

30 May 2023



Acquisition of Exploration Tenements in NSW Completed with Initial Tenement Review

- The Department of Regional NSW, Mining, Exploration and Geoscience (MEG) has approved the transfer of titles of two exploration tenement packages (the Projects) from Sandfire Resources Ltd (ASX:SFR) to Alkane. This completes the acquisition agreement announced on 9 March 2023. As per the agreement 2,781,438 Alkane Resources Limited (ASX:ALK) shares have been issued to SFR.
- The “Southern Junee Porphyry Project” (SJPP) is a group of tenements covering 235km² of the southern extension of the Junee-Narromine Volcanic Belt of the Macquarie Arc. The geology comprises of buried intrusive complexes of alkalic affinity in a similar geological setting as at the world class Northparkes copper-gold mine. Historic drill results include:

CBD01	110m grading 0.64g/t Au, 0.01% Cu from 139m;
CBD17	16m grading 1.71g/t Au, 0.04% Cu from 276m;
CBD08	74m grading 0.15% Cu, 0.02g/t Au from 226m; and
CBD09	50m grading 0.15% Cu, 0.04g/t Au from 282m.
- The “Comobella North” Project has been added to Alkane’s Northern Molong Porphyry Project (NMPP) and covers 64km² of the volcanic and intrusive sequence that hosts the Boda and Kaiser Inferred Resources (total ~15Moz AuEq). This strategic acquisition means Alkane now owns tenure covering the entire 15km northwest trending structural corridor hosting the Boda District group of deposits.
- Reconnaissance exploration will commence in 2024 comprising airborne gravity, detailed drone magnetics and air-core drilling. Targets generated will be further tested with detailed geophysics and drilling following ongoing work around the Boda District.

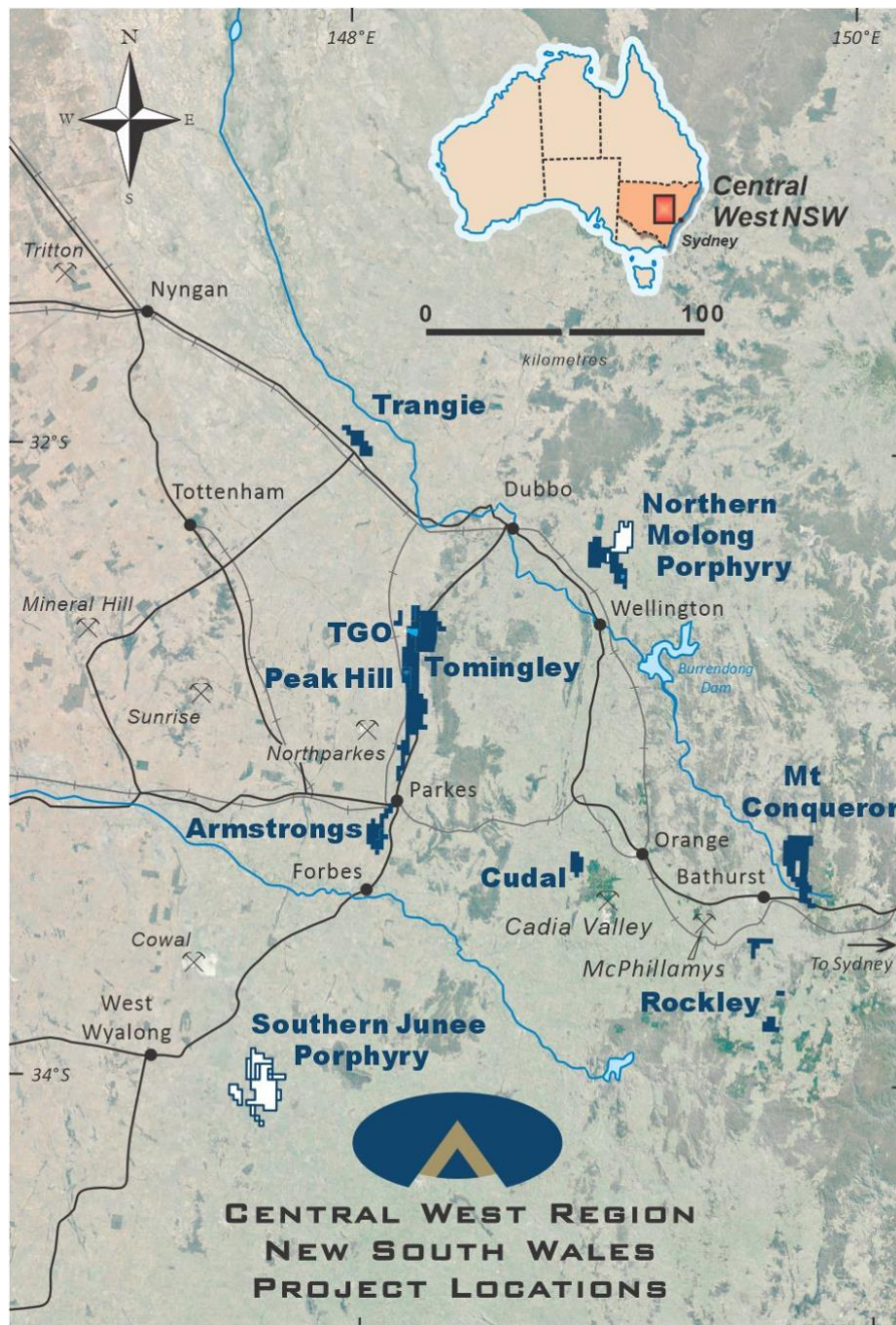
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Alkane Resources Limited (ASX: ALK) is pleased to announce the completion of the purchase two new tenement packages in New South Wales, both highly prospective for world class Au-Cu porphyry deposits.

Alkane Managing Director, Nic Earner, said:

"It is great that the transfer of titles for these two exploration packages has been approved. We will now be drawing on our decades of experience, particularly the extensive geological knowledge accumulated at Boda & Kaiser, to conduct cost effective first stage exploration evaluation of these new prospective areas. We expect that these tenement packages are another opportunity for us to continue to build on our track record of exploration success in New South Wales."





Acquisition Consideration

Alkane Resources Ltd (Alkane, ASX:ALK) has completed the sale with Sandfire Resources Limited (Sandfire, ASX:SFR) to acquire 100% to the title, inclusive of all data and free from encumbrances in four exploration licenses EL5792; EL7982; EL8025; and EL8338 located in the Macquarie Arc in NSW.

As announced on 9 March 2023 the sale was for \$1.9 million worth of Alkane shares at a deemed issue price of the 10-day VWAP up to the date of signing the agreement totaling 2,781,438 Alkane shares. The NSW Minister for Finance and Natural Resources has subsequently approved the transfer of title on 24 May 2023.

The Macquarie Arc is an Ordovician aged island arc volcanic belt that is part of the Eastern Lachlan Fold Belt. The Macquarie Arc is host to world-class gold-copper ore bodies including Cadia (Newcrest), Northparkes (CMOC), Cowal (Evolution) and Alkane's recent Boda-Kaiser discoveries.

Southern Junee Porphyry Project (SJPP)

Alkane Resources Ltd 100%

The Southern Junee Porphyry Project (SJPP) comprises three tenements for a total of 235km² covering the southern extension of the Junee-Narromine Volcanic Belt (J-NVB) in the Riverina region NSW. The J-NVB is host to world class deposits of Cowal (Evolution ~14.3 Moz gold) and Northparkes (CMOC ~4.5Mt copper, 5.5Moz gold).

The SJPP largely comprises of the Ordovician Currumburrama Volcanics, a segmented volcanic belt bound by the major arc parallel structures the Parkes Thrust and the Gilmore Fault Zone. The prospective Currumburrama Volcanics contains alkalic (shoshonitic) volcanics and intrusives of similar chemistry, interpreted age and structural position as the Northparkes intrusive suite. The SJPP includes up to ten intrusive complexes interpreted from the detailed magnetics. Only one of these complexes was previously tested with diamond core or RC drilling, exhibiting extensive gold-copper mineralisation associated with calc-potassic alteration assemblages (biotite-magnetite-kspars-calcite) and overprinting phyllic alteration assemblages (sericite-silica-pyrite).

Almost the entire Project area is covered by a layer of transported sediments of 40 to 80 metres thick. The basement is weathered up to 40 metres resulting in well-developed saprolite clays allowing pervasive geochemical dispersion. The regolith is similar in nature to the regolith at the Tomingley Gold Project that Alkane has been successfully exploring for over 20 years.

The Project has seen limited exploration comprising only 27 RC and diamond drill holes to average depths of 290 metres. This drilling covers 4km² area around one intrusive complex of the interpreted ten complexes within 235km² of buried shoshonitic volcanics. Significant and previously unreported drilling results from historical exploration in the SJPP are presented in Table 2, with highlight intercepts of:

CBD01	110m grading 0.64g/t Au, 0.01% Cu from 139m
incl	6m grading 1.74g/t Au, 0.01% Cu from 141m
also	34m grading 1.14g/t Au, 0.01% Cu from 197m
CBD17	16m grading 1.71g/t Au, 0.04% Cu from 276m
incl	3m grading 6.80g/t Au, 0.04% Cu from 289m



These significant results are from the Imola Prospect that was tested by four diamond core drill holes. The strong gold mineralisation correlates with pyrite precipitating as blebs and veinlets associated with small alkalic dioritic porphyry dykes intruding a volcanoclastic fragmental.



CBD17 – 1m intercept of pyrite mineralised dioritic porphyry grading 16.5g/t Au from 290m

Other significant prospects tested by diamond core drilling includes the Silverstone Prospect and the nearby Catalunya Prospect. These prospects were tested by eight diamond core drill holes intersecting extensive zones of low-grade copper-gold mineralisation (CBD09 – 247m grading 0.06% Cu, 0.03g/t Au from 182m) associated with potassic (biotite) alteration. Significant intercepts include:

CBD08	74m grading 0.15% Cu, 0.02g/t Au from 226m
incl	6m grading 0.39% Cu, 0.03g/t Au from 226m
also	3m grading 0.71% Cu, 0.08g/t Au from 297m
CBD09	50m grading 0.15% Cu, 0.04g/t Au from 282m
incl	9m grading 0.35% Cu, 0.05g/t Au from 323m



CBD08 – Phyllic overprint (top of photo) of potassic alteration including 3m of 0.71% Cu from 297m



Alkane is planning an airborne gravity survey over the SJPP in 2024. Air-core drilling gridded over the ten intrusive complexes is proposed to improve alteration and litho-geochemical mapping. This reconnaissance work will help generate targets for Induced Polarisation (IP) surveying and deep drilling.

Comobella North Project (included in the Northern Molong Porphyry Project – NMPP)

Alkane Resources Ltd 100%

The NMPP, including the Comobella North Project, is in the Central West Region of NSW at the northern end of the Molong Volcanic Belt (MVB) of the Macquarie Arc. The Ordovician volcano-sedimentary sequence of the NMPP is intruded by Late Ordovician to Early Silurian high-level monzodioritic to monzonite composition porphyries and phaneritic stocks. The MVB is dominated by north-south striking faults and thrusts that truncate pervasive northwest trending structures such as the Lachlan Transverse Zone (Cadia and Northparkes) and the Hunter River Transverse Zone, and parallel structures (Boda-Kaiser), that are interpreted to be a significant control on the location of mineralised intrusive bodies. The intersection of these orientated structures is considered fundamental to the emplacement of the Boda-Kaiser Au-Cu porphyry mineralisation.

Comobella North (EL8338) adds 64km² to the NMPP for a total of 177km². Over half of EL8338 is obscured with post mineral sediment cover of Permian and Triassic units of the Gunnedah Basin.

Historical exploration at EL8338 has been limited and intermittent. Significant work includes Delta Gold Exploration Pty Ltd (1995) that mapped the cover sequence determining a range of negligible to up to 50m thick. Newcrest Mining Ltd (1997) sampled outcrop at Gollan North that assayed 4.01% copper that remains untested.

Millennium Minerals Operations Pty Ltd (Millennium) in 1999 conducted a 9 line-km MIMDAS survey generating targets at the Yarindury prospect. These targets were drill tested by 3 RC drill holes for 558m intersecting anomalous gold-copper, including 2m grading 0.93g/t gold, 0.02% copper from 156 metres with drill hole YAR2P.

Mount Isa Mines Ltd (Mt Isa) in 2000 completed detailed airborne magnetics and radiometrics. This was followed up with a 3.4 line-km MIMDAS survey that generated two significant high chargeability anomalies. The weaker IP anomaly and two magnetic anomalies were tested by one RC and two diamond core drill holes for a total of 861 metres in 2001. The stronger high chargeability anomaly with coincident multipoint geochemical anomaly from RAB drilling remains untested.

From 2009 to 2014 Gold Fields Ltd drilled 46 shallow (average depth of less than 100m) RC drill holes for 4,955 metres testing various prospects before relinquishing the project. In 2014, Sandfire Resources Ltd (Sandfire) pegged the project as EL8338 and no significant exploration was completed. Significant historical results previously not reported are appended in Table 3.

Exploration completed since the 2019 discovery of the Boda District (Boda and Kaiser) comprising of Inferred Resources of 7.3 Moz gold and 1.4 Mt copper (ASX Announcement 27 February 2023) involves only one air-core drill hole by Sandfire. Alkane plans to fly a detailed airborne gravity survey over the entire NMPP tenement package to delineate intrusive centres and significant structure within the fertile shoshonitic volcanics. Subsequent targeting will include Induced Polarisation (IP) surveying, high detail drone magnetic surveys and deep drilling.



Table 1 – Historical Company Exploration Reports from NSW Geological Survey			
Company	Exploration Licence	Years	Work Conducted
Aurion Gold Ltd	EL5792	2002	Airborne magnetic and radiometric survey 6x Diamond drill holes (CBD01 – CBD06)
Goldminco Corporation Ltd	EL5972	2003 - 2010	3x Diamond drill holes (CBD07 – CBD09)
Sandfire Resources Ltd	EL5942	2012 - 2022	Inversions of magnetic data 8x Diamond drill holes (CBD10 – CB17)
Delta Gold Exploration Ltd	EL4843	1995 - 1997	Base of cover mapping
Newcrest Mining Ltd	EL4827	1997	Rock chip sampling
Millennium Minerals Operations Pty Ltd	EL5318	1997 - 1999	MIMDAS 9km line survey 3x RC drill holes (YAR2P, YAR4P – 5P)
Mount Isa Mines Ltd	EL5758	2000 - 2002	MIMDAS 3.4km line survey 2x Diamond drill holes (COM01D – COM02D) 1x RC drill hole (COM03)
Gold Fields Ltd	EL6328 + EL6662	2009 - 2014	46x RC drill holes (HTRC01 – 42, WTRC01 – 3, WTRCD28)
Sandfire Resources Ltd	EL8338	2014 - 2022	1x Air-core drill hole

Table 2 – Historic Significant Drilling Results – Southern Junee Porphyry (>0.2g/t Au and/or >0.1% Cu)													
Hole ID	Easting (MGA)	Northing (MGA)	RL	Type	Dip	Azi	Total Depth	Interval From (m)	Interval To (m)	Intercept (m)	Au (g/t)	Cu (%)	Company
CBD01	561914	6232394	240	DD	-90	-	252.5	131	135	4	0.51	0.01	Aurion Gold
and								139	249	110	0.64	0.01	
incl								141	147	6	1.74	0.01	
also								197	231	34	1.14	0.01	
CBD02	560913	6232654	240	DD	-90	-	201.5	96	128	32	0.02	0.12	Aurion Gold
and								140	142	2	0.37	0.20	
CBD04	561784	6232384	240	DD	-61	090	372	174	180	6	0.42	0.02	Aurion Gold
and								190	192	2	0.65	-	
and								226	238	12	0.35	0.01	
and								262	272	10	0.68	0.02	
incl								262	264	2	1.65	0.06	
and								276	278	2	0.34	0.06	
and								286	290	4	0.32	0.01	
CBD05	562184	6232384	240	DD	-62	269	394.4	96	100	4	0.24	-	Aurion Gold
and								108	112	4	0.40	0.01	
and								326	328	2	0.05	0.10	
CBD06	562044	6232184	240	DD	-61	270	356.7	226	228	2	0.71	-	Aurion Gold
and								256	258	2	0.88	0.02	
CBD07	561014	6233184	240	DD	-60	102	1014.6	112	114	2	1.28	0.02	Goldminco
and								144	154	10	-	0.13	
and								185	187	2	0.09	0.30	
and								190	192	2	0.05	0.14	
and								316	321	5	0.07	0.18	
and								410	416	6	0.19	0.10	



Table 2 – Historic Significant Drilling Results – Southern Junee Porphyry (>0.2g/t Au and/or >0.1% Cu)

Hole ID	Easting (MGA)	Northing (MGA)	RL	Type	Dip	Azi	Total Depth	Interval From (m)	Interval To (m)	Intercept (m)	Au (g/t)	Cu (%)	Company
and								437	438	1	0.43	0.11	
and								440	444	4	0.10	0.10	
and								492	495	3	0.17	0.13	
and								507	508	1	0.36	0.20	
and								657	661	4	0.08	0.12	
and								826	844	18	0.07	0.11	
and								886	890	4	0.02	0.10	
CBD08	560614	6232584	240	DD	-60	102	399.1	226	300	74	0.02	0.15	Goldminco
incl								226	232	6	0.03	0.39	
also								297	300	3	0.08	0.71	
CBD09	561413	6233184	240	DD	-65	100	435.8	108	110	2	1.07	0.01	Goldminco
and								184	185	1	0.22	0.20	
and								188	190	2	0.24	0.10	
and								210	212	2	0.18	0.15	
and								220	223	3	0.08	0.14	
and								251	252	1	0.20	0.28	
and								259	260	1	0.17	0.15	
and								282	332	50	0.04	0.15	
incl								323	332	9	0.05	0.35	
and								353	375	22	0.03	0.10	
and								395	397	2	0.04	0.19	
and								427	429	2	0.49	0.13	
CBD10	560848	6233569	240	DD	-60	90	399.2	175	185	10	0.06	0.11	Sandfire
and								230	234	4	0.04	0.10	
and								244	247	3	0.06	0.13	
CBD11	560824	6233684	240	DD	-60	90	422.2	240	254	14	0.21	0.10	Sandfire
CBD14	560954	6232385	229	DD	-65	88	369.7	86	120	34	-	0.12	Sandfire
and								160	206	46	0.06	0.10	
CBD15	560901	6233786	228	DD	-65	89	336.6	171	187	16	0.30	0.14	Sandfire
and								303	305	2	0.30	0.10	
CBD16	561037	6231784	229	DD	-55	90	351.5	89	97	8	0.48	0.02	Sandfire
and								256	258	2	0.52	0.02	
and								341	343	2	0.21	0.14	
CBD17	561037	6231784	229	DD	-55	90	351.5	211	223	12	0.49	0.01	Sandfire
incl								217	219	2	1.78	0.01	
and								258	264	6	0.20	0.04	
and								276	292	16	1.71	0.04	
incl								289	292	3	6.80	0.10	
and								310	311	1	0.50	0.14	
and								339	341	2	1.30	-	
and								350	354	4	0.53	-	

All significant historical drill holes presented in Table 2 are previously unreported and prepared from technical reports submitted to the Geological Survey of NSW by the relevant exploration company.

Aurion Gold Ltd. completed 6 diamond core drill holes (CBD01 – 06) in 2002.

Goldminco Corporation Ltd. completed 3 diamond core drill holes (CBD07 – 09) from 2003 – 2009.

Sandfire Resources Ltd. completed 8 diamond core drill holes (CBD10 – 17) in 2013.



Table 3 – Historic Significant Drilling Results – Comobella North (>0.2g/t Au and/or >0.1% Cu)

Hole ID	Easting (MGA)	Northing (MGA)	RL	Type	Dip	Azi	Total Depth	Interval From (m)	Interval To (m)	Intercept (m)	Au (g/t)	Cu (%)	Company
YAR2P	689559	6431331	362	RC	-90	-	184	156	158	2	0.93	0.02	Millennium
COM01D	686214	6421213	409	DD	-90	-	371.5	280	281	1	0.33	0.01	Mt Isa
HTRC11	686563	6420932	423	RC	-90	-	48	11	15	4	0.45	0.02	Gold Fields
HTRC12	686933	6421180	426	RC	-90	-	49	42	44	2	0.61	0.05	Gold Fields
HTRC23	692242	6426491	377	RC	-90	-	81	60	62	2	0.91	0.01	Gold Fields
HTRC37	689637	6426334	411	RC	-90	-	94	34	46	12	0.19	0.08	Gold Fields
and								84	86	2	0.26	0.03	
HTRC41	689261	6426831	392	RC	-90	-	159	112	114	2	0.20	0.05	Gold Fields
and								130	138	8	0.23	0.06	
WTRC2	688473	6425025	418	RC	-90	-	228	70	72	2	0.32	0.01	Gold Fields
WTRCD28	683568	6417276	388	RC	-60	57	400	304	308	4	0.01	0.19	Gold Fields

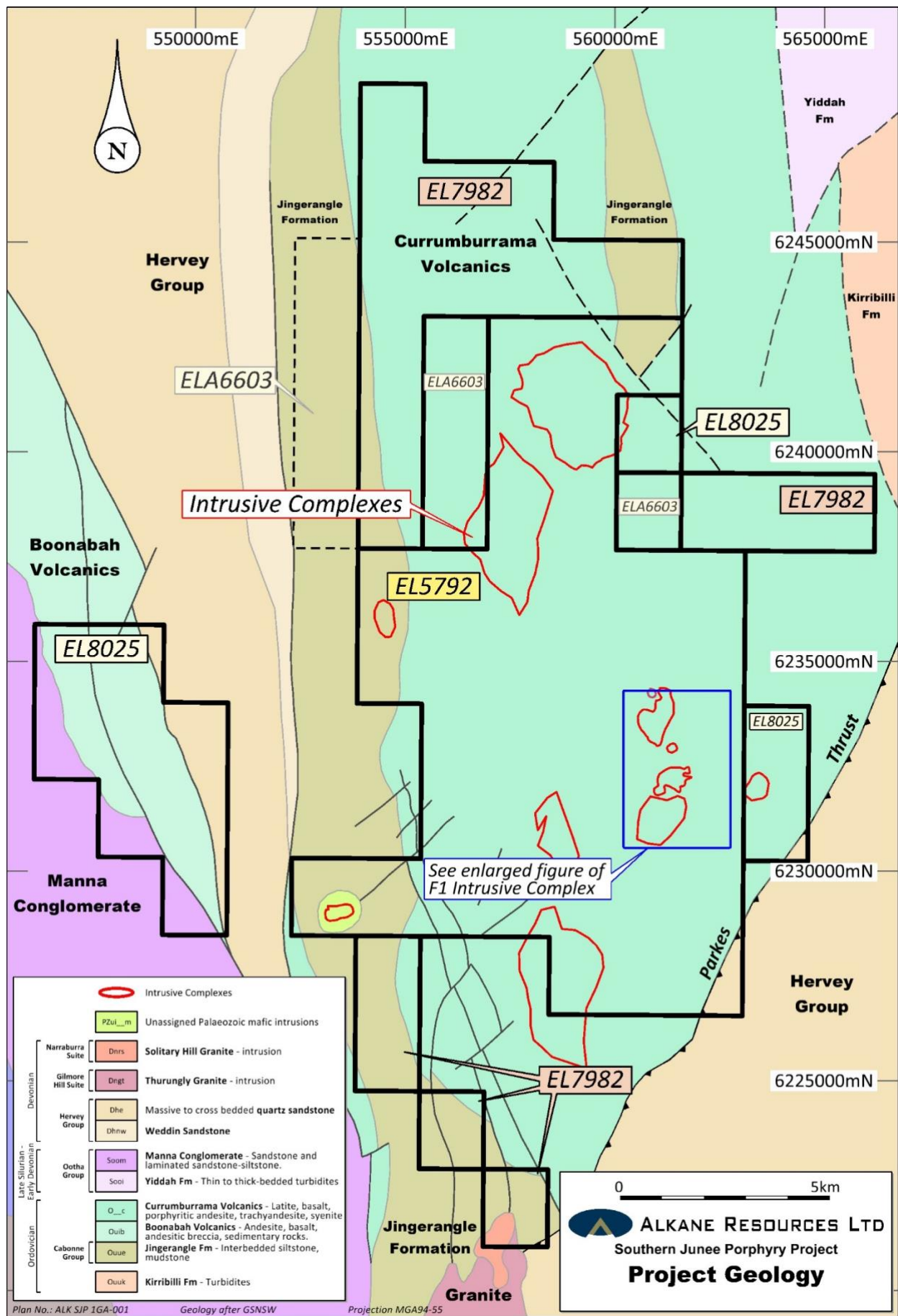
All significant historical drill holes presented in Table 3 are previously unreported and prepared from technical reports submitted to the Geological Survey of NSW by the relevant exploration company.

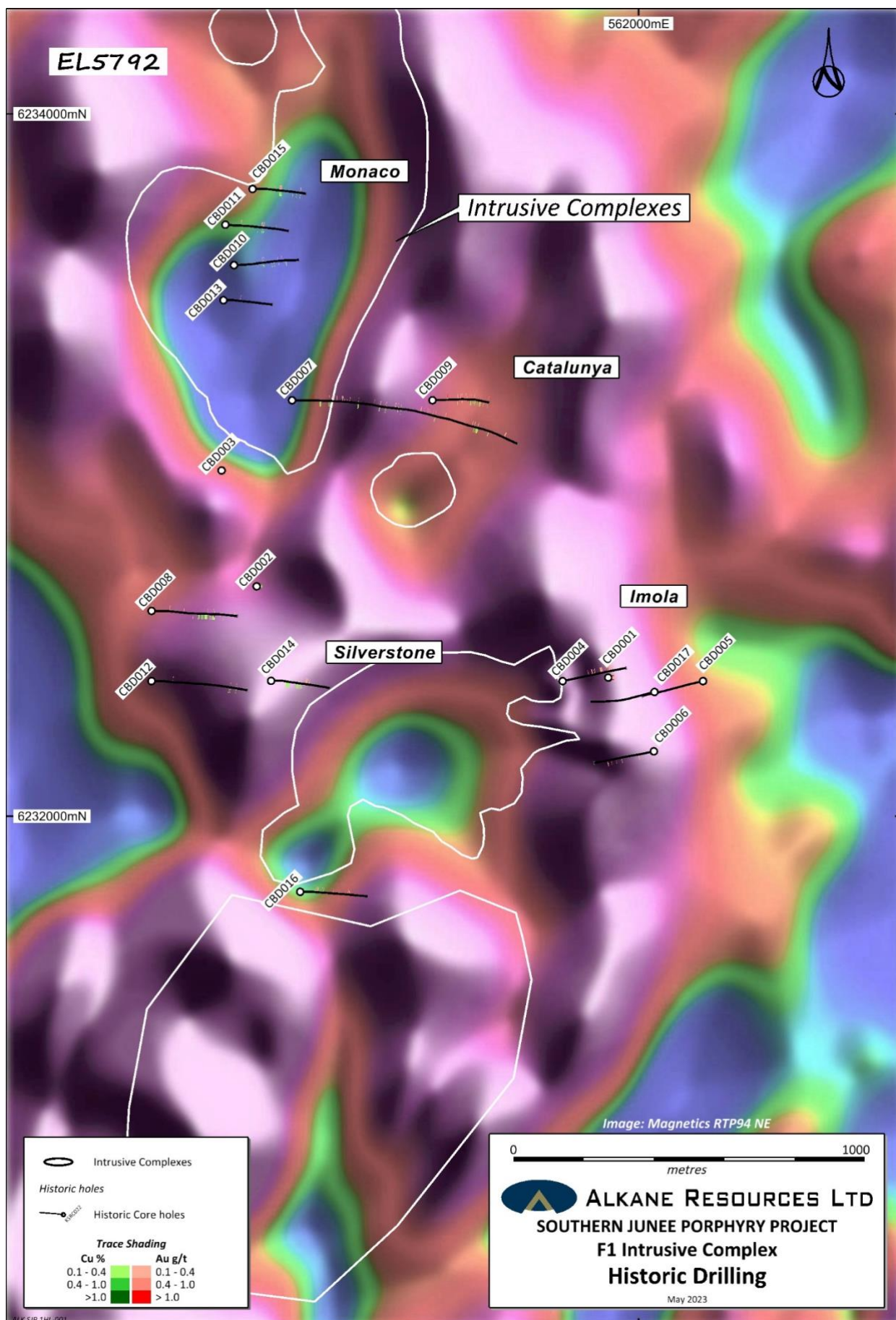
Millennium Minerals Pty Ltd. completed 3 RC drill holes (YAR2P, YAR4P – 5P) in 2000.

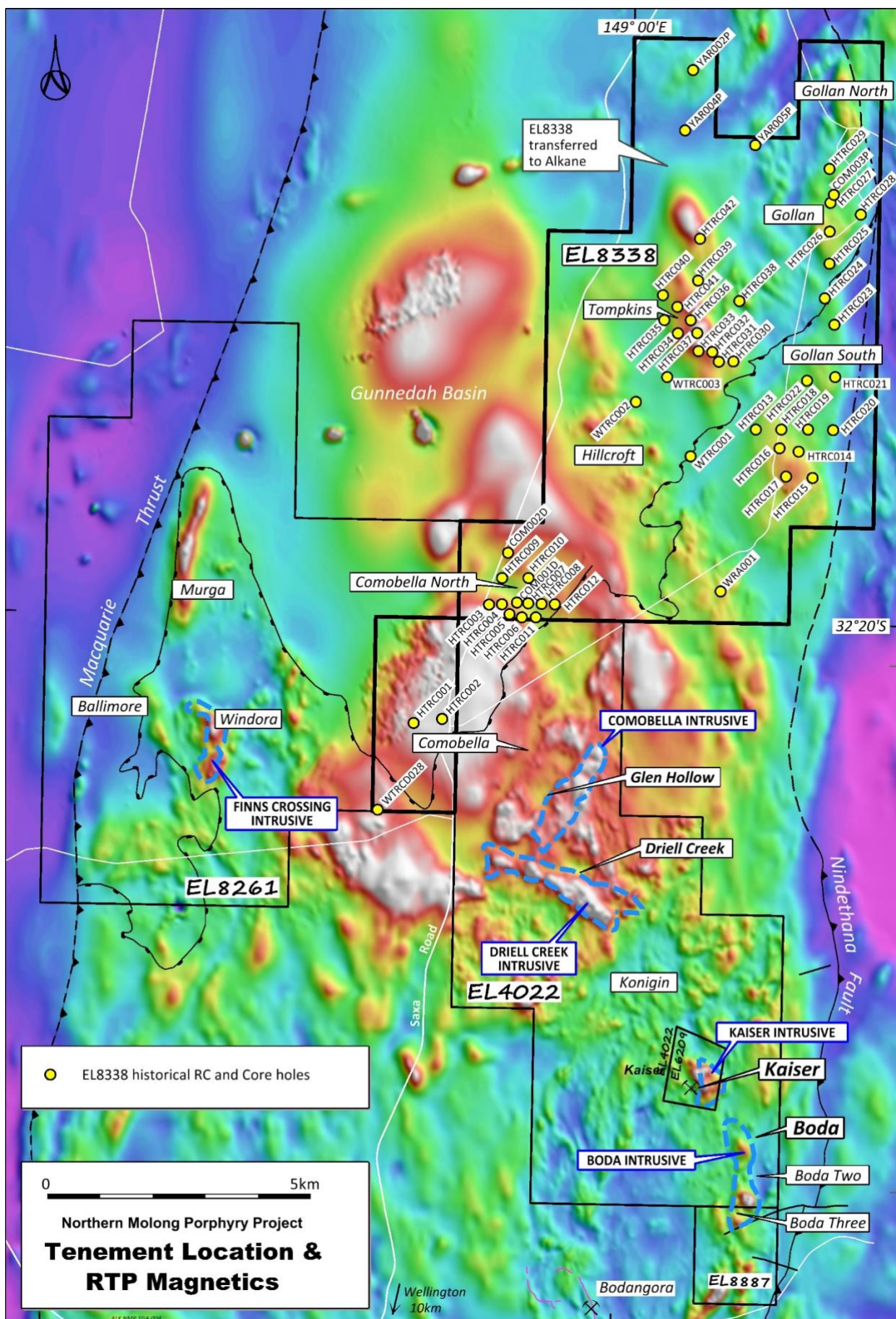
Mount Isa Mines Ltd. completed 2 diamond core drill holes (COM01D – COM02D) and 1 RC drill hole (COM03) in 2001.

Gold Fields Ltd. completed 46 RC drill holes (HTRC01 – 42, WTRC01 – 3, WTRCD28) from 2009 – 2014.

The information in this release that relates to previously unreported exploration results and exploration targets is extracted from the companies noted in the text and Table 1 above. Alkane confirms that it is not aware of any new information or data that materially affects the information included in the original reports and that the form and context in which the Competent Person's findings are presented have not been materially altered.









Competent Person

Unless otherwise advised above, the information in this report that relates to exploration results and mineral resources being reported for the first time is based on information compiled by Mr David Meates MAIG, (Alkane Exploration Manager NSW) who has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Meates has provided his prior written consent to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The information in this release that relates to previously unreported exploration results and exploration targets is extracted from the companies noted in the text and Table 1 of the announcement above. Alkane confirms that it is not aware of any new information or data that materially affects the information included in the original reports and that the form and context in which the Competent Person's findings are presented have not been materially altered.

Disclaimer

This report contains certain forward looking statements and forecasts, including possible or assumed reserves and resources, production levels and rates, costs, prices, future performance or potential growth of Alkane Resources Ltd, industry growth or other trend projections. Such statements are not a guarantee of future performance and involve unknown risks and uncertainties, as well as other factors which are beyond the control of Alkane Resources Ltd. Actual results and developments may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors. Nothing in this report should be construed as either an offer to sell or a solicitation of an offer to buy or sell securities.

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This document has been authorised for release to the market by Nic Earner, Managing Director.

ABOUT ALKANE - www.alkane.com.au - ASX: ALK

Alkane Resources is poised to become Australia's next multi-mine gold producer.

The Company's current gold production is from the Tomingley Gold Operations in Central West New South Wales, where it has been operating since 2014 and is currently expediting a development pathway to extend the mine's life beyond 2030.

Alkane has an enviable exploration track record and controls several highly prospective gold and copper tenements. Its most advanced exploration projects are in the tenement area between Tomingley and Peak Hill, which has the potential to provide additional ore for Tomingley's operations.

Alkane's exploration success includes the landmark porphyry gold-copper mineralisation discovery at Boda in 2019. With a major drill program ongoing at Boda, Alkane is confident of further consolidating Central West New South Wales' reputation as a significant gold production region.

Alkane's gold interests extend throughout Australia, with strategic investments in other gold exploration and aspiring mining companies, including ~9.7% of Calidus Resources (ASX)

