PROJECT

PROPERTY: RICH

HOLE: DDH-RI08-25

Easting	Northing	Elev.	Depth (m)
444390	7354600	618 m	343.5

Contractor: Orofino
Drill:

SURVEY							
Depth (m)	Azimuth	Dip	Method	Depth (m)	Azimuth	Dip	Method
collar							
	90	-70	compass				

Core size: HQ and NQ
Cassing depth: (m) out

Drilling dates: May 18 - May 23

Logged by: D. Gregory

Target: NiMo horizon at the contact between the canol and road river formations.

SUMMARY				
From (m)	To (m)	Interval	Unit	Coments
0	343.5	343.5 m	Imp	

SAMPLES	
Numbers:	
Total:	
Date sent:	

COMMENTS

Entire hole Imerial formation, far short of Canol/Road River contact target.

PROPERTY: **HOLE:**

LITHOLOGY										ALT.			MINERALS				SAMPLES							Blocks			GEOTECHNICAL						JOINTS					
Struct.																											REC		RQD									
Type	Attitude	From (m)	To (m)	Interval (m)	Type	Unit	Texture	Modifier	Notes:				py				From (m)	To (m)	Interval (m)	Sample				From (m)	To (m)	Intvl. (m)	(m)	Percent	(m)	Percent	Weathering	Hardness	Frequency	Attitude	Shape	Roughness	Infilling	
		0	9.35	9.35		OVBD																		0.00	11.28	11.28	1.54	13.7	0.00	0	HW	VW	0					
		9.35	17.86	8.51		Imp			med-dark grey non-calcareous mudstone with minor limonitic stain. v. soft and heavily broken / ground-up. Bedding not discernable due to degree of fracturing.	x-clay														11.28	12.80	1.52	0.69	5.39	0.00	0	HW	VW	0					
		17.86	23.63	5.77		Imp			med-dark grey non-calcareous mudstone v. soft. bedding not discernable due to degree of clay alt. Non-calcareous minor gypsum crystals on a few fractures.	s-x clay														12.80	14.33	1.53	0.90	6.28	0.00	0	HW	VW	0					
bed	59	23.63	25.7	2.07		Imp			dark grey non-calcareous mudstone. mod-soft. Minor gypsum (3x1 mm thin platy clear crystals) filling fractures.	mod clay														14.33	15.85	1.52	1.01	6.37	0.00	0	HW	VW	0					
		25.7	25.84	0.14		Imp			dark grey fine grained sandstone.															15.85	17.07	1.22	0.70	4.1	0.00	0	HW	VW	0					
bed	52	25.84	32.35	6.51		Imp			dark grey non-calcareous mudstone. mod. hardness with somewhat gaugey material at 28.04 m.	mod clay														17.07	18.59	1.52	0.84	4.52	0.00	0	SW	VW	0					
F?	??	32.35	32.61	0.26		Imp			black ground-up gauge.	x-clay														18.59	19.57	0.98	1.58	8.07	0.16	16	FR	W	3	60	2	2	A	
bed	50	32.61	33.97	1.36		Imp			dark grey mudstone, mod. hardness with minor gypsum crystals on rare fractures.	mod clay														19.57	21.03	1.46	1.05	4.99	0.10	7	SW	W	2	60	2	2	A	
F?	??	33.97	34.14	0.17		Imp			black ground-up mudstone. Gauge?	x-clay														21.03	21.95	0.92	0.70	3.19	0.12	13	FR	W	0					
bed	60	34.14	45.75	11.61		Imp			dark grey non-calcareous mudstone. Mod. harness with t disseminated pyrite	w clay			t											21.95	23.47	1.52	1.05	4.47	0.00	0	FR	W	2	60	2	2	A	
bed	62					Imp																		23.47	24.99	1.52	0.86	3.44	0.10	7	FR	W	1	60	2	2	A	
		45.75	50.04	4.29		Imp			dark grey non-calcareous mudstone. mod. hardness v. fractured with poor recovery across interval.	s clay			t											24.99	26.52	1.53	1.30	4.9	0.13	8	FR	W	0					
bed	50	50.04	104.6	54.6		Imp			dark grey non-calcareous mudstone. Mod. harness with minor black flecks and t. disseminated pyrite dark minor v. thin calcite coat on 5% of fractures. @ 90.53 m a 1 cm wide calcite vein with ~ 10% thin mudstone laminae from the crack-seal vein formation. Bedding measurements taken ~ equal distance apart. 81.38-88.48 m bedding indeterminable.	w clay			t												26.52	28.04	1.52	0.86	3.07	0.14	9	FR	W	0					
bed	59																							28.04	29.57	1.53	1.22	4.13	0.00	0	FR	W	0					
bed	67																							29.57	31.09	1.52	1.45	4.66	0.13	9	FR	W	1	60	2	2	A	
bed	58																							31.09	32.61	1.52	0.98	3.01	0.15	10	FR	W	0					
bed	66																							32.61	34.14	1.53	0.82	2.4	0.20	13	FR	W	0					
bed	61																							34.14	35.66	1.52	1.52	4.26	0.10	7	FR	W	1	60	2	2	A	
bed	69																							35.66	37.18	1.52	1.10	2.96	0.45	30	FR	W	3	60	2	2	A	
bed	64																							37.18	38.71	1.53	0.90	2.32	0.23	15	FR	W	1	60	2	2	A	
bed	64																							38.71	40.23	1.52	1.35	3.36	0.28	18	FR	W	1	60	2	2	A	
bed	69																							40.23	41.76	1.53	1.43	3.42	0.23	15	FR	W	2	60	2	2	A	
bed	59																							41.76	44.81	3.05	1.10	2.45	0.00	0	FR	W	0					
bed	72																							44.81	47.85	3.04	1.08	2.26	0.00	0	FR	W	0					
bed	58																							47.85	50.90	3.05	1.76	3.46	0.00	0	FR	W	1	60	2	2	A	
bed	59																							50.90	53.95	3.05	2.40	4.45	0.24	8	FR	W	1	60	2	2	A	
bed	68																							53.95	57.00	3.05	2.73	4.79	1.10	36	FR	W	1	60	2	2	A	
bed	50																							57.00	60.05	3.05	1.72	2.86	0.17	6	FR	W	1	60	2	2	A	

PROPERTY: **HOLE:**

LITHOLOGY										ALT.			MINERALS				SAMPLES							Blocks			GEOTECHNICAL						JOINTS				
Struct.																											REC		RQD								
Type	Attitude	From (m)	To (m)	Interval (m)	Type	Unit	Texture	Modifier	Notes:				py				From (m)	To (m)	Interval (m)	Sample				From (m)	To (m)	Intvl. (m)	(m)	Percent	(m)	Percent	Weathering	Hardness	Frequency	Attitude	Shape	Roughness	Infilling
bed	55																							60.05	63.09	3.04	2.48	3.93	0.43	14	FR	W	1	60	2	2	A
bed	50																							63.09	66.14	3.05	2.48	3.75	1.38	45	FR	W	2	60	2	2	A
bed	60																							66.14	69.19	3.05	2.94	4.25	1.37	45	FR	W	1	60	2	2	A
bed	61																							69.19	72.24	3.05	3.08	4.26	1.89	62	FR	W	1	60	2	2	A
bed	53																							72.24	75.29	3.05	2.94	3.9	1.94	64	FR	W	1	60	2	2	A
bed	59																							75.29	78.33	3.04	2.72	3.47	0.43	14	FR	W	2	60	2	2	A
bed	63																							78.33	81.38	3.05	2.30	2.83	0.10	3	FR	W	1	60	2	2	A
bed	62																							81.38	84.43	3.05	2.20	2.61	0.47	15	FR	W	1	60	2	2	A
bed	50																							84.43	87.48	3.05	2.80	3.2	0.49	16	FR	W	1	60	2	2	A
bed	50	104.6	105.2	0.56		Imp			dark grey non-calcareous mudstone interbedded with 20% black mudstone beds ranging from 1 mm to 2 cm wide. minor evidence of soft sediment. def.																	87.48	90.53	3.05	2.77	3.06	0.98	32	FR	W	1	60	2	2	A
bed	49	105.2	114.2	9.04		Imp			dark grey non-calcareous mudstone. Trace 1 mm wide black beds with minor soft sediment deformation @ 108.85 1 cm wide calcite crack-seal vein parallel to bedding ~ 40% calcite 60% thin rip-ups of host rock																	90.53	93.57	3.04	2.92	3.12	1.93	63	FR	W	1	60	2	2	A
bed	67	114.2	118.6	4.38		Imp			dark grey non-calcareous mudstone with black beds; for 1st 50 cm of int. ~ 40% black beds 1-2 cm wide after ~ 3% black beds 1-2 mm wide. Rarely pyrite is contained within black beds. @ 114.37m 0.5cm wide crack-seal calcite vein. Calcite makes-up 60% of vein. Significant soft sediment deformation				t													93.57	96.62	3.05	2.68	2.77	1.96	64	FR	W	1	60	2	2	A
		118.6	133.1	14.5		Imp			dark grey non-calcareous mudstone with rare black beds mod-high hardness. 4 mm wide quartz vein parallel to bedding @ 120.83m with ~10% host rock rip-ups (1.5 cm long 2 mm wide and 5% calcite). @124.05 m 1 cm wide gaugey zone; though at end of run possibly caused by drillers.																	96.62	99.67	3.05	2.93	2.94	2.20	72	FR	W	1	60	2	2	A
bed	49	133.1	136.9	3.8		Imp			dark grey non-calcareous mudstone interbedded with 23% black mudstone and 7% med grey fine grained sandstone. Minor thin (1 mm) calcite veining parallel to bedding associated with black beds. Large cluster occurs between 133.4-133.46m ~20% is calcite vein. Evidence of soft sediment deformation.																	99.67	102.72	3.05	2.83	2.76	1.50	49	FR	W	1	60	2	2	A
bed	56	136.9	145.6	8.66		Imp			dark grey non-calcareous mudstone with 3% black mudstone interbeds. Non-calcareous with 3 mm wide quartz vein (with t. calcite) @ 140.73 m parallel to bedding.																	102.72	105.77	3.05	2.80	2.65	1.40	46	FR	W	1	60	2	2	A
bed	63																							105.77	108.81	3.04	2.64	2.43	2.09	69	FR	W	1	60	2	2	A

PROPERTY: **HOLE:**

LITHOLOGY										ALT.			MINERALS				SAMPLES							Blocks			GEOTECHNICAL						JOINTS					
Struct.																											REC		RQD									
Type	Attitude	From (m)	To (m)	Interval (m)	Type	Unit	Texture	Modifier	Notes:				py				From (m)	To (m)	Interval (m)	Sample				From (m)	To (m)	Intvl. (m)	(m)	Percent	(m)	Percent	Weathering	Hardness	Frequency	Attitude	Shape	Roughness	Infilling	
bed	49	145.6	146.2	0.6		Imp			dark grey non-calcareous mudstone interbedded with ~15% black mudstone with ~10% of black mudstone being pyrite. Indicates a fold with top side dipping 49 degrees and the bottom side dipping 47 degrees.				t pyrite											108.81	111.86	3.05	2.30	2.06	0.90	30	FR	W	1	60	2	2	A
bed	47																							111.86	114.91	3.05	2.90	2.52	1.59	52	FR	W	1	60	2	2	A
bed	59	146.2	149.6	3.43		Imp			dark grey non-calcareous mudstone with t thin black beds t disseminated pyrite				t pyrite											114.91	117.96	3.05	2.73	2.31	1.71	56	FR	W	1	60	2	2	A
bed	45	149.6	150	0.34		Imp			dark grey non-calcareous mudstone interbedded with 20% 2 cm wide black beds. Appear to be folded dipping 45 degrees in one direction and 52 degrees in the opposite direction. Black beds contain ~ 25% pyrite.				5% pyrite											117.96	121.01	3.05	2.71	2.24	1.48	49	FR	W	1	60	2	2	A
bed	45			0																				121.01	124.05	3.04	2.98	2.4	1.87	62	FR	W	1	60	2	2	A
bed	55	150	166.2	16.28		Imp			dark grey non-calcareous mudstone with rare black flecks. A few 1-6 mm wide black beds near the end of the interval @ 160.95 m there is a 3 cm wide clay gauge zone @ the end of the interval minor quartz stringers and t clay alt.	t clay														124.05	127.10	3.05	2.86	2.25	1.86	61	FR	W	1	60	2	2	A
bed	68																							127.10	130.15	3.05	2.93	2.25	1.87	61	FR	W	1	60	2	2	A
bed	59																							130.15	133.20	3.05	3.00	2.25	2.39	78	FR	W	1	60	2	2	A
bed	65																							133.20	136.25	3.05	2.88	2.11	1.82	60	FR	W	2	60	2	2	A
bed	61																							136.25	139.29	3.04	2.80	2.01	1.68	55	FR	W	1	60	2	2	A
bed	56	166.3	174.1	7.76		Imp			med grey fine grained non-calcareous sandstone.															139.29	142.34	3.05	3.24	2.28	2.10	69	FR	W	1	60	2	2	A
bed	71	174.1	175.3	1.2		Imp			dark grey non-calcareous mudstone with rare black flecks (0.2x2 mm). 2 med grey mudstone beds from 173.20-173.22m and 173.27-173.29m. @ 173.15m a 0.5 cm thick clay gauge zone.															142.34	145.39	3.05	2.86	1.97	2.16	71	FR	W	1	60	2	2	A
	50																							145.39	148.44	3.05	2.86	1.93	2.25	74	FR	W	1	60	2	2	A
bed	59	175.3	183	7.72		Imp			dark grey non-calcareous mudstone with t black flecks and rare black beds. @ 176.00-176.02 m and 176.86-176.88 m light-med grey beds. @ 179.84-179.88 m a med grey slightly sandy bed with minor cross bedding from 182.49-182.82 m several milky quartz veins with t calcite (~20 % of rock ~4 mm wide generally dipping along bedding but small stringers connecting veins.															148.44	151.49	3.05	2.77	1.83	2.33	76	FR	W	1	60	2	2	A
bed	67																							151.49	154.53	3.04	2.84	1.84	2.28	75	FR	W	2	60	2	2	A
bed	66																							154.53	157.58	3.05	2.56	1.62	2.19	72	FR	W	1	60	2	2	A
bed	75																							157.58	160.63	3.05	2.80	1.74	2.40	79	FR	W	1	60	2	2	A
bed	50																							160.63	163.68	3.05	3.03	1.85	3.03	99	FR	W	1	60	2	2	A
bed	72																							163.68	166.73	3.05	3.05	1.83	3.00	98	FR	W	1	60	2	2	A

PROPERTY: **HOLE:**

Struct. Type	Struct. Attitude	LITHOLOGY From (m)	To (m)	Interval (m)	Type	Unit	Texture	Modifier	Notes:	ALT.			MINERALS py				SAMPLES From (m)	To (m)	Interval (m)	Sample				Blocks From (m)	To (m)	Intvl. (m)	GEOTECHNICAL REC (m)	REC Percent	RQD (m)	RQD Percent	Weathering	Hardness	JOINTS Frequency	Attitude	Shape	Roughness	Infilling
bed	68	183	184.5	1.47		Imp			dark grey mudstone with lengths of 10-30 cm sections with 20% beds being 1 mm to 1.5 cm wide. Shows minor soft sediment deformation. Sections occur every 75 cm (3 sections total ` equal dist apart). Int. ends in 1-2 cm wide gauge zone.															166.73	169.77	3.04	2.98	1.76	2.31	76	FR	W	1	60	2	2	A
bed	61																							169.77	172.82	3.05	2.89	1.67	2.54	83	FR	W	1	60	2	2	A
bed	60	184.5	192.9	8.46		Imp			dark grey non-calcareous mudstone with t small black flecks 2-3 cm wide light coloured segments (nodules?) occur ~every 50 cm though rarely as close as 30 cm together. Rare beds contain minor (1-2%) disseminated. pyrite.				t											172.82	175.87	3.05	2.80	1.59	1.71	56	FR	W	1	60	2	2	A
bed	58																							175.87	178.92	3.05	2.88	1.61	2.00	66	FR	W	1	70	2	2	A
bed	59																							178.92	181.96	3.04	2.80	1.54	1.90	62	FR	W	1	70	2	2	A
bed	66																							181.96	185.01	3.05	2.81	1.52	1.58	52	FR	W	1	70	2	2	A
bed	61																							185.01	188.06	3.05	2.70	1.44	2.19	72	FR	W	1	70	2	2	A
bed	68	192.9	194.6	1.64		Imp			slightly sandy med-dark grey mudstone with 35% black interbeds ranging from 3-12 mm. Black beds are pyritiferous with generally 2% pyrite but occasionally up to 50% pyrite. Progressively less sandy across interval.				0.005											188.06	191.11	3.05	2.97	1.55	2.65	87	FR	W	1	70	2	2	A
	60																							191.11	194.16	3.05	2.92	1.5	2.76	90	FR	W	2	70	2	2	A
bed	62	194.6	196.6	2.06		Imp			dark grey non-calcareous mudstone with ~15% black beds and 4% pyrite beds. pyrite beds occur with the black beds in clots every 50 cm with the majority of the pyrite in the centre of the interval. Pyrite beds are 0.5-2 mm wide and black beds a 1mm-1cm wide with minor soft sediment deformation.				0.005											194.16	197.21	3.05	2.88	1.46	2.53	83	FR	W	1	70	2	2	A
bed	58	196.6	200	3.33		Imp			dark grey non-calcareous mudstone with ~2% black beds 1-5 mm wide with minor soft sediment deformation. T. pyrite beds 1 mm wide usually associated with black beds. @199.56 m 1 mm thick calcite beds are found near pyrite beds.				t											197.21	200.25	3.04	2.80	1.4	2.69	88	FR	W	1	70	2	2	A
bed	61																							200.25	203.30	3.05	2.74	1.35	2.45	80	FR	W	2	70	2	2	A
bed	66																							203.30	206.35	3.05	2.91	1.41	2.85	93	FR	W	1	70	2	2	A
bed	61																							206.35	209.40	3.05	2.65	1.27	0.27	9	FR	W	2	70	2	2	A

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LITHOLOGY										ALT.			MINERALS				SAMPLES							Blocks			GEOTECHNICAL						JOINTS				
Struct.																											REC		RQD								
Type	Attitude	From (m)	To (m)	Interval (m)	Type	Unit	Texture	Modifier	Notes:				py				From (m)	To (m)	Interval (m)	Sample				From (m)	To (m)	Intvl. (m)	(m)	Percent	(m)	Percent	Weathering	Hardness	Frequency	Attitude	Shape	Roughness	Infilling
bed	54	200	206.4	6.4		Imp			dark grey mudstone with t. black flecks @ 200.18 3mm wide erratic sugary quartz vein (1mm wide crystals) in a med grey/brown nodule 4 cm wide. t. black stringers through-out interval. Med grey/brown beds occur from 203.71-203.73m and 205.14-205.16m. Both these bands are a 6 cm wide swarm of black beds with ~ 3% black beds (1 mm wide). Black beds show evidence of soft sediment deformation @ 205.02 m a 3 mm wide sugary quartz vein with 1 mm x 8 mm wall rock inclusions.													209.40	212.45	3.05	3.00	1.41	2.15	70	FR	W	1	70	2	2	A
bed	49																							212.45	215.49	3.04	2.68	1.24	2.15	71	FR	W	1	70	2	2	A
bed	54																							215.49	218.54	3.05	2.73	1.25	2.17	71	FR	W	1	70	2	2	A
bed	55																							218.54	221.59	3.05	2.97	1.34	2.61	86	FR	W	1	70	2	2	A
bed	56																							221.59	224.64	3.05	3.05	1.36	2.55	84	FR	W	1	70	2	2	A
F?	??	206.4	208.9	2.54		Imp			heavily fractured dark grey non-calcareous mudstone with ~3% gaugey bands; mostly angular pieces of rock. @207.87 and 208.79 2-4 mm wide milky quartz veins with ~ 30% angular mudstone rip-ups. Fractures have shiny graphitic? coating.													224.64	227.69	3.05	3.04	1.34	2.61	86	FR	W	1	70	2	2	A
v	19																							227.69	230.73	3.04	2.82	1.22	2.32	76	FR	W	1	70	2	2	A
bed	48	208.9	210.6	1.69		Imp			dark grey non-calcareous mudstone with rare black thin beds. @ 209.99m a 4 mm wide pyrite bed and @ 210.27 a 3 mm wide milky quartz vein.				t												230.73	233.78	3.05	3.05	1.3	3.00	98	FR	W	1	70	2	2	A
v	73																							233.78	236.83	3.05	2.90	1.22	2.84	93	FR	W	0				
bed	64																							236.83	239.88	3.05	2.90	1.21	2.40	79	FR	W	1	60	2	2	A
bed	66	210.6	211.3	0.74		Imp			dark grey non-calcareous mudstone with ~15% black beds with 20-30% v. fine grained pyrite 2mm - 2cm wide with width increasing down the interval. 5 mm x 1 cm lenticular pyrite clot @ 210.91 m and a 1 mm wide small quartz stringer @ 210.97 m parallel to bedding.				0.03												239.88	242.93	3.05	2.75	1.13	1.22	40	FR	W	1	60	2	2	A
bed	66	211.3	212.1	0.74		Imp			interbedded thin black mudstone (70%) and thin pyrite (30%) beds. ~ 30% 1-3 cm wide mudstone beds. Occasional "slivers" of pyrite @ 212.19 m 1mm wide quartz vein parallel to bedding. Beds show minor soft sediment deformation.				0.15												242.93	245.97	3.04	3.02	1.23	0.99	33	FR	W	1	60	2	2	A
bed	49	212.1	218.8	6.77		Imp			dark grey mudstone with ~1% 1-4 cm wide black beds containing 20% pyrite.				t											245.97	249.02	3.05	2.97	1.19	1.81	59	FR	W	1	60	2	2	A

PROPERTY: **HOLE:**

LITHOLOGY										ALT.			MINERALS				SAMPLES							Blocks			GEOTECHNICAL						JOINTS					
Struct.																											REC		RQD									
Type	Attitude	From (m)	To (m)	Interval (m)	Type	Unit	Texture	Modifier	Notes:				py				From (m)	To (m)	Interval (m)	Sample				From (m)	To (m)	Intvl. (m)	(m)	Percent	(m)	Percent	Weathering	Hardness	Frequency	Attitude	Shape	Roughness	Infilling	
bed	52	218.8	241.5	22.65		Imp			dark grey non-calcareous mudstone with rare black beds (show minor soft sediment deformation). @ 230.08m, 230.48m and 233.84m a 5 mm wide milky crack-seal quartz vein with minor quartz stringer veins near it. @ 233.93m, 236.30m and 235.47m 0.5-1 cm wide ~15% fine grained disseminated pyrite bands occur.				t											249.02	252.07	3.05	2.83	1.12	2.16	71	FR	W	1	60	2	2	A
bed	66																							252.07	255.12	3.05	2.88	1.13	1.44	47	FR	W	1	60	2	2	A
bed	61																							255.12	258.17	3.05	2.82	1.09	2.09	69	FR	W	1	60	2	2	A
bed	58																							258.17	261.21	3.04	2.87	1.1	0.96	32	FR	W	1	60	2	2	A
bed	64																							261.21	264.26	3.05	3.01	1.14	2.59	85	FR	W	1	60	2	2	A
bed	58																							264.26	267.31	3.05	2.86	1.07	2.34	77	FR	W	1	60	2	2	A
bed	67	241.5	242.6	1.16		Imp			dark grey non-calcareous mudstone heavily fractured with 3 cm thick x clay alt @ 241.48 and 242.93 m. T. thin quartz stringer veins occur @ 242.00m, 242.42m and 242.63m (dip same as bedding) @242.33 m a 3 cm wide crack-seal quartz vein with a 3 mm wide black seam in the middle ~5% mudstone included in crack-seal texture. Minor shiny (graphitic?) coating on fractures. For 3 cm above crack-seal ~2% vertical. to bedding v. thin white quartz stringer veins.				t											267.31	270.36	3.05	2.86	1.06	2.56	84	FR	W	0					
bed	69																							270.36	273.41	3.05	2.85	1.04	2.80	92	FR	W	1	60	2	2	A
bed	59	242.6	247.4	4.73		Imp			dark grey non-calcareous mudstone with t. 2-3 mm wide black beds with 15% v fine grained pyrite. Minor shiny coating on ~20% of fractures. @ 245.97m broken-up but likely driller breaks.				t											273.41	276.45	3.04	2.75	0.99	2.71	89	FR	W	1	60	2	2	A
bed	57																							276.45	279.50	3.05	3.00	1.07	2.62	86	FR	W	1	60	2	2	A
bed	44	247.4	249	1.65		Imp			dark grey non-calcareous mudstone with quartz stringers along bedding (or rarely @ 80 degrees) ~2mm wide every 10-20 cm. In last 75 cm on int. becomes interbedded with med grey fine grained sandstone (grades from no sandstone to ~ 60% sandstone).															279.50	282.55	3.05	2.63	0.93	1.85	61	FR	W	0					
bed	57	249	252.7	3.71		Imp			dark grey non-calcareous mudstone with t black beds and minor shiny coating on fractures.														282.55	285.60	3.05	2.86	1	2.54	83	FR	W	1	60	2	2	A

PROPERTY: **HOLE:**

LITHOLOGY										ALT.			MINERALS				SAMPLES							Blocks			GEOTECHNICAL						JOINTS				
Struct.																											REC		RQD								
Type	Attitude	From (m)	To (m)	Interval (m)	Type	Unit	Texture	Modifier	Notes:				py				From (m)	To (m)	Interval (m)	Sample				From (m)	To (m)	Intvl. (m)	(m)	Percent	(m)	Percent	Weathering	Hardness	Frequency	Attitude	Shape	Roughness	Infilling
bed	58	252.7	255.8	3.08		Imp			dark grey non-calcareous mudstone moderately fractured with clay coating most fractures and s clay alt on fractures. ~1% black beds @ beginning of interval and trace by the end @253.17 m a 1cm wide quartz breccia with ~15% sub-angular mudstone fragments. Breccia is parallel to bedding. @ 253.24m, 253.62m, 254.29m, and 254.34m 2-3 mm wide quartz veins occur parallel to bedding.																285.60	288.65	3.05	2.98	1.03	2.98	98	FR	W	1	60	2	2	A
bed	65																							288.65	291.69	3.04	2.90	0.99	2.40	79	FR	W	1	60	2	2	A
bed	63																							291.69	294.74	3.05	3.00	1.02	2.97	97	FR	W	1	60	2	2	A
bed	80	255.8	267.9	12.07		Imp			dark grey non-calcareous mudstone with t v thin black beds. @257.68 m a 3x2 cm med grey mudstone nodule. @260.18-260.22m a med grey gauge zone @ 50 degrees. Prior to gauge zone minor erratic milky quartz veins and shiny coatings on fractures. @261.36, 262.14 and 262.24 m 1-2 cm wide med grey/brown beds. Thin (1mm) quartz stringers parallel to bedding @260.72, 264.12 and 264.17m, and exhibit a weak comb texture.																294.74	297.79	3.05	2.65	0.89	2.07	68	FR	W	2	60	2	2	A
bed	81																							297.79	300.84	3.05	3.01	1	2.84	93	FR	W	1	60	2	2	A
bed	59																							300.84	303.89	3.05	2.95	0.97	2.52	83	FR	W	0				
bed	54																							303.89	306.93	3.04	2.93	0.95	2.93	96	FR	W	1	60	2	2	A
bed	46																							306.93	309.98	3.05	3.03	0.98	2.83	93	FR	W	1	60	2	2	A
bed	55																							309.98	313.03	3.05	2.98	0.95	2.75	90	FR	W	1	60	2	2	A
bed	59	267.9	274.1	6.25		Imp			dark grey non-calcareous mudstone with ~3% 1mm-2cm wide black beds. minor v fine pyrite disseminated. within black beds. Black beds tend to group in clusters ~75 cm long and 1.5 m apart. beds less frequent but thicker near the end of the interval. 273.52-273.92 m on continuous black bed minor 1-2mm wide quartz veins parallel to bedding every 2 m (weak comb texture) @ 273.66 m 2 such veins 1 cm apart with stringers connecting them.																313.03	316.08	3.05	2.90	0.92	2.78	91	FR	W	0				
bed	59																							316.08	319.13	3.05	3.11	0.97	2.89	95	FR	W	1	60	2	2	A
bed	59																							319.13	322.17	3.04	2.89	0.9	2.60	86	FR	W	1	70	2	2	A
bed	64																							322.17	325.22	3.05	2.90	0.89	1.96	64	FR	W	1	60	2	2	A
bed	65																							325.22	328.27	3.05	3.05	0.93	2.24	73	FR	W	1	60	2	2	A
bed	62	274.1	279.6	5.44		Imp			dark grey non-calcareous mudstone with t thin black beds. @ 277.25 and 278.52 m 3 cm and 5 cm wide med grey/brown beds/nodules; the first has a crack filled texture with black mudstone at the centre.																328.27	331.32	3.05	3.07	0.93	2.45	80	FR	W	1	60	2	2	A
bed	67																							331.32	334.37	3.05	2.91	0.87	2.66	87	FR	W	1	60	2	2	A

PROPERTY: **HOLE:**

LITHOLOGY										ALT.			MINERALS				SAMPLES							Blocks			GEOTECHNICAL						JOINTS				
Struct.																											REC		RQD								
Type	Attitude	From (m)	To (m)	Interval (m)	Type	Unit	Texture	Modifier	Notes:				py				From (m)	To (m)	Interval (m)	Sample				From (m)	To (m)	Intvl. (m)	(m)	Percent	(m)	Percent	Weathering	Hardness	Frequency	Attitude	Shape	Roughness	Infilling
bed	64																							334.37	337.42	3.05	3.00	0.89	2.91	95	FR	W	1	60	2	2	A
bed	61	279.6	289.8	10.25		Imp			dark grey non-calcareous mudstone with t black beds ~ every metre are 25 cm sections of ~20% black beds. These zones have ~1% pyrite beds as well. Many fractures have minor shiny coatings. @282.35 m a 4 mm wide glassy quartz vein parallel to bedding. @ 282.70 and 282.78 2 mm wide calcite stringers parallel to bedding with weak comb texture. @ end of the interval more intense black beds are 0.5-2 cm. 0.5 cm wide quartz calcite veins (40% glassy, round quartz in fine grained calcite matrix) @ 285.93 m and 286.30 m parallel to bedding.				t												337.42	340.46	3.04	2.85	0.84	2.51	83	FR	W	1	60	2	2	A
bed	58																							340.46	343.51	3.05	3.03	0.88	2.95	97	FR	W	0				
v	50																																				
bed	64																																				
bed	60																																				
bed	61	289.8	298.1	8.29		Imp			dark grey non-calcareous mudstone with 1-5 mm wide black beds ~every 50 cm. 2 mm wide quartz calcite veins (60% quartz 40% calcite) occur @ 289.95 (along black bed but follows one bed then is offset 4 mm to follow another bed). 292.20 m 3mm wide vein along bedding with 3 mm diameter subrounded quartz within a fine grained calcite matrix @293.75 m comb texture quartz calcite vein with quartz combs on outside and fine-grained calcite in centre of vein and a dark thin band in the very centre of the vein. @ 295.62 m a fracture @ 20 degrees coated with clay and at the top of the fracture a 2mm wide quartz vein with 3 mm of clay alt on either side of vein. @295.84 m a lenticular quartz calcite body 3 cm long 3 mm wide with ~60 % quartz and 40% calcite with glassy quartz crystals (sub-rounded) within a fine grained calcite matrix. @ 295.92 m is a >1 mm thick quartz stringer along bedding.																																				
bed	59																																				
bed	65																																				
bed	58																																				
bed	47																																				

PROPERTY: **HOLE:**

LITHOLOGY										ALT.			MINERALS				SAMPLES						Blocks			GEOTECHNICAL						JOINTS					
Struct.																										REC		RQD								
Type	Attitude	From (m)	To (m)	Interval (m)	Type	Unit	Texture	Modifier	Notes:				py				From (m)	To (m)	Interval (m)	Sample				From (m)	To (m)	Intvl. (m)	(m)	Percent	(m)	Percent	Weathering	Hardness	Frequency	Attitude	Shape	Roughness	Infilling
bed	53	298.1	306	7.92		Imp			dark grey non-calcareous mudstone with t black beds exhibiting minor soft sediment deformation. Beds tend to concentrate into sections 15-25 cm wide of 2% black beds every 1.5-2 m. @ 298.39 m a 4 mm wide comb texture qtz (30%) and calcite (70%) vein with quartz combs surrounded by fine grained calcite matrix. @303.35-303.38 m med grey/brown mudstone bed. Minor white coating on a few of the fractures.																														
bed	64																																			
bed	72																																			
bed	58																																			
bed	66																																			
bed	58	306	322.1	16.04		Imp			dark grey non-calcareous mudstone with minor black beds 1-5 mm wide (near end of interval all beds are 1 mm or less). @306.17m glassy 3mm thick quartz vein with t calcite and @306.42 m 1 mm thick quartz vein with t calcite. @ 309.92 m a 1 mm wide pyrite bed. @309.98-310.04 m a med brown/grey bed. @313.43 m a 4mm wide quartz breccia? with ~10% small angular mudstone pieces (>>1 mm diameter) appears to follow bedding then flatten out to 80 degrees, only goes half way across core. 2 and 3 cm wide med brown/grey beds occur @ 305.34 and 317.09m. @ 317.62 and 321.15 m 3 and 5 cm wide brown/grey mudstone nodules. From 319.90-319.93 m crack seal quartz vein with glassy quartz nodules (~40%) cemented by fine grained quartz incorporating ~ 15% mudstone.																														
bed	59																																			
bed	62																																			
bed	66																																			
bed	58																																			
bed	61																																			
bed	65																																			
bed	61																																			
bed	50	322.1	331.3	9.25		Imp			dark grey non-calcareous mudstone (top 30 cm slightly sandy) with t thin black beds at top of the interval steadily increasing in amount until 20% of rock at end of int. (though still <3% until last 75 cm). Beds are 0.5-3 cm wide at end of the interval. From 326.34 to 326.41 m med grey sandy bed.																														
bed	64																																			
bed	54																																			

PROPERTY: **HOLE:**

LITHOLOGY										ALT.			MINERALS				SAMPLES						Blocks			GEOTECHNICAL						JOINTS				
Struct.																										REC		RQD								
Type	Attitude	From (m)	To (m)	Interval (m)	Type	Unit	Texture	Modifier	Notes:				py				From (m)	To (m)	Interval (m)	Sample				From (m)	To (m)	Intvl. (m)	(m)	Percent	(m)	Percent	Weathering	Hardness	Frequency	Attitude	Shape	Roughness	Infilling
bed	68																																			
bed	50																																			
bed	58	331.3	343.5	12.19		Imp			dark grey non-calcareous mudstone with 40 cm long sections with ~ 7% black interbeds (up to 10% pyrite) every 1.5 m until 340.46 m; after that just dark grey mudstone. 3-5 cm med grey/brown band/nodules occur @ 333.95m, 336.78 m, 339.04m and 340.78 m. From 332.10-332.17 m quartz calcite veining with a 3 cm vein of 5 mm on top and 2 mm on bottom calcite with ~10% glassy quartz eyes and centre is occupied by 0.5 cm zones of quartz veinlets replacing black bands with a rip-up texture. Several rip-ups occur ~ 1.5cm x 4mm subangular and area between rip-ups is zone of quartz replacing black band Bottom part of vein zone (i.e. @ 332.17 m is 4 mm wide calcite vein-all parallel to bedding. Shows evidence of soft sediment deformation.																																	
bed	50																																			
bed	64																																			
bed	64																																			
bed	68																																			
									EOH																												