6–7 km), and carried carbonized logs and branches.

Note: Sorting (σ_1), volumes, and pyroclastic density current (PDC) runout distances are modified from Torres-Orozco et al. (2017b).

*cf. Cioni et al. (2000, 2003, 2008).

†cf. Cashman et al. (2000); Cioni et al. (2000); Torres-Orozco et al. (2017a).

§cf. Arce et al. (2003); Brown and Branney (2004); Cioni et al. (2000, 2003, 2008); Bonadonna et al. (2016).

#e.g., Németh and White (2003); Lube et al. (2014).

**cf. Cioni et al. (2000, 2008); Houghton et al. (2004); Shea et al. (2012).

††cf. Branney and Kokelaar (2002); Brown and Branney (2004).

§§cf. Druitt (1998); Brown and Branney (2004); Belousov et al. (2007); Kim et al. (2014).

##cf. Boudon and Lajoie (1989); Belousov et al. (2007); Cronin et al. (2013); Lube et al. (2014).

***cf. Schwarzkopf et al. (2005); Lube et al. (2011); Cronin et al. (2013).

TABLE DR4. GEOGRAPHIC LOCATION OF THE STUDIED SECTIONS

Section	NZTM2000*		WGS84 [†]	
	Northing	Easting	Latitude	Longitude
A	5646089.0 m	1693647.9 m	39° 19' 46.3" S	174° 05' 11.5" E
B	5645802.5 m	1692564.1 m	39° 19' 56.1" S	174° 04' 26.4" E
C	5647245.5 m	1693657.3 m	39° 19' 08.8" S	174° 05' 11.3" E
D	5647730.6 m	1694183.4 m	39° 18' 52.9" S	174° 05' 33.1" E
E	5647992.4 m	1693868.5 m	39° 18' 44.5" S	174° 05' 19.8" E
F	5648669.8 m	1694125.8 m	39° 18' 22.5" S	174° 05' 30.2" E
G	5648147.3 m	1694575.6 m	39° 18' 39.2" S	174° 05' 49.2" E
H	5648217.9 m	1695053.5 m	39° 18' 36.8" S	174° 06' 09.1" E
I	5648699.3 m	1695464.5 m	39° 18' 21.0" S	174° 06' 26.0" E
J	5650296.4 m	1695116.9 m	39° 17' 29.3" S	174° 06' 10.7" E
K	5650170.5 m	1693243.8 m	39° 17' 34.1" S	174° 04' 52.6" E
L	5650609.5 m	1694645.3 m	39° 17' 19.4" S	174° 05' 50.9" E
M	5651214.4 m	1695135.5 m	39° 16' 59.5" S	174° 06' 11.0" E
N	5651331.0 m	1694630.4 m	39° 16' 56.0" S	174° 05' 49.9" E
O	5651200.5 m	1693598.4 m	39° 17' 00.6" S	174° 05' 06.9" E
P	5651436.9 m	1693936.1 m	39° 16' 52.8" S	174° 05' 20.9" E
Q	5651588.9 m	1694088.1 m	39° 16' 47.8" S	174° 05' 27.1" E
R	5651939.7 m	1693892.2 m	39° 16' 36.5" S	174° 05' 18.8" E
S	5652418.9 m	1694358.4 m	39° 16' 20.8" S	174° 05' 38.0" E
T	5653260.8 m	1694513.8 m	39° 15' 53.4" S	174° 05' 44.1" E
U	5651453.8 m	1693243.8 m	39° 16' 52.5" S	174° 04' 52.0" E
V	5651792.2 m	1693007.9 m	39° 16' 41.6" S	174° 04' 41.9" E
W	5653001.8 m	1692441.6 m	39° 16' 02.6" S	174° 04' 17.7" E
X1	5652872.2 m	1691768.1 m	39° 16' 07.1" S	174° 03' 49.7" E
X2	5652937.0 m	1691366.6 m	39° 16' 05.1" S	174° 03' 32.9" E
Y	5652652.1 m	1690952.1 m	39° 16' 14.5" S	174° 03' 15.7" E

*New Zealand Transverse Mercator 2000

[†]World Geodetic System 1984