42A01NE0127 78 TECK

DIAMOND DRILLING

REPORT NO: # 78

TOWNSHIP: TECK TOWNSHIP

WORK PERFORMED FOR: LAC MINERALS LTD.

RECORDED HOLDER: SAME AS ABOVE [x]

: OTHER [ ]

CLAIM NO.	HOLE NO.	FOOTAGE	DATE	NOTE
1049049	S-64	335'	SEPT/90	(1) (2)
	S-65	400'	SEPT/90	(1) (2)

NOTES:

(1) W9008) FILED JANUARY 30TH, 1991

(2) W9100116, filed April/91

Conglomerate

3000 NRL

Sand - Boulder Till

o.b. Trench

Alder, Birch

Cong.

Sand. Boulder Till

Alder. Balsam.

-45

-45

Hydro

1049049

1429

Intrusive Contact

M. Syenite

Tuff

Tuff

Cong

Cong

Tuff

Tuff

Cong

Tuff

Tuff

Tuff

Tuff

Porphyry

Tuff

500'

2000 NRL

Baseline 23+00 North

+150

Open, Flat
Spruce, Poplar

Porphyry

Foliated Porphyry

11500E

o.b. Trench

FLAT
Pine, Poplar, Birch

Sharp contact

1 < 1½ Pyr

M. Syenite

IP89-2

Mafic Syenite

Mafic Syenite

Poplar

Boulder Till

Mafic Syenite

Mafic Syenite

Tuff

Tuff

Tuff

Tuff

Tuff

Porph.

Porph.

M. Syenite

M. Syenite

M.S

M.S

M.S

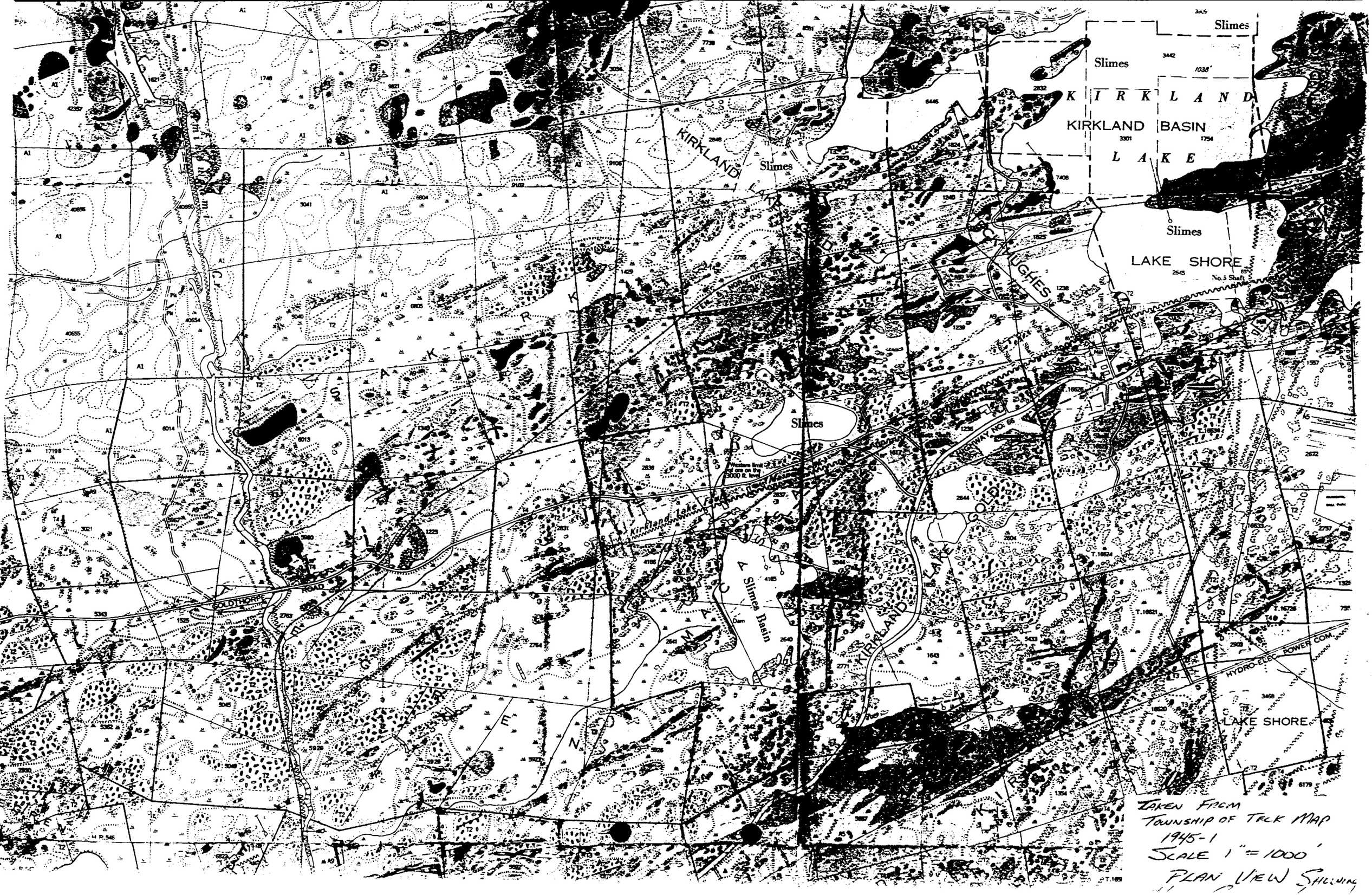
500'

17500 N

12500E

#2 POST

LAC MINERALS LTD
MACASSA DIVISION
100 SCALE SURFACE PLAN



TAKEN FROM
TOWNSHIP OF TECK MAP
1945-1
SCALE 1" = 1000'
PLAN VIEW SHOWING

LAC MINERALS LTD./MACASSA DIVISION

DIAMOND DRILL LOG

Hole No. S-64

Section 19+40 EAST
Ref. Line 2270 NRL
Elevation 1095.5 ELEV
Azimuth 328° 15'
Location SEE PLAN 100 Sc
Northing 17555 N
Easting 12270 E

Depth 335'
Dip -45° N
Core Size BQ
Purpose ABANDONMENT WORK

Remarks Abandoned Oct 23/90
Signature

Factor

Dip Test @

20 sc E		
20 sc G		
100 sc P		
20 sc X		
20 sc L		
100 sc L		

Footage

From	To	Description	CORE From	TO	Total	Sample No.	Ozs.
0	12	Casing					
12	35.6'	Basic dyke - dull greenish grey colored rock with a fine to locally medium grained texture - some scattered dull greyish to reddish brown colored fabric lines. @ 19.3' a 3/4 - 1 1/2" black grey colored serpentinite - carbonate filled FRACTURE/SLIP Trending @ 55° c/c @ 86° TCA. - a tight unmineralized but very conspicuous feature here. - remains good core dull greenish grey colored rock thru 26' @ 25' a SERPENTINITE CARB CHL FRACTURE/SLIP @ 65° TCA. @ 26.8' a TIGHT CARB CHL FRACTURE/SLIP @ 35° TCA - a parting 1/4" dull white carbonate vein between 27' - 31' basaltic rock thru fine to coarse grained phenocrysts of basalt. @ 29.6' a 1/8" CHL SLIP @ 63° TCA. from 31' thru to end of unit basaltic remains dull greenish grey in color with a fg. texture & increasing frequency of remains 1/8" reddish brown colored fabric lines.					
35.6		TUFF - bedding contact incompetent - appears to be on a very tight chlorite fracture @ 35° TCA - unit starts off as dark grey but by 43' becomes more brownish grey in color - remains generally fg. sandy to silty textured. - a few short localized small fragmented sections with only small 1/8" widely scattered oxides stains. - good core thru 50.4' @ 49.6' a 0.3' section of weakly brecciated - reddish alt tuff with <1% fine localized pyrite mineralization - alt band trends @ 75° TCA. - chlorite smeared. - thru 56' tuff remains dark grey in color with generally a fine silty texture - locally choppy core	49.6	50.3	0.7	53201	

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LAC MINERALS LTD./MACASSA DIV.
DIAMOND DRILL LOG

Hole No. S-64

Footage From	Footage To	Description	From	To	Total	Sample No.	Ozs
		between 56' - 57.3' an abruptly more coarse sandy textured phase with small 1/16" - 1/8" reddish brownish leucite? grains.					
		@ 58.5' bedding is @ 48° TCA.					
		from 57.3' to 63.9' dark grey colored fine sandy to silty textured massive tuff					
		- beginning @ 63.9' tuff abruptly become more sandy to small fragmental textured					
		- by 67.5' tuff has numerous 1/4 - 1" mostly angular, dull brown to grayish colored clasts					
		- fragmental section extends to 71'					
		- from 71' thru 89.3' tuff is grey to brownish grey in color & texture varies from fine ash to bedded about sandy to small 1/16" fragmental section. - good sericite intervals with no significant structures.					
		from 89.3' thru 100' dark grey colored tuff with - variable texture					
		from 100 to 102.2' variable textured tuff - fine ash to coarse sandy section with small 1/16 - 1/8" reddish brown colored leucite? crystals					
		@ 102.2' tuff is abruptly more choppy in nature & unit appears HIGHLY SHEARED @ 67° TCA.					
		- shearing extends thru 103.4' and @ 102.3' a parallel TIGHT MYLONITIC/CRUSHED FAULT @ 67° TCA - a 1 1/2" section of fg. sericitized tuff with only a part of actual fault plane evident - Tight but competent structure.					
		from 102.3 thru 103.4' core average 1-2" and some can only exhibit rubbly - no sulphides noted & core not oxidized.					
		- thru 105.6' dark grey colored fine silty to sandy textured tuff - choppy coring.					
105.6'	106.7'	Dyke Rock?- inconspicuous natural looking contact - rolling @ 50 -70° TCA.					
		- unit is still f.g. but with long 1/2 - 3/4" lightly chloritized clasts on less likely porphyritic Trending @ 65° TCA.					
		- good coring massive conspicuous unit. - fine 1/16" black limonite flakes in broken ends of core. ∴ def. dyke rock.					
106.7		Tuff - basal contact is on a CHL SLIP @ 57° TCA - a 1/16 - 1/8" tight chl seam has width 1/8 - 1/4" around specks of dull graphite sulphide - chl. coated.	106.5	107.2'	0.7	53202	

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LAC MINERALS LTD./MACASSA DIV.
DIAMOND DRILL LOG

Hole No. S-64

Footage From	Footage To	Description	From	To	Total	Sample No.	Ozs.
		from 108.5' thru 128.1' generally grey colored, fairly massive good coring tuff with a fine sandy to silty texture - a few short broken 2-8" small fragmental sections with clasts up to ½" across.					
		@ 125.9' a few large ¼" anhedral grains of pyrite - does not look like an ore feature.					
		from 128.1' thru 147.8' grey to dark grey colored mostly fine sandy to silty textured tuff with a few locally scattered ½ - 1½" angular clasts					
		- @ 140' bedding is @ 64° TCA.					
		- thru 147.8 no significant structures evident.					
		from 147.8' thru 167.3' grayish to locally brownish colored, locally choppy coring tuff - texture is quite variable with some 4-7' sections appearing almost porphyritic textured ie. small dull white spots <¼" across with subhedral phenocrysts - carbonate that reacts well with HCL.					
		from 167.3' thru 186.5' grayish to locally brownish grey colored tuff with a sparsely veined appearance - varies from fine silt thru to short sections of small ⅛ - ¼" angular fragmental clasts.					
		@ 176.6' a 0.8' section of irregular dull reddish-orange / white carb filled fracturing - no single strong planar feature but indicative of a significant structure here.					
		- @ 180.2' a STRONG CHL - CARB SLIP @ 62° TCA - a ½" dark brownish grey band here - Tight but conspicuous.					
		@ 185' bedding is @ 67° TCA.					
		from 186.5' thru 205.9' brownish grey to brownish colored tuff with a well bedded texture thru - out most of this interval. - fine silty to coarse sandy to locally small ⅛" fragmental sections.					
		- locally choppy coring but good coring otherwise					
		- beyond 205' conspicuous small pinpoint grains begin to appear in the sandy sections. - therefore arbitrary tentative contact of tuff is considered to be @ 205'.					
205'	212.2'	Argillite? - arbitrarily selected contact - small pinpoint grains in sandy textured unit are more conspicuous now. - unit is grey in color with a sandy texture - a few short bedded small pebble sections near 207' - good coring unit thru - out.					
212.2'		Intrusive Rock? - sharp natural bedding contact @ 47° TCA - slightly chilled for ½" on dike side					

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LAC MINERALS LTD./MACASSA DIV.
DIAMOND DRILL LOG

Hole No. S-64

Footage From	Footage To	Description	From	To	Total	Sample No.	Ozs.
		unit is dull grey in color with a conglomerate mottled appearance consisting of $\frac{1}{8}$ - $\frac{1}{4}$" darker grey to grey colored grains (phenocrysts?) with weakly defined crystal outlines. - definitely an intrusive unit here.					
		214.5 - 215.5' - slightly lighter grey colored dike rock with trace of sulph min. - Abs recovered.	214.5	215.5	1.0	53203	
		215.5 - 216.2' - STRONG RUSTY FAULT ZONE - a 0.4' section of unit from colored crushed dike rock Terminating on a VUGGY MOLY CHL FAULT @ 52° TCA - a 1" vuggy section next to fault plane with a 2-3" preceding section of unit crushed core containing ~5-8% blebby to impregnated grey to black grey quartz mineralization - looks almost like one type of qtz - fault plane has a black grey moly coating on part of surface on core end. - section is min with 1-2% fine and one larger decomposing pyrite min. Probably what other theft was past down on.	215.5	216.2	0.7	4	
		216.2 - 217.3' - 1-2% small disclosed pyrite mostly in trailing section of dike rock. - This section exhibits localized bleaching.	216.2	217.3	1.1	5	
216.6	221.0'	Tuff - strong natural leading contact @ 78° TCA - minor fine grained specks core. in trailing 1" section of dike rock. - Tuff unit is known to grey in color with locally well bedded sections - bedding is @ 57° TCA - good coring unit					
221	224.7'	Brittle Lamprophyre Dike - leading contact is a chlorite fracture @ 56° TCA - unit is massive dark grained grey in color with a med colored grained texture & widely scattered black $\frac{1}{8}$ - $\frac{1}{4}$" biotite flakes throughout the unit - good coring. - last $\frac{1}{2}$" of unit appears mylonitized					
224.7		Tuff - Tight chl fracture on leading contact @ 55° TCA. - unit is grey in color with some bleached sections - from 245' good coring of massive to locally choppy tuff - Texture is fine salt to almost ash-like in section. - between 247 - 250.3' tuff is INTENSELY FRACTURED with $\frac{1}{8}$ - $\frac{3}{8}$" fracture fillings of reddish orange qtz - carb - @ 247.6' a 0.5' section of irregular massive dark and white qtz impregnated by dark grained					

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LAC MINERALS LTD./MACASSA DIV.
DIAMOND DRILL LOG

Hole No. S-64

Footage From	Footage To	Description	From	To	Total	Sample No.	Ozs.
		dk chlorite & reddish orange feldspar – calcite – overall << 1% fine locally sulph min but entire interval is dk enough anyway.	247	250.3	3.3	53206	
		from 250.3' thru 264.2' lighter greyish / brownish colored, locally strongly bleached section – texture varies from fine silt thru coarse sandy extensive sections.					
		from 264.2 thru 269' a coarse sandy to widely scattered small pebbly section with some larger green grains – definitely greywacke here – probably interbedded – tuff/wacke from 250.3' onwards.					
250.3		Tuff – Greywacke interbeds – difficult to determine exact contacts here – appears to interfinger over entire interval thru 269' with a more conglomeratic section between 265 – 269'					
		– from 269' thru 283.4' a light brownish / greyish colored piles of tuff – wacke with several streaks of very light brownish grey colored beds & clasts thru-out unit. – invariably sandy textured tuff – wacke.					
		– beginning @ 284' unit gradually becomes increasingly greenish alt in color.					
		287.7 – 289.9' – moderately to intensely greenish alt weakly crushed tuff – wacke – trace of sulph.	287.7	289.9	2.2	53207	
		289.9 – 292.6' – STRONG SHEARED/ALT CRUSHED ZONE @ 62° TCA. – an intensely crushed and laminated section of tuff – wacke with strong greenish staining in the core					
		– from 291.2' thru 292.6' section is mix with 20-30% dull greenish to white staining qtz interlaminated with greenish chlorite & green staining alt wallrock – this section is mix with ~1% fine sulph in the qtz & surrounding chlorite – interval is sampled in 2 sections – 1st section is heavily mix with only traces of sulph noted.	289.9	291.2	1.3	B	
			291.2	292.6	1.4	9	
		from 292.6' thru 301' moderately to intensely altered – greenish greywacke with conglomeratic sections exhibiting numerous stretched pebbles – entire section is variably SHEARED @ 70° TCA – a few localized narrow ½ – 3/4" dull white to bullish staining qtz bands – overall << 1% fine sulph min	292.6	295	2.4	10	
			295	298	3.0	11	
		– entire section is sampled for sample continuity only – otherwise nothing expected to run here.	298	301	3.0	12	
		34 – 302.5' – a 3" tight SHEAR zone trending @ 73° TCA leads off a 0.9' section of white qtz with several irregular veins and dots of greenish chlorite and orange – white carb					

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LAC MINERALS LTD./MACASSA DIV.
DIAMOND DRILL LOG

Hole No. S-64

Footage From	Footage To	Description	From	To	Total	Sample No.	Ozs.
		- minor fine pyrite core in crushed section but overall < 0.5% fine sulph min.	301	302.5	1.5	53213	
		- between 304-305' some more irregular greyish - white late qty filled fractures in greenish alt greywacke.					
		Legal 305' greenish alt tapers off & by 306' greywacke is greenish grey in color.					
		- thru to end of unit greywacke is greenish grey in color with a fine sandy to locally silty Texture					
314.7'	332.5'	Diabase - along natural irregular leading contact					
		- unit is f.g. and dark greenish grey in color. - some tight fine chloritic fracturing thru-out unit but otherwise good comp thru 332.8'					
		@ 329.7 & @ 331' some late dull white qty in the lighter greenish colored, f.g. diabase - known leaching qty.					
		- leading contact broken up - appears to have been natural					
332.5		Tuff - leading contact brokenup - probably was natural.					
		- unit is dark grey in color with a fine sandy Texture with widely scattered ¼ - ⅜" angular clasts in the unit					
		- strong bedding or layering? bedding @ 60-65° TCA.					
	335'	End of hole.					

LAC MINERALS LTD./MACASSA DIVISION

DIAMOND DRILL LOG

Hole No. S-65

Section 17+65 EAST Depth 400'

Ref. Line 22'62 NRL Dip -45° N

Elevation 1091.07 Core Size BQ

Azimuth 327° 54' Purpose ASSESSMENT Work

Location SEE REFERENCE 100 SC PLAN

Northing 17,456.81

Easting 12,149.04

Remarks T.N. LACKEY JR. Syd. 27/80. Factor

Signature

Dip Test @

20 sc E		
20 sc G		
100 sc P		
20 sc K		
20 sc L		
100 sc L		

Footage

From	To	Description	CORE From	CORE To	CORE Total	Sample No.	Ozs.
0	11'	CASING (hole collared in Basic Syenite). 5.0 – 11.0 Very fract B. Syenite NX Sized core – quite strongly fractured					
11	114.9'	BASIC SYENITE					
		dark green-grey, co-gr, massive-textured Basic Syenite; with pale green, subedral augites (up to 3 mm), white subedral K-spar patches, and an unusual predominance of black, subedral hornblendes (up to 2.0 mm) → not typical variety of Basic Syenite; section is cut by numerous, closely spaced ¼"-½" pale green-white "felsic veins" @ 60°-70° TCA.					
		• @ 23' – 2", pale to lime-green, sh'd/mylonitic FAULT @ 58° TCA; with str. → mod cr'd Basic Syenite down to 24.2'; @ 23.6' – ⅛" mylonitic Chl slip @ 40° TCA; @ 24.2' – str. cr'd section appears to be terminated by a ⅛"-¼" str. lam. white Carb-Chl slip @ 55° TCA → FAULT @ 23' is quite a strong, but tight, banana-looking feature; weakly cr'd BSy persists to 24.7'.					
	(30.5)	• beyond 24.7' – dark green-grey, co-gr, massive-textured Basic Syenite as above.					
		• @ 35.4' – ⅛" str. lam. Carb-Chl slip @ 68° TCA; leads-off a section of fine → mod-gr BSy down to 38.6'					
		• @ 37' – 1/16"-⅛" lam/mylonitic Carb-Chl slip @ 73° TCA.					
		• @ 38.6' – BSy gradationally changes back to co-gr, massive-textured variety					
		• @ 43.5' – 1/16" lam Carb-Chl slip @ 60° TCA					
	(49.7)	• @ 45.5' – ¼"-½" lam. Carb-Chl, @ 73° TCA					

LAC MINERALS LTD./MACASSA DIV.
DIAMOND DRILL LOG

Hole No. S-65

Footage From	Footage To	Description	Sample From	Sample To	Sample Total	Sample No.	Cas.
		• @ 50.5' – 1/16"-1/8" tight, lam. Carb-Chl slip @ 47° TCA.					
		• @ 51' – 2 1/16", v. tight mylonitic Chl slip @ 42° TCA; heads-off a section of mod→str. crid, f-gr Basic Syenite down to 51.4'					
		• @ 51.4' – 1/8"-3/16" str., pale to lime-green, mylonitic slip @ 57° TCA; brings in c-gr BSy beyond 51.4'					
		• @ 59' – section is cut by one irregular, 1/16"-1/8" lam. Carb-Chl fracture @ 15° TCA					
		• from 60.5' to 61.4' – broken, fractured core section along a low angle fracture similar to above.					
		• @ 63.8' – 1/16"-1/8" lam. Carb-Chl fracture @ 12° TCA.					
	(69')	• @ 65' – first appearance of a 3/4"-1" pale to red-brown, typical variety of felsic sibbing @ 70° TCA					
		• beyond 65' – Basic Syenite becomes a more typical looking variety with abundant 1/2"-1" red-brown felsic sibs at 2-3 ft. intervals.					
		• @ 78' – 2 1/16" pale green mylonitic slip @ 35° TCA.					
		• @ 82.5' – 3/4"-1", weakly bl'd, sh'd Carb-Chl ± Serp fracture – FAULT @ 50° TCA; quite a prominent feature with a 1/8"-3/8" Carb-Chl ± Serp fracture lead-off by a 1/8" str. sh'd (almost mylonitic) lime-green FAULT? seam → v. tight, with no associated crushing of the adjacent wallrocks.					
	(88')						
		• @ 88.7' – 1"-1 1/4" red-brown felsic sib @ 62° TCA.					
		• @ 123.5' – 1/8"-1/4" weakly bl'd Carb-Chl-Serp fracture-slip? @ 73° TCA; core ends don't match here, due to some grinding, but smooth surfaces suggest some movement on this tight feature.					
	(127.3')						
		• @ 114.9' – LC is along a str. 1/2" dark grey-black, laminated f mylonitic FAULT @ 67° TCA; quite a strong but tight structure with a very well developed mylonitic seam ± white discontinuous Carb bands, and TR pyrite in the mylonite; core is not broken on this feature; brings in Tuff.					
114.9'		TUFF					
		• from 114.9' to 116.3' – dark green-grey, med sh'd, generally med→f-gr, well bedded tuffs;					

LAC MINERALS LTD./MACASSA DIV.
DIAMOND DRILL LOG

Hole No. S-65

Footage From	Footage To	Description	Sample From	Sample To	Sample Total	Sample No.	Sample Ozs.
		shearing has produced stretched fragments and an apparent transposition of the bedding.					
		• from 116.3' to 116.8' – med→ co-gr, mauve coloured, crystal-rich tuff bed.					
		• from 116.8' to 118' – dark green-grey, very fine-grained argillite unit					
		• beyond 118' – mauve to red-brown, generally med→fine-gr, well bedded to thinly laminated crystal-rich tuffs; from 120' to 124' – tuffs are cut by irregular, hairline→⅛" pink-white Carb fractures which resemble crenulations @ 121.5°					
		• @ 122.7' – good Bedding @ 60° TCA					
(124.4')		• @ 125.2' – good Bedding @ 62° TCA.					
		• down to 145.7' – well + thinly bedded, generally mauve-coloured, co-gr to fragmental-textured, lapilli + crystal-rich tuffs topped by slate-grey coloured, med→fine-gr, well laminated ash/silt beds; fragmental beds show normal grading into fine-ash tops over 2-3 ft. thicknesses					
		• @ 29.3' – Bedding @ 70°					
		• @ 30.5' and 130.8' – good Bedding @ 72° and 70° TCA.					
		• @ 131.4' – some irregular 1/16"-⅛" vuggy, veined Carb fractures @ 45° TCA.					
		• @ 131.8' – ½" pink-brown to white, dull Carb fracturing @ 55° TCA.					
		• @ 134' – good Bedding @ 70° TCA.					
(146.7')		• @ 143.3' – good Bedding @ 68° TCA					
		• from 144.7' to 145' – 3"-4" section of broken + fractured core → no significant structure evident here					
		• beyond 141.1' – tuffs are dominantly dark green-grey, co-gr and fragmental textured lapilli-crystal tuffs with narrow, dark green-grey fine-ash interbeds.; crystals and lapilli in these fragmental units show a preferred alignment @ 45°-55° TCA which appears to be a primary depositional feature; however in the fine ash beds it resembles shearing (ie. from 154.6' to 155.1')					
		• from 157' to 159.3' – very co-gr + fragmental-textured, volcanic breccia horizon @ 65° TCA; characterized by large, irregular clasts of trachytic lava up to 2½" dia. and abundant angular shaped fragments with pink, euhedral pseudomorphic crystals.					
		• @ 163.7' – sharp, natural ct between green-grey + mauve-coloured tuffs @ 65° TCA					

LAC MINERALS LTD./MACASSA DIV.
DIAMOND DRILL LOG

Hole No. S-65

Footage From	Footage To	Description	Sample From	Sample To	Sample Total	Sample No.	Cas.
		• from 163.7' to 167.5' – mauve to red-brown, generally med→f-gr faintly bedded crystal-ash tuffs.					
		• beyond 167.5' – green-grey variety of tuffs; generally med→f-gr, poorly bedded to massive-textured with minor lapilli/rock fragment rich interbeds					
		• from 168.4' to 168.8' – tuffs are mod cr'd + sh'd adjacent to a str. ½" mylonitic band @ 168.4' @ 55° TCA; with discontinuous lenses of sandy Carb and irregular hairline Carb fractures; band resembles a f-gr, sh'd tuff ?? → may be a tight sh'd FAULT seam ??? due to apparent overall crushing.					
		• @ 170.5' – good Bedding @ 70° TCA.					
		• @ 182.1' – ⅛"-½" pale grey-green, str. sh'd/mylonitic fracture – FAULT seam @ 63° TCA; a very tight fracture, but there appears to be a rock type change across it.					
182.1	188.5'	BIOTITE LAMPROPHYRE DYKE					
		• green-grey, generally med-gr, crystal-rich biotite-lamprophyre dyke; with a prominent 1" f gr chilled upper and lower contact; dyke exhibits a well defined, foliation @ °TCA; with subhedral, pink-white feldspars (up to 2.0 mm) and abundant (3%-5%) black biotite laths (up to 4.0 mm) throughout.					
		• @ 188.5' – LC is along a str. but tight, pale green-grey, ¼"-⅜" mylonitic Carb-Chl FAULT @ 58° TCA.					
188.5'		TUFF					
		• green-grey, generally med to fine-grained, poorly bedded crystal-ash tuffs; with abundant scattered sip-up clasts throughout; several sip-up clast-rich interbeds, with most crudely defined, normally graded beds having a crystal + sip-up clast-rich bases					
		• @ 192' – ¼" pink-white Carb ± Qtz fracture @ 30° TCA.					
		• @ 192.3' – faint bedding @ 60° TCA.					
		• @ 202.6' – Bedding @ 55° TCA.					
	(203.0')	• @ 203' – 1" section of mod sh'd tuff ± minor orange-white Carb+Baite? fracturing and 1-2% euhedral, co-gr sulphides (pyrite); sh'd @ 60° TCA.					

LAC MINERALS LTD./MACASSA DIV.
DIAMOND DRILL LOG

Hole No. S-65

Footage From	Footage To	Description	Sample From	Sample To	Sample Total	Sample No.	Cas.
		• beyond 204.6' – tuffs are mostly, f-gn, well bedded crystal-ash tuffs with prominent parallel laminae; sip-up clasts are generally absent beyond 204.6'					
		• @ 205.8' – fine-gn, parallel laminae @ 67° TCA					
		• @ 207.4' – Bedding @ 64° TCA.					
		• @ 216.6' – tuffs change from a green-grey to a red-brown, crystal ± lapilli-rich variety; generally well bedded, with normally graded beds.; with prominent 1/16"-1/4" pink-white Carb fracturing @ 35°-45° TCA @ 219.					
	(223.1')	• from 228' to 228.6' – section is mod bl'd + alt'd to a buff→red-brown adjacent to a 1" orange-green cc'd + lam fracture – FAULT? @ 60° TCA; quite a tight feature, with minor associated crushing, and 1% f-gn disem-mlph (check assay)	228	228.6'	0.6	50901	
	(242.4')	• @ 238' – good Bedding @ 65° TCA					
	(250')	• @ 249.6' – good Bedding @ 65° TCA					
		→ NOTE: Hole S-65 extended beyond 250' → Boxes from 250' onward are labelled S-65B #1 to #B					
		• beyond 250' – grey-brown to red-brown, well bedded, sip-up and lapilli-rich crystal-ash tuffs					
	(268')	• @ 259.2' – fine-grained ash bed @ 60° TCA					
		• @ 269.1' – LC is sharp + natural @ 67° TCA.					
269.1'	276.2'	GREYWACKE					
		• green-grey to grey-brown, generally medium to co-gn, "gritty" textured greywacke; with very prominent red jasper fragments (1mm – 3mm) throughout; section is massive-textured with abundant scattered pebbles (up to 2" dia).					
		• @ 276.2' – LC is along a 1" cc'd + lam. Carb-Qtz-Chl-Ba fracture – FAULT? @ 65° TCA; wallrocks are weakly bleached adjacent to this feature, and the footwall is mod cc'd; overall 1% assoc'd mlph in bleached margins and as comgs, euhedral pyrite within the fracture; there is a rock-type change to tuff across this tight feature.	276	276.6	0.6'	50902	

LAC MINERALS LTD./MACASSA DIV.
DIAMOND DRILL LOG

Hole No. S-65

Footage From	Footage To	Description	Sample From	Sample To	Sample Total	Sample No.	Ass.
276.2	309.2'	TUFF					
		• generally mauve to red-brown, well bedded, normally graded, crystal-ash tuffs; unit contains widely-spaced 1/8"-1/4" pink Carb-fractures @ 45°-65° TCA.					
		• @ 277.5' - Bedding @ 65° TCA.					
	(287.5')	• @ 286.4' - good Bedding @ 70° TCA; v. f-gr ash tops; slightly sericitized.					
		• @ 287.7' - 1/2" pink-white to orange Carb tension fracture @ 63° TCA.					
		• @ 289.2' - good Bedding @ 70° TCA.					
		• from 293.6' to 294' - section is weakly bl'd + cr'd adjacent to a sooty, str. 1/4"-3/8" laminated Carb-Chl ± Moly ?? FAULT @ 293.8' @ 55° TCA; with a prominent 1/16"-1/8" mylonitic seam, and a faint Moly-coated surface (having a faint blue-grey tinge); 0.1' of section immediately FW to this FAULT is sooty; overall TR-1% sulph; some evidence of a f-gr, chloritic matrix/groundmass here + also.	293.6	294	0.4'	50903	
		• from 294' to 296.5' - tuffs are cut by numerous 1/4"-3/8" red-brown to pink Carb ± Qtz fractures @ 30° TCA with 1% associated sulph; from 296.4' to 296.5' - section is str. cr'd adjacent to a str. 1/8"-1/4" cr'd/mylonitic slip @ 296.5' @ 47° TCA; terminates fracturing and weak bleaching (check assay)	296	296.5	0.5'	50904	
		• @ 301.1' - tuffs change gradationally from a mauve-red variety to green-grey tuffs; these are generally poorly bedded, med-gr crystal-ash tuffs with abundant 1/4"-3/4" scattered lapilli fragments throughout.					
		• beyond 305.3' - tuffs become pale green and sericitic with locally developed sections of shearing (ie. @ 306.2' @ 37° TCA); with abundant disseminated + laminated magnetite grains @ 306.6'					
	(306.8')	• from 306.9' to 309.2' - section of f-gr, pale green to lime-green, str. cr'd to locally mylonitic tuffs?; with 40-50% bull'd. white to orange-brown, Qtz-Carb-K-spar veins/fractures @ 45°-47° TCA; fractures range from 1/8" to 4" wide with rusty, up to 1% contained sulph mostly along the fracture margins; last 0.1' of section is v. str. sh'd to mylonitic @ 45° TCA; there is a rock type change across this sh'd fracture zone to greywacke → possible tight sh'd FAULT ZONE ??	306.9	309.2	2.3'	50905	

FAULT ZONE ??

LAC MINERALS LTD./MACASSA DIV.
DIAMOND DRILL LOG

Hole No. S-65

Footage From	Footage To	Description	From	To	Total	Sample No.	Cas.
309.2'	324.5'	GREYWACKE					
		• lime-green to pale green, generally med → co-gr, mod sh'd but otherwise massive-textured greywacke; with prominent 1/16"-1/4" red jasper fragments throughout, and minor scattered rock fragments up to 1" dia.					
		• from 315.6' to 316.5' – section is mod bl'd, sh'd and sericitic adjacent to a 1"-1½" str. cr'd to brecc'd Carb-Chl-Qtz BREAK @ 316.2' @ 63° TCA; with a 1" brecc'd, Chl BREAK seam with angular fragments of Carb + Qtz and a prominent 1/8"-3/16" soft Chl-mud gouge seam.; prominent sericitic shear bands @ 60-65° TCA occur throughout section; @ 315.7' – ∠1/16" tight Sulph-coated fracture-slip @ 60° TCA with 3-5% sulph (py).	315.6	316.5	0.9'	50906	
		• from 316.5' to 317.5' – mod → weakly cr'd + sericitic, med-gr greywacke with minor 1/16"-1/4" bulbed Qtz-Carb-Chl fracturing @ 45-50° TCA; overall TR sulph.	316.5	317.5	1.0'	50907	
		• from 317.5' to 318.5' – similar to above section, but with 2-3% disem. sulph concentrated in patches adjacent to irregular hairline fracture	317.5	318.5	1.0'	50908	
		• beyond 321' – section becomes a dark green-grey, "fresher"/less altered variety of greywacke; with prominent pebble-sized beds throughout as well as red jasper.					
		• @ 323.9' – tight 1/16"-3/8" mylonitic Chl seam @ 50° TCA; bleeds-off a section of crushed tuffs down to 324.5'					
		• @ 324.5' – LC is along a ∠1/16" dark green, mylonitic fracture-slip @ 63° TCA; weakly bleached for 0.1' above slip ⇒ brings in Diabase.					
324.5	342.2'	DIABASE DYKE					
		• pale green-grey to green, generally med ⇒ f-gr, crystal-rich diabase; with a prominent f-gr chilled margin from 324.5' to • ; contains green-white, subhedral feldspar laths (ranging from ∠ 1.0 mm to 2.0 mm) set in a f-gr matrix.					
	(326')	• dyke is cut by irregular, dark green chloritic fractures @ 30° TCA, as well as lime-green, epidote-rich fractures + epidote patches					

LAC MINERALS LTD./MACASSA DIV.
DIAMOND DRILL LOG

Hole No. S-65

Footage From	Footage To	Description	Sample From	Sample To	Sample Total	Sample No.	Cas.
		• @ 342.3' - LC is sharp along a 1/16" tight Chl fracture @ 55° TCA					
342.2	347.4	TUFF					
		• green-grey to green-brown, generally mod → f-gr tuffs					
	(345.5')	• from 342.2' to 343.5' - section is cut by numerous hairline → 1/8" epidote-Chl fractures @ 20-30° TCA					
		• from 346.5' to 347.6' - tuffs are weakly bleached + fine-mod adjacent to a 8", grey-white, somewhat "mottled-textured", brecciated Qtz-Carb vein @ 47° TCA from 346.6' to 347.4'; vein contains 2-3% pyrite concentrated in irregular, smoky grey to blue quartz patches that appear to intrude and fragment the white-bulbous Qtz variety; fracturing at & near 347.4' is along a 1/8"-1/4" lime-green, mylonitic seam @ 65° TCA ⇒ possible tight mylonitic FAULT - here?? - since there is also a rock-type change across this feature.	346.5	347.6	1.1'	50909	
8" Qtz vein & tight mylonitic FAULT.							
347.4		GREYWACKE / CONGLOMERATE					
		• from 347.4' to 353.4' - green-grey, generally massive to v poorly bedded, mod-gr greywacke; v.fine mod jasper fragments throughout.					
		• beyond 353.4' - transitionally changes into a co-gr polymictic conglomerate cont mod jaspers; from 355.5' to 359.8' - conglomerates are mod → str. sh'd @ 45°-50° TCA; mod pronounced sheared bands and stretched pebbles defining a good foliation					
		• @ 359.8' - 1/4"-3/8" str but tight, sh'd mylonitic FAULT @ 50° TCA - leaders off a 3" section of str. cr'd + sericitic, lime-green gouge, with 50-60% irregular, dull orange-white Ca-Qtz-Kspr fractures ⇒ tight but strong FAULT - here; overall Tr 1% sulph	359.8	360.1	0.3	50910	
		• from 360.1' to 361' - str → mod cr'd/sh'd, mod bl'd gouge with 10-15% irregular bulbous white Qtz-Carb fracturing @ 57° TCA + Tr sulph (check assay)	360.1	361	0.9'	50911	
		• down to 365.2' - pale green to lime-green, generally mod-gr, moderately well bedded greywacke; mod jaspers + detrital quartz evident, and pronounced magnetite-rich laminae defining bedding throughout.					

Page No. 9

LAC MINERALS LTD./MACASSA DIV.
DIAMOND DRILL LOG

Hole No. S-65

Footage From	Footage To	Description	From	To	Total	Sample No.	Cas.
	(363.2)	• @ 363.3' – Bedding @ 70° TCA ; mgl - laminae					
		→ logged to 365.2'					
		• down to 373.5' – generally med to co-gr , poorly bedded, green-grey greywacke with prominent red-jasper fragments throughout ; section appears moderately mod → str. sheared beyond 370'					
		• from 367.3' to 367.9' – section is cut by a 1½"-1" bullish white , Qtz-Carb-Chl-Ser ± Bo vein @ 58° TCA ; greywackes are str. sh'd + sericitic over this interval with a banded / sheared leading ct. @ 367.4' @ 40° TCA ; vein is weakly min'd with 1-2% fracture controlled pyrite	367.3	367.9	0.6'	50975	
		• beyond 373.5' – section is mod → str. sh'd, co-gr polymictic conglomerate with prominent stretched + rotated pebbles showing a preferred alignment @ 60-65° TCA ; abundant red-jasper fragments ;					
		• @ 378.5' – shearing @ 62° TCA with stretched pebbles					
		• @ 380.1' – ¼" tight , lime-green , mylonitic seam @ 60° TCA ; appears to be a tight FAULT	380.1	381.8'	1.7'	50976	
		line , occurring at the peak of crushed conglomerates ; this feature leads-off a section	381.8	383.4'	1.6'	50977	
		of lime-green , str. cr'd / sh'd + sericitic conglomerate + greywacke down to 384' , section	383.4	384'	0.6'	50978	
		• is str. sh'd ± TR-1% sulph disseminated throughout section ; from 383.4' to 384' – section is v. str. sh'd ± a ¾"-1" bullish white Qtz stkg @ 383.9' @ 62° TCA ; section contains 1% ave sulph , and Qtz stkg appears to terminate much of the shearing and alteration.					
	(385.1')	• beyond 384' – green-grey , generally med to co-gr , massive-textured greywacke down to 389.3'					
		• beyond 389.3' – green-grey to locally bleached , co-gr , mod sh'd polymictic conglomerates (as above)					
		• @ 395' – sheared @ 65° TCA .					
	(400')	• EOH @ 400' in moderately sheared , polymictic conglomerates .					

J. N. Lackey Jr.
Oct. 17/90.

AL.

Ministry of Northern Development and Mines
Ontario

DOCUMENT No. W9108.00106

Instructions
- Please type or print.
- For each type of work performed, a separate Report of Work should be completed.

42A01NE0127 78 TECK

900

Mining Act — Report of Work

Name and Address of Recorded Holder
LAC MINERALS LTD (MACASSA DIVISION) — T 664
P.O. Box 550 KIRKLAND LAKE, ONTARIO P2N 3J7 — Telephone No. (705) 567-5208

Summary of Distribution of Credits and Work Performance

Mining Division: LARDER LAKE
Township or Area: TECK
Total Assessment Credits Claimed: 203 ~~175~~ DTK
Type of Work Performed (Check one only)
- ☐ Manual Work
- ☐ Shaft Sinking Drifting or other Lateral Work
- ☐ Mechanical equipment
- ☐ Power Stripping other than Manual (maximum credit allowed - 100 days per claim)
- ☒ Diamond or other Core drilling
- ☐ Core Specimens

Mining Claim Prefix	Mining Claim Number	Work Days Cr.	Mining Claim Prefix	Mining Claim Number	Work Days Cr.	Mining Claim Prefix	Mining Claim Number	Work Days Cr.
	L983045	~~50~~	43	DTK				
	L1045619	50	43	DTK				
	L1045623	50	43	DTK				
	L1049049	53	46	DTK				
		~~203~~ 175	DTK					

175 days banked W9008.00636
28 days from core submission to the core library for assessment credit.

Dates when work was performed: From: SEPT 25/90 To: SEPT 29/90
Total No. of Days Performed: 175 ~~763~~ DTK Days
Total No. of Days Claimed: 203 ~~175~~ DTK
Total No. of Days to be Claimed at a Future Date: 0

All the work was performed on Mining Claim(s): Indicate no. of days performed on each claim. * (See note No. 1 on reverse side)

Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days
L1049049	~~763~~ 175 DTK										

Required information eg. type of equipment, Names, Addresses, etc. (See Table on reverse side)
If space below is insufficient, attach schedules with required information and location sketches

SAME AS SUBMITTED ON OCT 29/90
DOCUMENT #W9008
Copy Attached.

ONTARIO GEOLOGICAL SURVEY
GIS - ASSESSMENT FILES
APR 0 2 1991
RECEIVED

Certification of Beneficial Interest * (See Note No. 2 on reverse side)
I hereby certify that, at the time the work was performed, the claims covered in this report of work were recorded in the current recorded holder's name or held under a beneficial interest by the current recorded holder.
Date: MARCH 19/91 — Recorded Holder or Agent (Signature): D. F. Cater

Certification Verifying Report of Work
I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.
Name and Address of Person Certifying: DOUGLAS F. CATER c/o LAC MINERALS LTD (MACASSA DIVISION) P.O. Box 550 KIRKLAND LAKE ONTARIO P2N 3J7
Telephone No. (705) 567-5208
Date: MARCH 4/1991
Certified By (Signature): D. F. Cater

For Office Use Only

Work Assignments: L 1049049 Lac Minerals Ltd. 122 3377

Received Stamp: RECEIVED LARDER LAKE MINING DIVISION MAR 12 1991
TIME 10:30am

7565 (89/06)


Kirkland Lake
Teck
Northland
Chaput Hughes

AL.

Teck Twp.

Ministry of Northern Development and Mines — Ontario

DOCUMENT No. W9008.00636

Report of Work

LARDER LAKE MINING DIVISION

Mining Act

DOCUMENT No. 9008

Instructions - Supply required data on a separate form for each type of work to be recorded (see table below). For Geo-technical work use form no. 1362 "Report of Work (Geological, Geophysical, Geochemical and Expenditures)".

Name and Postal Address of Recorded Holder	Prospector's Licence No.
LAC MINERALS LTD (MACASSA DIVISION)	T 664
P.O. BOX 550 KIRKLAND LAKE ONTARIO P2N 3J7	

RECEIVED 90 OCT 29

Summary of Work Performance and Distribution of Credits

Total Work Days Cr. claimed: 560 days

for Performance of the following work. (Check one only)

- ☐ Manual Work
- ☐ Shaft Sinking Drifting or other Lateral Work.
- ☐ Compressed Air, other Power driven or mechanical equip.
- ☐ Power Stripping
- ☒ Diamond or other Core drilling
- ☐ Land Survey

Mining Claim Prefix	Mining Claim Number	Work Days Cr.
	L983045	140
[redacted]	L1045619	140
	L1045623	140
	L1049049	140

Mining Claim Prefix	Mining Claim Number	Work Days Cr.
[redacted]		

Mining Claim Prefix	Mining Claim Number	Work Days Cr.
[redacted]		

DOCUMENT No. W9008.00636

All the work was performed on Mining Claim(s): L 1049049

Required Information eg: type of equipment, Names, Addresses, etc. (See Table Below)

EQUIPMENT: UNITIZED HS 10A SURFACE DIAMOND DRILL RIG
& D5 CATERPILLAR TRACTOR, PICK-UP TRUCK

DRILLING COMPANY HEATH AND SHERWOOD DRILLING (1986) INC.
P.O. BOX 998
34 DUNCAN AVENUE NORTH
KIRKLAND LAKE, ONTARIO
P2N 3L3
PHONE 567-9311

WORK DONE SEPT 25TH - SEPT 29/90 INCLUSIVE

S-65 400'
S-64 335'
735' applied 560, Banked: 175 days

ONTARIO NOV 20 1990

Date of Report	Recorded Holder or Agent (Signature)
OCTOBER 29/90	

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying	Date Certified	Certified by (Signature)
DOUGLAS F. CATER P.O. BOX 550 KIRKLAND LAKE ONT P2N 3J7	OCTOBER 29/90	

Table of Information/Attachments Required by the Mining Recorder

Type of Work	Specific information per type	Other information (Common to 2 or more types)	Attachments
Manual Work	Nil	Names and addresses of men who performed manual work/operated equipment, together with dates and hours of employment.	Work Sketch: these are required to show the location and extent of work in relation to the nearest claim post.
Shaft Sinking, Drifting or other Lateral Work			
Compressed air, other power driven or mechanical equip.	Type of equipment		
Power Stripping	Type of equipment and amount expended. Note: Proof of actual cost must be submitted within 30 days of recording.	Names and addresses of owner or operator together with dates when drilling/stripping done.	
Diamond or other core drilling	Signed core log showing; footage, diameter of core, number and angles of holes.		Work Sketch (as above) in duplicate
Land Survey	Name and address of Ontario land surveyer.	Nil	Nil

768 (85/12)

Sent new forms.

Bernhardt Twp. M.327

4 M
3 M
2 M
Amikougami Cr.
South Amikougami Lake
Young
Lower Kirkland Lake
Kirkland Lake
Chaput Hughes
Northland
Tech