60001137

Mining District File Summary Sheet

DISTRICT	Rosebud
DIST_NO	4010
COUNTY If different from written on document	Pershing
TITLE If not obvious	Rosebud Drill Hole File - Hole No. RS-D340-99
AUTHOR	D. Mackerrow; C. Ballew; R. Vance; K. Allen
DATE OF DOC(S)	1999
MULTI_DIST Y / (N?) Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Project; Rosebud Mining Co. LLC Hecla Mining Co.; Newmont Gold Co. Newmont Exploration Ltd.
COMMODITY If not obvious	gold; silver
NOTES	Drill log; geology; assay; photographs; total depth 960' receipt; handwritten notes; downhole camera images down hole survey 82p. 5 down hole camera images

Keep docs at about 250 pages if no oversized maps attached
(for every 1 oversized page (>11x17) with text reduce
the amount of pages by ~25)

SS: DP 5/13/08
Initials Date
DB: mah
Initials Date
SCANNED: NB
Initials Date

Revised: 1/22/08

RS-D340-99

6000 1137 4010

340

6000 1137

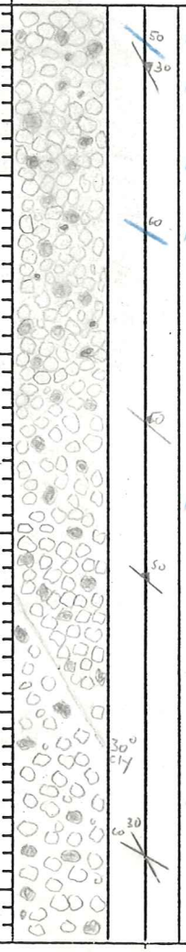
- quartz, chalcedony, silicification
- faults, fractures
- FeOx
- sulfide
- calcite, carbonate
- argillization, white clays
- propylitization
- potassic alteration
- chlorite, chloritic clays

Barite

Hecla
MINING COMPANY

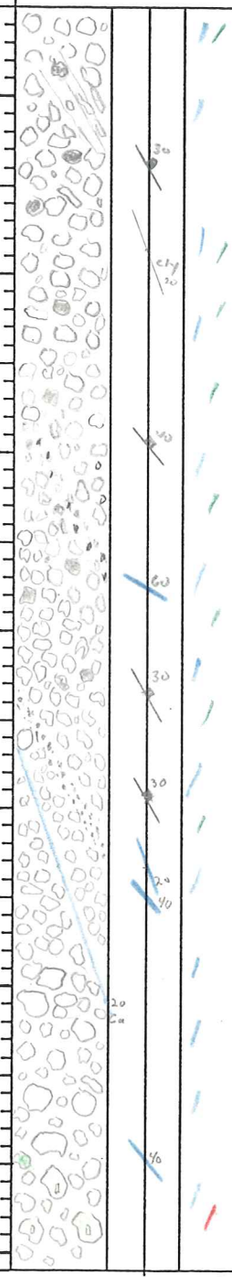
ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	RS-D340-99	LOCATION	N. Decline Sec # 1350	REMARKS	Target: E2/N2
PAGE 1 OF 14		NORTHING			Feeder 24
DATE	2/22/99	EASTING			
LOGGED BY	DG Mackerrow	ELEVATION			
SCALE	1"=10'	AZIMUTH	S 55°E		
TOTAL DEPTH	960	INCLINATION	-33°		

LITH	OX/RE	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
Tos	R ↓	0-201.2 "TOS" EPICLASTIC CONGLOMERATE Pale gray green in color moderately well sorted epiclastic. Average clast size is ≈ 3/8". Clast can reach 1". Clast are supported by a chloritized clay matrix. Irregular seams of clay are present at high angle to core axis. Calcite veinlets and veins to ½" thick. Calcite also seem to form rind on some clast. Clast consist of laminated Volcanic. Black A.L.S sediments <.1%. Clast are subrounded in shape. 52-64 Increase brown clay matrix. 53-56 Polished brown clay on high angle fracture.	10 20 30 40 50		Hole was collared in 30° tca fracture zone from 0-2' 37.7'-½' Brown clay seam dipping 30° tca there are weak slicken sides at 60° tca 47-49 Multiple fracture orientations 60° & 30° tca	Calcite veins and veinlets present. Chloritized volcanic clay matrix

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	A
0	5					
5	9					
9	14					
14	19					
19	24					
24	29					
29	34					
34	39					
39	44					
44	49					
49	54					

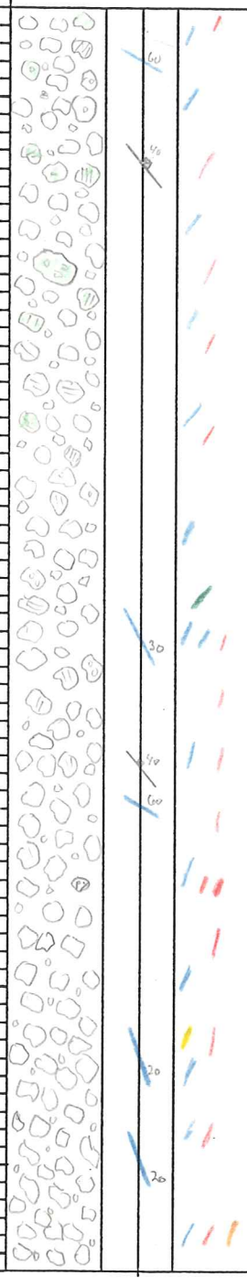
HOLE NUMBER RS-0340-99 PAGE 2 OF 14

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
Tos ↓	R ↓	0-201.2 "Tos" Epiclastic Conglomerate Moderately well sorted conglomerate continues Increased brown clay matrix between 53-64'. 71' - Black clay between clast 93-94.2 Decreased grain size to granule sized sandstone 99 Grain size increase and conglomerate is poorly sorted with clast up to 1" dia. 99.2 - 114.5 Color changes to a "hematite" brown color 114.5 - 143 Color changes again to Pale green color. Most clast are Pale green with laminations and Phenocryst. Matrix of conglomerate is brown in brown in color. The green color is from the original Propylitic alteration	50 60 70 80 90 100 110 120		63.5' high angle (20° tca) Fracture with brown clay, Slicken sides that are 0° tca Possible bedding foliation of 30° tca 98.3 - 20° tca Fracture with ½" calcite vein. Shear has a waxy appearence to clay matrix of congl.	Calcite continues as veins and Fracture coating. Very dark Forest Green matrix from probable chloritic alteration First appearence of Pyrite at 117 Disseminated crystals <1.5% Pyrite is also Found as cluster on calcite filled fractures

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
49	54				
54	59				
59	64				
64	69				
69	74				
74	79				
79	84				
84	89				
89	94				
94	99.2				
99.2	104				
104	109				
109	114.5				
114.5	119				

HOLE NUMBER RS-D340-99 PAGE 3 OF 14

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
TOS	R	0–201.2 "TOS" CONGLOMERATE Pale green epiclastic sediment brown volcanic clay matrix that Partially supports clast 143 – 154.6 color change to "Hematite" brown, 1" A.I.S. Fragment at 151.5 143 – 144 waxy clay seam 0° tca	120 130 140 150 160 170 180 190		Calcite veins steepen to 20° to core axis 178–185	Calcite veins and Trace pyrite continue 134–142 ¼" dia. pyrite masses present. Some masses are associated with clast and others with matrix. Pyrite is not present in the brown colored Conglomerate 154.9 calcite vein 154.9 pyrite returns 168 1" diameter pyrite mass QTZ with calcite in high angle tca vein at 178 188 - Light argillization of clast has taken Place	119 124 129 134 139 143 149 154.6 159 164 169 174 179 184	124 129 134 139 143 149 154.6 159 164 169 174 179 184 189					

HOLE NUMBER RS-D340-99 PAGE 4 OF 14

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
TOS ↓	R ↓	0-201.2 "TOS" CONGLOMERATE Continued as above	190, 200			Disseminated pyrite continues <1% Calcite veins continue
		201.2-268.4 "TOS" LAPPILLI TUFF Medium to dark green course lithic tuff. Matrix is a dark green volcanic clay that supports the clasts. The finer clast (course S.S.) have a more apparent foliation that is high angle to the core axis 229-247.8 Very dark green chloritic clays 215-228 clast size is variable with finer fractions showing 10° TCA foliation. Foliation of clast is parralel to high angle fractures Pima 236.8 236-244 Epiclastic course sandstone interbeds ≈ 1 ft thick	210, 220, 230, 240, 250, 260	40, 60, 40, 20, 60, 20, 10, 60, 60, 80, 20, 20, 60, 20	201.2 contact with lappilli tuff of TOS. Contact 40° TCA with weak slicks orient 40° TCA Low level argillization begins at contact at 201.2 207.5 - 60° TCA fracture with oblique slip slicks 60° to dip axis 218.5-20° TCA fracture with oblique slip slicks at 30° to dip axis 236-247.8 Increased fracturing mostly low angle with last shear at 247.8 high angle 20° TCA shear. ½" zone of ground material	201.2 Chloritic alteration in tuff varys from strong to moderate. Clay matrix most altered. 227-228 calcite vein swarm max width .5" First vn clay possible for Pima at 236.8 Pyrite is forming "brassy" masses with crystals up to 1/16"

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	
189	194					
194	197.6					
197.6	201.2					
201.2	204					
204	209					
209	214					
214	219					
219	224					
224	228.5					
228.5	234					
234	239					
239	244					
244	247.8					
247.8	254					
254	259					

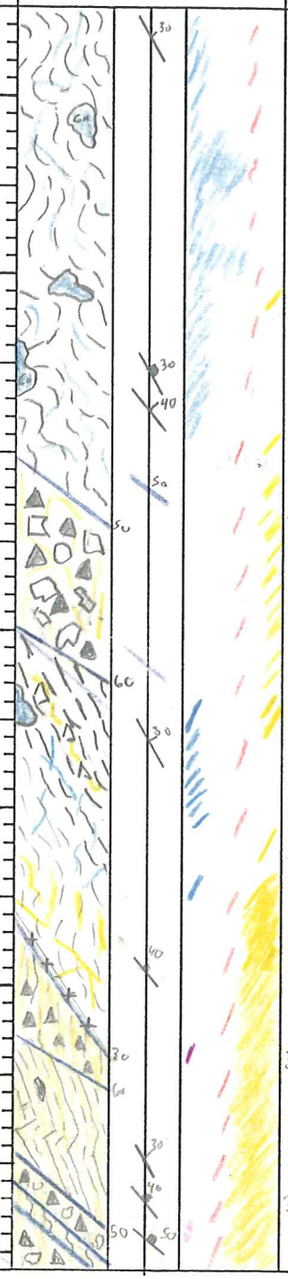
HOLE NUMBER RS-D340-99 PAGE 5 OF 14

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
TOS	R	201.2–268.4 "TOS": LAPPILLI TUFFS Coarse tuffs and epiclastic sandstones continue.	260		265–268.4 shear texture INCREASE to the contact 267.5 @ 60° Fracture with Py veinon hanging wall of contact Fault 268 – CONTACT ORIENTATION Lost during drilling. Probable dip was 60°TCA 267.8–268.4 Highly sheared with pyrite veinlet oriented at 60° TCA 268.4–275.5 moderately Brecciated and sheared Bedding orientations below the fault are in all orientation	265.8–268.4 – disseminated Pyrite is ≈3% Pyrite forms veins up to 1" between 267.8–268.4
ALS.	R.	268.4–960.0 ALS. SHALE AND MINOR SILTSTONE INTERBEDS Black graphitic shale with some minor siltstone interbeds, Bedding partings are smooth and graphitic, Calcite veins are plentiful, filling gashes and crackle Breccia matrixes, Beddings is highly disrupted below the contact The rocks are variably calcareous 310.5–311.5 Gray shale bed on edge of core <1" thick. This could be a thin tuff bed. Phillitic texture varys through the core.	270 280 290 300 310 320 330			267–268.4 – Silicification and Silicified clast in highly argillized gouge 268.4–268 Shale is argillized with spotty silicification 275 – Heavy calcite flooding begins. Crackle bxa matrix are healed by calcite Pyrite has locally accumulated along bedding laminia.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
259	265.8				
265.8	267.8				
267.8	268.4				
268.4	271.5				
271.5	275.5				
275.5	279				
279	283.2				
283.2	288				
288	294				
294	299				
299	304				
304	309				
309	314				
314	319				
319	323				
323	329				

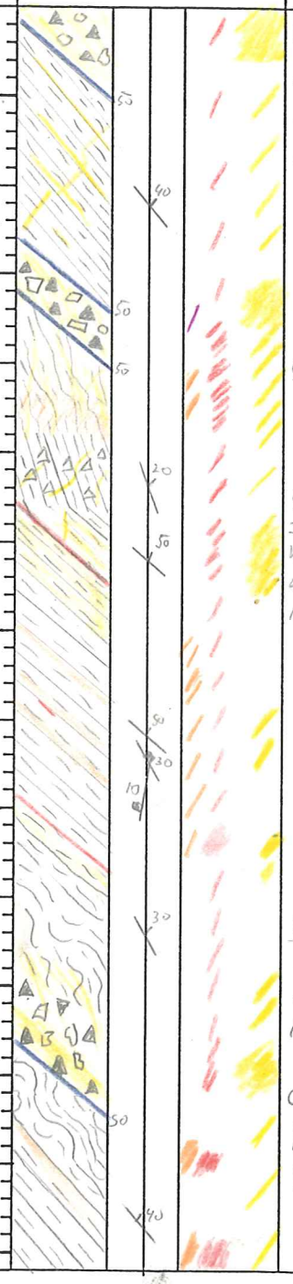
HOLE NUMBER RS-D340-99 PAGE 6 OF 14

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
A.L.S.	R	268.4-960 A.L.S. SHALE AND MINOR SILTSTONE INTERBEDS Dark gray to black shale continues. Graphitic coatings on bedding parting still present. Bedding is highly disrupted. Small calcite heal breccia present. Rock was calcreous up to 354 where silicification associated with a breccia zone begins 383.3 Intrusive averaging ≈ 1" thick dip is 30° tcr. Small discontinuous intrusive occurances continue to 392 382-403.5' Core is highly vugged and from disolution 395.5 Kink fold in the beds	330 340 350 360 370 380 390 400		Highly disrupted bedding continues 357.2-366.2 CRACKLE BXA with low expansion and minimal rotation of clast 369-370 - weak CRACKLE Breccia 383.3-387 silica healed Breccia and disrupted bedding 397-403 QTZ healed Breccia	Graphitic bedding parting continue 337-338.7 calcite flooding 346-347 Trace of silicification Decalcification from introduced silica may begin at Breccia zone at 378 354-371 Silicification and QTZ healed breccia. Silicification is variable through the breccia 369-370 silica healed breccia 384-387 Trace of kaolinite in a vug and on a fracture 382 - First observed Marcasite blades in a vug. 388.5 - First Barite in vugs

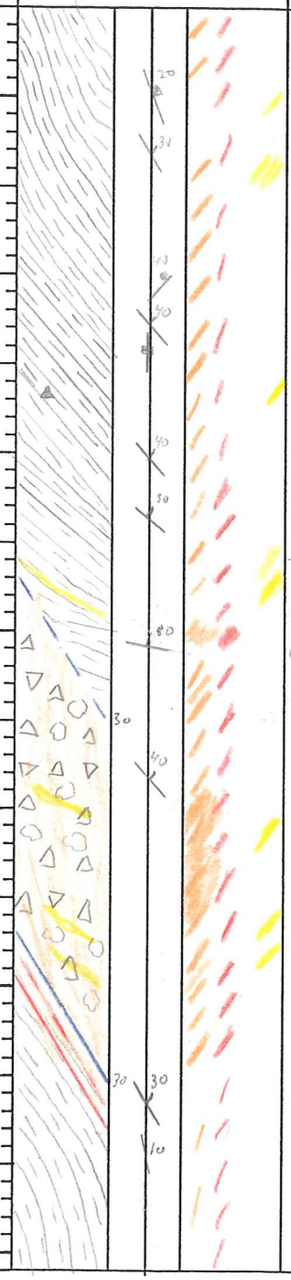
ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
329	334				
334	339				
339	344				
344	349				
349	354				
354	357				
357	361.6				
361.6	366.2				
366.2	369				
369	371				
371	376.4				
376.4	380.6				
380.6	383.1				
383.1	386				
386	389				
389	394				
394	396.3				
396.3	399				

HOLE NUMBER RS-D340-99 PAGE 7 OF 14

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
ALS.	R	268.4 - 960 A.L.S. SHALE WITH MINOR MINOR SILTSTONE INTERBEDS Dark gray to black shale continues with minor interbedded siltstone. From 404-414 4 feet of core was lost. Sample 407.7 to 414 consisted of 1.5' of ground core. Sample at 414-415 is a spacer to seperate out the breccia at 415-418. Green tint to clay numbers at 414.2	400 410 420 430 440 450 460 470		Breccia zone ends at 403', Bedding of Shale is at 40° to Drillers lost 4' From 407.7 to 414' 415 to 418 mosaic Breccia healed by QTZ 424 - 426 Internal rubble breccia 426 - 427 crackle Breccia 452.5 - 460 highly fractured zone with brecciated foot wall surface Open gash fracture Perpendicular to bedding at 468	Very faint blue tint on qtz at 401' Not enough to identify 418-423 Decalcified soft shale with pyrite and pyrite coated marcasite 429.5 - 1/2" bed of Pyrite. 429 - 433.7 silicification with disolution vugs. 435.4 - 446 Decalcification and Argillization Pyrite as locally replaced bedding (ie 445.5) minor traces of white clay present 458.4 white qtz mass 459.5 Pyrite veinlets 468.6 - 470 strong decalcification and introduced fine py	399 403 407.7 414 415 418 423 428 433.2 435.4 440.5 446 450.3 454 459 464 468.6 472.4	403 407.7 414 415 418 423 428 433.2 435.4 440.5 446 450.3 454 459 464 468.6 472.4					

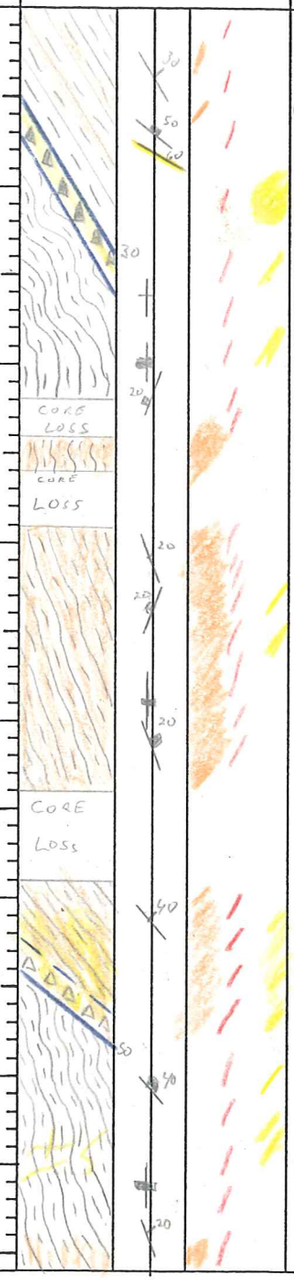
HOLE NUMBER RS-D340-99 PAGE 8 OF 14

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
A.L.S. ↓	R ↓	268.4 - 960 A.L.S. SHALE WITH MINOR INTERBEDS OF SILTSTONE Black shale continues fewer narrow beds of siltstone. Most of the shale is decalcified enought to absorb moisture placed on it. The stronger the decalcification the greater the fine disseminated pyrite. Pima 482.4 475 - 479.4 silty section is partially silicified From 530 - 539 Lost 5 of 9 feet 530 - 554 bedding and steepend to vertical as it approaches intrusives	470 480 490 500 510 520 530 540		492 - Narrow crackle Bxu 4" wide 506.5 - 526 Heavy fracture and breccia zone Core is mostly rubble. 525-527 1/4" to 1/2" beds of pyrite are broken By	Decalcification continues at low to medium levels Pima sample at 482.4 in soft moist white clay 496.5 - 530 STRONG DECALCIFICATION 502-502.4 silicification 506 - 554 Traces of white clay on fractures 529 - 554 Decalcification decreases and "spongy" texture ends but rock is still not calcareous Graphitic bedding coating increased between 530 - 542	468.4 472.4 475 479.4 481.5 487.5 491.4 496.5 500 504 506 511 516.5 521.9 527 530 534 539	472.4 475 479.4 481.5 487.5 491.4 496.5 500 504 506 511 516.5 521.9 527 530 534 539					

HOLE NUMBER _____ PAGE 9 OF 14

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
ALS.	R	268.4-960 ALS. SHALE WITH INTERBEDDED SILTSTONE Black shale continues Locally traces of phillitic texture seen 554-559 Phosphoritic Intrusive Ply phenos and QTL veins 549-554 Sample loss will effect sample 1" piece of qtz in remains 561-564.5 Was been ground to sand and homogenized 564.5-567.3 FELSIC INTRUSIVE (Bmb Equiv) Series of small intrusive 569-570.4 Fine grained to finely porphoritic. Dissenimate 576-576.3 Pyrite is present to ≈5% Intrusive is argillized Contacts range from 50 to 20°. This looks like first foot of intrusive was lost 583-584 C.L. 587-591.6 Argillized porphoritic felsic intrusives 591.6-595 Narrow shale and intrusives zones	540 550 560 570 580 590 600 610	CORE LOSS	Steep bedding between 527 and 454. Dips were 10-30° tca 585.5-587 Rubble breccia with 1" qtz vein at footwall contact. Drillers claimed a void at this contact but it was probably highly altered intrusive 591.6-594 CRACKLE Breccia 597-599 CRACKLE BXA 609-610 RUBBLE BXA	Devitrified shale continues, shale will absorb moisture 549-554 QTL VN Fragment were only recovered 579-581 Sample represented by .5' of core 584-591.7 Highly Argillized shale and intrusives 608-611 Elevated Carbon	539 542 544 546 549 554 559 561 562.5 564.5 567.3 569 570.4 574 576 579 581 583 NO SAMPLE 584 587 589 591.6 595.5 599 604 609	542 544 546 549 554 559 561 562.5 564.5 567.3 569 570.4 574 576 579 581 583 SAMPLE 587 589 591.6 595.5 599 604 609 614					

HOLE NUMBER RS-D340-99 PAGE 10 OF 14

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
ALS.	R	268.4-960 ALS. SHALE with SILTY INTERBEDS Fine black shale continues Locally a light phillitic texture can be seen, 634-665.8 Very Black decalcified shale fractured in multiple orientation and does not hold to gether, 634 - 664 is hanging wall altered carbon rich shale, Fault breccia/shear is from 664-665.8 with shattered qtz veins in it, Lower contact is 632-634 CORE LOSS 636-639 CORE LOSS 654-659 CORE LOSS	610 620 630 640 650 660 670 680		619-621.6 Silica healed rubble bxa. clast are angular, Multiple fracture orientation from 639-665.8. 0° TCA 20° TCA 60° TCA 664-665.5 milled fault breccia. Fragments of qtz vein. 676- Oblique slip on fractures 40° tca	608-611 high carbon and decalcification 634-665.8 Heavy carbon and decalcification Rock is very black in color 661.5-665.8 has been silicified then shattered and argillized 673-675.5 QTZ VEINS up to 2" thick

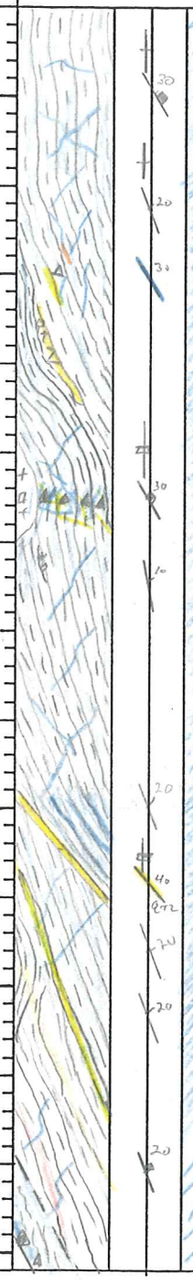
ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
609	614				
614	619				
619	621.6				
621.6	624				
624	629				
629	632				
CORE	LOSS				
634	636				
CORE	LOSS	NS			
CORE	LOSS	NS			
639	641				
641	646				
646	649				
649	652				
652	654				
CORE	LOSS	NS			
CORE	LOSS	NS			
659	661				
661	664				
664	665.8				
665.8	669				
669	673				
673	675.5				
675.5	679				
679	684				

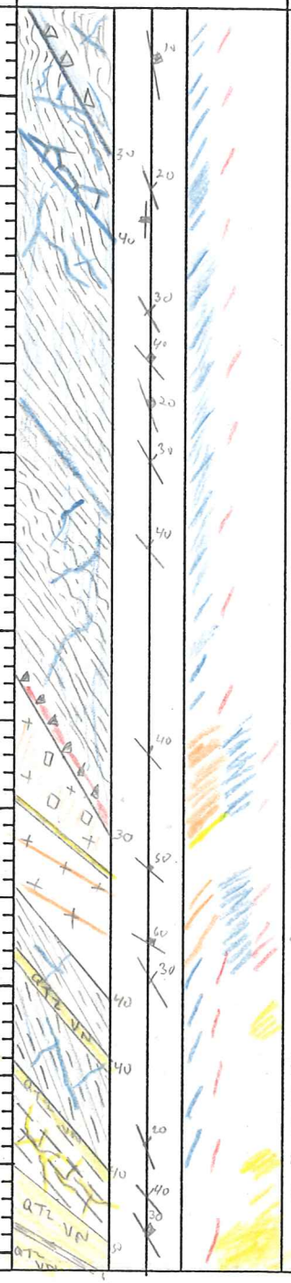
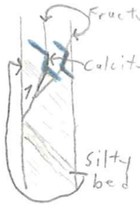
HOLE NUMBER RS-D340-99 PAGE 11 OF 14

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
ALS.	R	268.4-960 A.L.S. SHALE Gray to black shale continues locally phyllitic and locally volcanically derived silty beds 692-695 - 1 foot of core loss associated with bull qtz vein 707-709.8 Felsic Intrusive upper contact lost but lower contact was sharp and 30° TCA Pyrite veinlets present in intrusive 718.2-722.8 Vertical bedding with calcite rich contact with intrusive, shale has a higher silt content to grain size 722.8-723.4 Argillized intrusive 723.4-730.8 Interbedded shale and siltstone, Calcite and QTZ veins with calcareous siltstone 738.1-745.9 Porphyritic Felsic? INTRUSIVE Plag. Phenocrysts 1-3 mm. Weak flow banding at 30° TCA	680 690 700 710 720 730 740 750	BULL QTZ Pimo 743	10 30 20 40 20 30 30 50 20 80 30 50 30	700.7-707 Brecciated hanging wall to felsic intrusion 709.8-715 Footwall Breccia zone Locally Breccia foliation is 60° TCA 729.1-730.8 QTZ healed breccia Core is splitting on graphitic 0° TCA bedding Oblique slip of 50° TCA	Disseminated Py and occasional veinlet contact 689.4-695 White bull qtz vein with inclusions of shale 696-696.4 white QTZ VN 696.6-696.8 white qtz VN 705-707 silicification of shale on the contacts with intrusive 709.8-715.3 silicification on lower contact and fault zone 718.2-730.8 Calcite veins and calcareous shale 722 Trace of Marcasite 727-730.8 Graphitic bedding planes 729.1-730.8 Silicified shale 729.6-730.8 silicified 731.6 Marcasite at int contact 738.1-745.9 Much weak argillic alteration almost fresh 743 Pimo white clay in fracture	679 684 689.4 692 695 700 705 707 709.8 715 718.2 722.8 723.4 725 729.1 731.2 733.2 738.1 742.5 745.9	684 689.4 692 695 700 705 707 709.8 715 718.2 722.8 723.4 725 729.1 731.5 733.2 738.1 742.5 745.9 750					

HOLE NUMBER RS-0340-99 PAGE 12 OF 14

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
ALS.	R	268.4 - 960 ALS. SHALE AND SILTY INTERBEDS: Continued Dark gray to black Shale. Bedding orientation 0 to 10° to core axis. Bedding partings has a graphitic coating. Locally Shale has a weak phillitic texture (Pino)	750		769- 1/8" offsets of bedding along carbon filled dialations	Calcareous shale and siltstone with calcite veinlets. Rock is fresh looking with just the traces of metamorphism disseminated Py ≈ 1%	750	755				
			760				755	760				
							760	765				
						Pino sample 765.2 White clay in fracture	765	770				
		779.3 779.5 Trace of intrusive lost to drilling. Intrusive Trace at 780.6 less than 1" thick	770			767- 769.5 Heavy QTZ vein with thickness of ≤ 4'	770	775				
					777-779.5 QTZ and Calcite healed stockwork/ breccia. Oblique slip of 60° TCA on the fracture		775	780				
			780			755.5-760 Trace of oxidation of surface. Seen as a faint red tint.	780	785				
		795 - 813 Very high calcite vein and highly calcareous silty shale	790		Fractures are along graphite coated bedding.		785	790				
						787- Sulfide accumulation in 1/4" mass.	790	795				
		803 - 804' Core cut the nose of small local fold	800		784.5 30° TCA oblique slips on fracture	796.8- 797.3 white QTZ vein	795	800				
							800	805				
						805-806.2 QTZ/Calcite vein	805	810				
			810			811 - 820 calcareous Rx of core decreases	810	815				
			820			818 1/16" bedded pyrite From 819 Rock is highly calcareous	815	819				

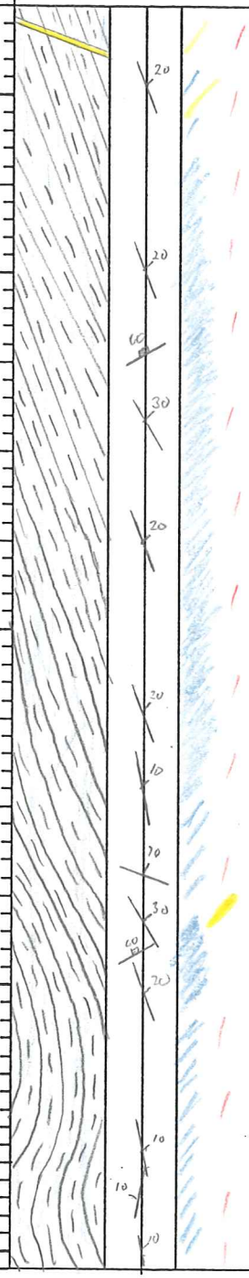
HOLE NUMBER RS-D340-99 PAGE 13 OF 14

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
ALS.	R	268.4-960 ALS. SHALE with silty interbeds weakly phillitic dark gray shale with graphitic bedding partings 862-872.6 Phophyritic Intrusive white clays (kaolinite/Dickite) on fractures through the intrusive, silicified inclusion of shale at 866 to 866.2. Below 866.2 the intrusive becomes fine grained and not porphyritic. Fine disseminated Pyrite increase from 866-872.6 Pina 865 There is a foliation to the intrusives at 872.3 that is 30° tca. Intrusive is weakly Calcareous and has calcite on very fine fractures	820 830 840 850 860 870 880 890		819-823.3 Sheared zone flooded with calcite. calcite cemented Crackle bxu at base. 10° tca fracture with oblique slip 827-829 calcite healed fractures approaching Crackle Bxu in intensity  835.5 offset silty bed on thin fracture at 80° tca offset was .5" with an oblique rotation vector 831-834 Fracture zone with fracture at 0° Tca 875.4-876 QTZ VN 882-883 QTZ VN 883-887.3 QTZ Stockwork 887.3-889.3 QTZ VN 889.7-891 QTZ VN	830.5- 1/4" calcite crystals formed in open fracture 823.3-831 weak to moderate calcite stockwork 865 Pina white clay on fractures 862-872.6 - Argillization is weak in the intrusive. Contacts are calcareous. Pyrite increase in the last 2' of intrusives

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
819	823.3				
823.3	827.4				
827.4	831				
831	835				
835	840				
840	845				
845	850				
850	854				
854	859				
859	862				
862	865.9				
865.9	869				
869	872.6				
872.6	875.4				
875.4	880				
880	882.9				
882.9	887.2				
887.2	892.2				

HOLE NUMBER RS-10340-99 PAGE 14 OF 14

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
ALS.	R	268.4-960 A.L.S. SHALE with silty Interbeds Dark gray shale with local phillitic texture. Tuff derived silty beds are present Shale is generally moderate to highly calcareous	890, 900, 910, 920, 930, 940, 950, 960		Calcite/QTZ stockwork zone 881-892.2 955- small open fold in nearly vertical bedding	Disseminated Pyrite continues at low levels through out the core. Locally pyrite forms along bedding planes Graphitic bedding parting continues

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
887.2	892.2				
892.2	895				
895	900				
900	905				
905	910				
910	915				
915	920				
920	925				
925	929				
929	934				
934	940				
940	945				
945	950				
950	955				
955	960				

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 2-22-99 LOGGED BY: D.G MACHERROW PAGE 1 OF 20

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
0	5	82	100	74										
5	9	100	95	87										
9	14	100	100	76										
14	19	100	100	86										
19	24	100	96	90										
24	29	100	104	81										
29	34	100	92	82										
34	39	72	96	66										
39	49	83	100	60										
49	55	63	90	25										
55	64	87	99	34										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 2-22-99 LOGGED BY: D.G. Muckerrow PAGE 2 OF 20

DRILL RUN		SOLID CORE	TOTAL CORE	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO	RECOVERY (%)	RECOVERY (%)		DOWNHOLE DEPTH	PONT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
64	74	100	100	100										
74	84	100	100	94										
84	94	100	94	78										
94	104	86	103	62										
104	114	96	99	83										
114	124	100	99	85										
124	134	100	98	85										
134	144	100	98	88										
144	149	100	114	56										
149	159	100	100	88										
159	169	100	101	81										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D 340-99 DATE: 2-23-99 LOGGED BY: D.G. MacKerrow PAGE 3 OF 20

DRILL RUN		SOLID CORE	TOTAL CORE	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO	RECOVERY (%)	RECOVERY (%)		DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
169	179	100	98	95										
179	184	100	104	100										
184	194	100	99	89										
194	204	100	100	92										
204	214	99	95	90										
214	224	100	100	81										
224	234	100	99	82										
234	244	99	100	44										
244	254	99	100	61										
254	264	89	100	42										
264	271.5	42	93	22										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 2-24-99 LOGGED BY: D.G. MACHERROW PAGE 4 OF 20

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
271.5	279	59	76	21										
279	288	58	100	28										
288	294	100	100	73										
294	304	99	100	54										
304	314	60	99	36										
314	323	66	99	43										
323	329	68	98	43										
329	339	100	100	65										
339	344	98	102	28										
344	349	100	104	61										
349	359	100	100	66										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 2-24-99 LOGGED BY: D.G. Mackerrow PAGE 5 OF 20

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
359	369	100	100	69										
369	378	98	93	67										
378	384	100	100	91										
384	394	77	96	95										
394	404	54	98	70										
404	414	37	54	7										
414	424	84	95	45										
424	434	89	100	7.5										
434	440	46	90	9										
440	446	37	100	17										
446	454	81	100	52										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 2-26-99 LOGGED BY: D.G. Mackerrow PAGE 6 OF 20

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
454	464	20	88	55										
464	470	71	93	35										
470	477	65	93	24										
477	481.5	53	100	49										
481.5	487.5	0	42	0										
487.5	494	73	104	40										
494	500	30	95	23										
500	504	15	92	20										
504	511	11	98	0										
511	513	0	95	0										
513	516.5	0	63	0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 2-27-99 LOGGED BY: D.G. Mackenzie PAGE 7 OF 20

DRILL RUN		SOLID CORE	TOTAL CORE	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO	RECOVERY (%)	RECOVERY (%)		DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
516.5	520	0	71	0										
520	523	0	100	0										
523	527	17	97	12										
527	530	0	67	0										
530	534	0	50	0										
534	539	0	50	0										
539	542	0	100	0										
542	544	25	80	0										
544	546	0	76	0										
546	549	0	10	0										
549	554	12	34	8										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 2-27-99 LOGGED BY: D.G. Mackerron PAGE 8 OF 20

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
554	559	0	40	0										
559	559.5	0	100	0										
559.5	561	0	100	0										
561	562.5	0	100	0										
562.5	564	0	100	0										
564	566	50	115	30										
566	569	60	120	13										
569	574	24	78	0										
574	576	0	100	0										
576	579	0	87	50										
579	581	0	20	0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-DJ40-99 DATE: 2-27-99 LOGGED BY: D.G. Mackerron PAGE 9 OF 20

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
581	583	0	25	0										
583	584	0	0	0										
584	587	0	53	0										
587	589	90	90	0										
589	594	64	98	0										
594	599	22	90	28										
599	604	100	100	40										
604	609	68	94	68										
609	611	0	100	0										
611	614	0	100	0										
614	619	52	100	52										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 2-27-99 LOGGED BY: D. G. MacKerrow PAGE 10 OF 20

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
619	624	86	100	58										
624	629	38	72	8										
629	632	0	27	0										
632	634	0	0	0										
634	636	0	80	0										
636	638	0	0	0										
638	639	0	0	0										
639	641	0	40	0										
641	644	0	33	0										
644	646	0	40	0										
646	649	0	67	0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 2-27-99 LOGGED BY: D.G. MacHerrow. PAGE 11 OF 20

DRILL RUN		SOLID CORE	TOTAL CORE	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO	RECOVERY (%)	RECOVERY (%)		DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
649	650	0	100	0										
650	652	0	75	0										
652	654	0	70	0										
654	656	0	0	0										
656	659	0	0	0										
659	661	0	100	0										
661	664	0	67	0										
664	669	48	84	24										
669	674	54	92	28										
674	678	47	95	25										
678	679	0	70	0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 2-27-99 LOGGED BY: D.G. MacKenzie PAGE 12 OF 20

DRILL RUN		SOLID CORE	TOTAL CORE	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO	RECOVERY (%)	RECOVERY (%)		DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
679	681	0	95	0										
681	684	0	70	0										
684	689	100	98	36										
689	692	0	90	0										
692	695	0	67	20										
695	700	26	94	10										
700	705	72	92	40										
705	707.5	36	100	16										
707.5	710	56	100	44										
710	715	100	100	30										
715	720	88	100	64										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 2-28-99 LOGGED BY: D.G. Mackenzie PAGE 13 OF 20

DRILL RUN		SOLID CORE	TOTAL CORE	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO	RECOVERY (%)	RECOVERY (%)		DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
720	723	100	80	93										
723	725	100	100	65										
725	730	84	100	67										
730	732	75	100	60										
732	735	60	100	60										
735	740	96	100	74										
740	745	100	100	40										
745	749.5	9	100	0										
749.5	750	0	100	0										
750	751.5	0	100	0										
751.5	755	48	105	37										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 3-1-99 LOGGED BY: D.G. MacHerrow PAGE 14 OF 20

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
755	758	36	100	13										
758	760	0	100	0										
760	762	30	100	0										
762	765	40	100	20										
765	770	60	100	34										
770	775	80	100	44										
775	780	58	100	24										
780	785	22	100	40										
785	790	66	100	44										
790	795	100	100	86										
795	800	100	100	34										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 3-1-99 LOGGED BY: D.G. MacHarg PAGE 15 OF 20

DRILL RUN		SOLID CORE	TOTAL CORE	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO	RECOVERY (%)	RECOVERY (%)		DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
800	805	100	100	66										
805	810	66	100	36										
810	815	30	100	0										
815	820	46	100	18										
820	825	42	100	52										
825	830	100	100	76										
830	834	52	100	40										
834	835	100	100	40										
835	840	100	100	68										
840	845	84	100	12										
845	850	100	100	74										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 3-1-99 LOGGED BY: D.G. Mackerron PAGE 16 OF 20

DRILL RUN		SOLID CORE	TOTAL CORE	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO	RECOVERY (%)	RECOVERY (%)		DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
850	854	100	100	60										
854	859	78	100	54										
859	864	80	100	48										
864	869	100	100	36										
869	874	68	100	40										
874	877	23	90	0										
877	880	100	83	76										
880	885	92	100	50										
885	890	100	100	76										
890	895	73	100	24										
895	900	87	100	26										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 3-8-99 LOGGED BY: D.G. MacKerron PAGE 17 OF 20

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
900	905	84	100	68										
905	906.5	53	100	0										
906.5	908	33	100	0										
908	910	50	100	20										
915	915	50	100	22										
915	916.5	61	66	0										
916.5	918.5	0	100	0										
918.5	919	0	100	0										
919	920	0	100	50										
920	924	50	100	0										
924	925	100	100	0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 3-8-99 LOGGED BY: D.G. Mackerrow PAGE 18 OF 20

DRILL RUN		SOLID CORE	TOTAL CORE	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO	RECOVERY (%)	RECOVERY (%)		DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
925	929	50	100	25										
929	934	54	100	28										
934	935	60	170	0										
935	937.5	0	88	24										
937.5	940	66	100	0										
940	943.5	40	100	14										
943.5	945	87	100	83										
945	950	32	100	20										
950	953	0	100	0										
953	955	45	100	36										
955	956.5	0	100	0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 3-8-99 LOGGED BY: D. G. MacKerron PAGE 19 OF 20

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
956.5	960	0	100	0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-D340-99 DATE: 2-27-99 LOGGED BY: D.G. MacKarrow PAGE 11 OF 20

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
649	650	0	100	0										
650	652	0	75	0										
652	654	0	70	0										
654	656	0	0	0										
656	659	0	0	0										
659	661	0	100	0										
661	664	0	67	0										
664	669	48	84	24										
669	674	54	92	28										
674	678	47	95	25										
678	679	0	70	0										

Newmont Gold Core Form

Hole# RS-D340-99 **Az/Incl** -33 **Page** 1 of 9

Logged by D.G. Mackessor **Area** **Total Depth**

Date 3-8-99 **Coords** **Contractor**

Footage	% Rec	RQD	Litho: Formation	Litho: Rock type	Litho: Color	Au oz/st	Ag oz/st	Graphic	Structure: Attitudes	Structure: fault	Structure: breccia	Structure: vein	Structure: gouge	Comments	Alteration: Silic	Alteration: argillic	Alteration: clay	Alteration: prop	Alteration: Sericite	Alteration: Chlorite	Met.: FEOX/Hox	Met.: CO3	Met.: Sulfide	Mineralogy: Pyrite	Mineralogy: Marcasite	Mineralogy: Calc/Dolo	Mineralogy: Clay
			Tos	Sd.	GRN									'Tos' Spilestic Sedimen-	0	0	0	0	0	0	0	0	0	0	0	1	0
10																											
20																											
30																											
40																											
50																				1							
60																											
70																				0							
80																											
90																											
100																											

Newmont Gold Core Form

Hole# RS-D340-99 **Az/Incl** _____ **Page** 2 of 9

Logged by _____ **Area** _____ **Total Depth** _____

Date _____ **Coords** _____ **Contractor** _____

Footage	% Rec	RQD	Litho: Formation	Litho: Rock type	Litho: Color	Au oz/st	Ag oz/st	Graphic	Structure: Attitudes	Structure: fault	Structure: breccia	Structure: vein	Structure: gouge	Comments	Alteration: Silic	Alteration: argillic	Alteration: clay	Alteration: prop	Alteration: Sericite	Alteration: Chlorite	Met.: FEOX/Hem	Met.: CO3	Met.: Sulfide	Mineralogy: Pyrite	Mineralogy: Marcasite	Mineralogy: Calc/Dolo	Mineralogy: Clay
100			TOS	Sed.	GRN									Tos Epiclastic Sediment	0	0	0	0	0	0	1	0	0	0	0	1	0
110																					0			1			
120																											
130																											
140																					1			0			
150																					0			0			
160																											
170																											
180																											
190																1											
200																0											

Newmont Gold Core Form

Hole# RS-D340-99 **Logged by** _____ **Date** _____

Area _____ **Coords** _____

Az/Incl _____ **Total Depth** _____ **Contractor** _____

Footage	% Rec	RQD	Litho: Formation	Litho: Rock type	Litho: Color	Au oz/st	Ag oz/st	Graphic	Structure: Attitudes	Structure: fault	Structure: breccia	Structure: vein	Structure: gouge	Comments	Alteration: Silic	Alteration: argillic	Alteration: clay	Alteration: prop	Alteration: Sericite	Alteration: Chlorite		Met.: FEOX/Hem	Met.: CO3	Met.: Sulfide	Mineralogy: Pyrite	Mineralogy: Marcasite	Mineralogy: Calc/Dolo	Mineralogy: Clay	
200			Tos	Tuff	Grn									"Tos" Lappilli Tuff	0	0 / 1	0	0	0	1		0	0	0	1	0	1	0	
210																													
220																													
230																												Tr / 0	
240																													
250																													
260																									2				
270					DK GRAY				60					268.4-960 ALS Shale / Phillitic Shale and Siltstone.	2 / 1	3 / 1				0			2		1			3	
280																													
290															0	0													
300																													

Newmont Gold Core Form

Hole# RS-0340-99 **Az/Incl** _____ **Page** 4 of 9

Logged by _____ **Area** _____ **Total Depth** _____

Date _____ **Coords** _____ **Contractor** _____

Footage	% Rec	RQD	Litho: Formation	Litho: Rock type	Litho: Color	Au oz/st	Ag oz/st	Graphic	Structure: Attitudes	Structure: fault	Structure: breccia	Structure: vein	Structure: gouge	Comments	Alteration: Silic	Alteration: argillic	Alteration: clay	Alteration: prop	Alteration: Sericite	Alteration: Chlorite	Alteration: CaCO3	Met.: FEOX/Hem	Met.: CO3	Met.: Sulfide	Mineralogy: Pyrite	Mineralogy: Marcasite	Mineralogy: Calc/Dolo	Mineralogy: Clay	Mineralogy: Ba SO4
300			ACS	Shale										Shale / Phillitic Shale and Siltstone	0	0	0	0	0	0		0	2	0	1	0	3	0	
310																													
320																													
330																													
340																											0		
350															0														
360															1								0						
370															0												1		
380															2							1				0	0		
390																													0
400																													

Newmont Gold Core Form

Hole# RS-D340-99 **Logged by** _____ **Date** _____

Area _____ **Coords** _____

Az/Incl _____ **Total Depth** _____ **Contractor** _____

Footage	% Rec	RQD	Litho: Formation	Litho: Rock type	Litho: Color	Au oz/st	Ag oz/st	Graphic	Structure: Attitudes	Structure: fault	Structure: breccia	Structure: vein	Structure: gouge	Comments	Alteration: Silic	Alteration: argillic	Alteration: clay	Alteration: prop	Alteration: Sericite	Alteration: Chlorite	Alteration: Caco3	Met.: FEOX	Met.: CO3	Mineralogy: Sulfide	Mineralogy: Pyrite	Mineralogy: Marcasite	Mineralogy: Calc/Dolo	Mineralogy: Clay
400			ALS		Blk									Shale / Phillitic Shale and Siltstone	2	0	0	0	0	0	1	0	0	0	1	0	0	0
															1													
410																												
															2													
420															1													
																1												
																0												
430																												
															0	1												
440															1													
															0													
															1	0												
															0													
450																												
															1													
460															0													
470															1	1												
480															0													
																											Tr	
																											0	
490																												
																					3							
500																												

Newmont Gold Core Form

Hole# RS-D340-99 **Area** _____ **Az/Incl** _____ **Total Depth** _____ **Contractor** _____

Logged by _____ **Date** _____ **Coords** _____

Footage	% Rec	RQD	Litho: Formation	Litho: Rock type	Litho: Color	Au oz/st	Ag oz/st	Graphic	Structure: Attitudes	Structure: fault	Structure: breccia	Structure: vein	Structure: gouge	Comments	Alteration: Silic	Alteration: argillic	Alteration: clay	Alteration: prop	Alteration: Sericite	Alteration: Chlorite	Alteration: ~CaCO3	Met.: FEOX/Hem	Met.: CO3	Met.: Sulfide	Mineralogy: Pyrite	Mineralogy: Marcasite	Mineralogy: Calc/Dolo	Mineralogy: Clay
500			ALS		Blk									Shale / Phillitic Shale and Siltstone	0	1	0	0	0	0	3	0	0	0	1	0	0	0
															1													
															0													
																2												Tr
																1												
510																												
														Bud marker bed INT.														
														554-559 INT.														
520														564.5-567.3 INT														
														569-570.4 INT														
														576-576.3 INT														
530																					2							
														587-591.6 INT														
														591.6-595 multi narrow INT														
																Tr												
540																0												
																												0
550																												
																1												
560																												
570																												
580																												
																2										2		
															1													
590																												
																1										1		
600																0												

Newmont Gold Core Form

Hole# RS-D340-99 **Area** _____ **Az/Incl** _____ **Total Depth** _____ **Contractor** _____

Logged by _____ **Date** _____ **Coords** _____

Footage	% Rec	RQD	Litho: Formation	Litho: Rock type	Litho: Color	Au oz/st	Ag oz/st	Graphic	Structure: Attitudes	Structure: fault	Structure: breccia	Structure: vein	Structure: gouge	Comments	Alteration: Silic	Alteration: argillic	Alteration: clay	Alteration: prop	Alteration: Sericite	Alteration: Chlorite	Alteration: % CO_2	Met.: FEOX	Met.: CO3	Met.: Sulfide	Mineralogy: Pyrite	Mineralogy: Marcasite	Mineralogy: Calc/Dolo	Mineralogy: Clay
600			Acs		Black									Shale / Phyllitic Shale and Siltstone	1		0	0	0	0	2	0	0	0	1	0	0	0
																2					3				2			
610															0						2							
																0					3				1			
620																					2							
																1												
630																3									2			
640																												
650																												
660															1													
																2									1			
670																												
															0	1					1							
680																												
690															3													
															1													
700																					0							

Newmont Gold Core Form

Hole# RS-D340-99 **Area** _____ **Az/Incl** _____ **Total Depth** _____ **Contractor** _____ **Logged by** _____ **Date** _____ **Coords** _____

Footage	% Rec	RQD	Litho: Formation	Litho: Rock type	Litho: Color	Au oz/st	Ag oz/st	Graphic	Structure: Attitudes	Structure: fault	Structure: breccia	Structure: vein	Structure: gouge	Comments	Alteration: Silic	Alteration: argillic	Alteration: clay	Alteration: prop	Alteration: Sericite	Alteration: Chlorite	Alteration: -CaCO3	Met.: FEOX/Hem	Met.: CO3	Met.: Sulfide	Mineralogy: Pyrite	Mineralogy: Marcasite	Mineralogy: Calc/Dolo	Mineralogy: Clay
700			ALS		Blk									Shale / Phillite Shale and siltstone	2	0	0	0	0	0					1	0	0	0
																1												
710																0												
															0													
720																					0		2				1	
														707-709.8 INT.														
730														722.8-723.4 INT.	1													
															0													
														738.1 745.9 INT.														
740															1	1												
															0													
																0												
750																												
760																												
770																												
780																												
790																												
800																												

Newmont Gold Core Form

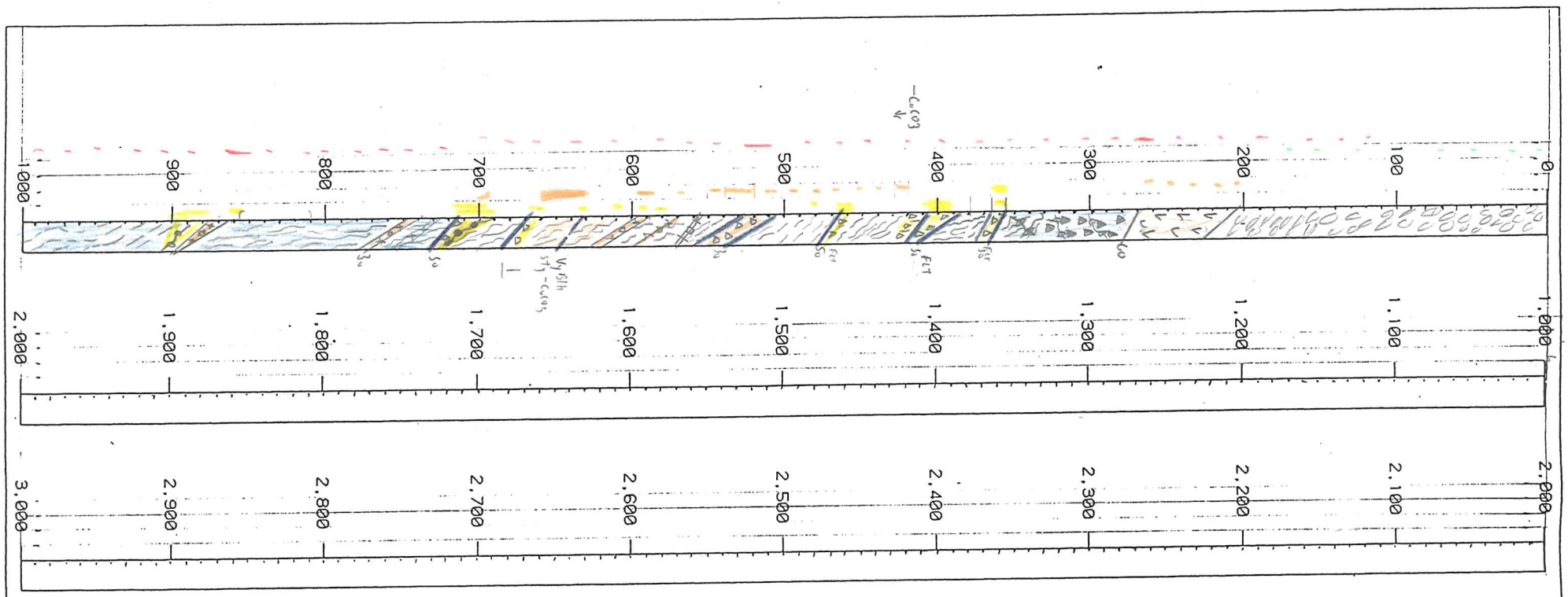
Hole# RS-10340-99
Logged by
Date
Area
Coords
Az/Incl
Total Depth
Contractor

Footage	% Rec	RQD	Litho: Formation	Litho: Rock type	Litho: Color	Au oz/st	Ag oz/st	Graphic	Structure: Attitudes	Structure: fault	Structure: breccia	Structure: vein	Structure: gouge	Comments	Alteration: Silic	Alteration: argillic	Alteration: clay	Alteration: prop	Alteration: Sericite	Alteration: Chlorite	Met.: FEOX (Iron)	Met.: CO3	Met.: Sulfide	Mineralogy: Pyrite	Mineralogy: Marcasite	Mineralogy: Calc/Dolo	Mineralogy: Clay
800			AGS											Shale / Phyllitic Shale and Siltstone	0	0	0	0	0	0	0	2	0	1	0	1	0
																										2	
810																											
820														862-872.6 INT													
830																											
840																											
850																											
860																2											1
870																0											0
880															1							0				1	
															2												
890															0												
900																						1					

Newmont Gold Core Form

Hole# RS-D340-99
Logged by
Date
Area
Coords
Az/Incl
Total Depth
Contractor

Footage	% Rec	RQD	Litho: Formation	Litho: Rock type	Litho: Color	Au oz/st	Ag oz/st	Graphic	Structure: Attitudes	Structure: fault	Structure: breccia	Structure: vein	Structure: gouge	Comments	Alteration: Silic	Alteration: argillic	Alteration: clay	Alteration: prop	Alteration: Sericite	Alteration: Chlorite	Met.: FEOX	Met.: CO3	Mineralogy: Sulfide	Mineralogy: Pyrite	Mineralogy: Marcasite	Mineralogy: Calc/Dolo	Mineralogy: Clay
900			ACS	Shale	DK GRAY									Shale / Phillitic Shale and Siltstone	0	0	0	0	0	0	0	1	0	1	0	1	0
910																											
920																											
930																											
940															1 / 0												
950																											
960														TD 960													



LITHOLOGY

- PLAT/FLOW
- MASSIVE AT/FLUO
- LST-
- PMBX -
- TOS/Bud Epiclastics
- BMB - Rhyolitic Porphyry
- RHYOLITE - DOZER
- ALS - PHYLLITES

TEXTURES

- LITHIC FRAGMENTS
- CRYSTALS
- LAPILLI
- AMYGDULES
- SPHERULITE
- SHARDS

STRUCTURES

- BRECCIA
- FAULT
- CLAY OR GOUGE
- FRACTURE ZONE
- VEINS Qtz
- VEINLETS
- VEINS CALC

CONTACTS

- LOST, GRADATIONAL OR INFERRED
- 80 SHARP (WITH ANGLE TO CORE)
- WAVY
- ROUGH OR JAGGED

PYRITIZATION
CHLORITIZATION
ARGILLIZATION
SILICIFICATION
GRAPHIC LOG

LOCATION ON GRID: 1350 section	FINAL COLLAR COORDINATES	START 2-16-99	FINISH 3-4-99	LOGGED BY D. Mackerrow
LAB American	NORTH	HOLE TYPE CORE	SURVEYED TO	
JOB #	EAST	BEARING S 55 E	ANGLE -33	T. D. 960
DRILLING COMPANY	ELEV / DRILLER Pat Bu-Ford			

The Rosebud Mining Company LLC

PAGE 1 OF

HOLE # RS-D340-99

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

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Fax
(702) 738-2594

Mazatlan Office
Telephone/Fax
011-52-69-170035

Other Offices
Lima, Peru
Santiago, Chile
Mendoza, Argentina

Company: Newmont Gold Co

Address:

City Winnemucca State NV Zip 89445

Telephone Number: ( ) Fax Number: ( )

Project Name: Rosebud Exploration Purchase Order Number:

Date Submitted: 3-11-99 Number of Samples: 177 + 2 pulps

RESULTS REPORTED IN: ppm [ ] ppb [ ] opt [ ]

SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
RS-D 340-99	Core	FA 30 Au, Ag D210
		AAL 1/2 ICP + Se
		(composited as shown on
		attachment)
Standards: 399.0'B, 636.0'B	Pulp	Au Ag only
(NO ICP)		
636.0'B		
MS-3 (RMG1) 399.0'B — PEEL HERE — MS-1 (RMG1) RS-D-340-99		

COARSE REJECTS (Normally Discarded After 60 Days)

[ ] Return COD after analysis complete

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month

[X] Return COD after one month

RESULTS AND INVOICES TO BE SENT TO:

Invoice to:

Charlotte Ballen
Winnemucca

Results to:

Randy Vance Newmont Gold Co
Winnemucca

Kurt Allen Rosebud Gold
Mine Winnemucca

Comments:

Newmont Rosebud standard Prep

SAMPLE DISPATCH COPY

NEWMONT EXPLORATION LIMITED — DRILL HOLE SUMMARY

Project: Rosebud Location: Section 1350 Drill Hole No.: RS-D340-99

State: NV Co.: Pershing T.: R.: S.:

Purpose: Exploration Results:

Date Started: 2-16-99 Date Finished: 3-4-99

Grid System: Northing: Easting: Elevation: ≈ 4385

Collar Az/Inc.: SSSE / -33 Drill Site: North Decline Sect # 1350 Total Depth: 960

Geologist(s): D. Mackerrow Log Date(s): Laboratory: American

HOLE CONSTRUCTION AND HISTORY CASING (INTERVAL): 620

From	To	Hole Type/Size	Started	Completed	Contractor
		/			Longyear
		/			
		/			
		/			

LITHOLOGIC SUMMARY				ALTERATION/	SIGNIFICANT ASSAYS				
From	To	Formation	Rock Type	MINERALIZATION	From	To	Width	Au oz/st	Cutoff
0	201.2	TOS	Epiclastic						
201.2	268.4	TOS	TUFF						
268.4	960	ALS	Shale/Phillite						

DOWNHOLE SURVEYS		
Directional	Date:	
Other		
Depth (ft)	Azimuth	Inclination

Water Table Depth:

Water Flow Rate:

COMMENTS

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

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(702) 738-2594

Mazatlan Office
Telephone/Fax
011-52-69-170035

Other Offices
Lima, Peru
Santiago, Chile
Mendoza, Argentina

Company: Newmont Gold Co

Address:

City Winnemucca State NV Zip 89445

Telephone Number: ( ) Fax Number: ( )

Project Name: Rosebud Exploration Purchase Order Number:

Date Submitted: 3-11-99 Number of Samples: 177 + 2 pulps

RESULTS REPORTED IN: ppm [ ] ppb [ ] opt [ ]

SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
RS-D 340-99	Core	FA 30 Au, Ag D210
		AAL 1/2 ICP + Se
		(composited as shown on
		attachment)
Standards: 399.0'B, 636.0'B	Pulp	Au Ag only
(NO ICP)		
MS-3 (RMG1) 399.0'B / PEEL HERE / 636.0'B MS-1 (RMG1) RS-D-340-99		

COARSE REJECTS (Normally Discarded After 60 Days)

[ ] Return COD after analysis complete

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month

[X] Return COD after one month

RESULTS AND INVOICES TO BE SENT TO:

Invoice to:

Charlotte Ballen
Winnemucca

Results to:

Randy Vance Newmont Gold Co
Winnemucca

Kurt Allen Rosebud Gold
Mine Winnemucca

Comments:

Newmont Rosebud standard Prep

SAMPLE DISPATCH COPY

RS-D340-99

Depth From	To	Interval	Au	Ag	ICP	Composite Interval	Sample Number	Checks
0	5	5	x	x			1	
44	49	5	x	x			2	
59	64	5	x	x			3	
164	169	5	x	x	x	20	4	
214	219	5	x	x			5	
244	247.8	3.8	x	x			6	
247.8	254	6.2	x	x			7	
254	259	5	x	x			8	
259	265.8	6.8	x	x	x	21.8	9	
265.8	267.8	2	x	x			10	
267.8	268.4	0.6	x	x			11	
268.4	271.5	3.1	x	x			12	
271.5	275.5	4	x	x			13	
275.5	279	3.5	x	x			14	
279	283.2	4.2	x	x			15	
283.2	288	4.8	x	x	x	22.2	16	
288	294	6	x	x			17	
294	299	5	x	x			18	
299	304	5	x	x			19	
304	309	5	x	x		21	20	
309	314	5	x	x			21	
314	319	5	x	x			22	
319	323	4	x	x			23	
323	329	6	x	x	x	20	24	
329	334	5	x	x			25	
334	339	5	x	x			26	
339	344	5	x	x			27	
344	349	5	x	x	x	20	28	
349	354	5	x	x			29	
354	357	3	x	x	x	8	30	
357	361.6	4.6	x	x			31	
361.6	366.2	4.6	x	x			32	
366.2	369	2.8	x	x			33	
369	371	2	x	x			34	
371	376.4	5.4	x	x	x	19.4	35	
376.4	380.6	4.2	x	x			36	
380.6	389	8.4	x	x			37	
389	394	5	x	x			38	
394	396.3	2.3	x	x			39	
396.3	399	2.7	x	x	x	18.4	40	399B
403	407.7	4.7	x	x			41	
407.7	414	6.3	x	x			42	
414	415	1	x	x			43	
415	418	3	x	x			44	
418	423	5	x	x	x	20	45	

383.1
386
399.403?

423	428	5	x	x			46
428	433.2	5.2	x	x			47
433.2	435.4	2.2	x	x			48
435.4	440.5	5.1	x	x	x	17.5	49
440.5	446	5.5	x	x			50
446	450.3	4.3	x	x			51
450.3	454	3.7	x	x			52
454	459	5	x	x	x	18.5	53
459	464	5	x	x			54
464	468.6	4.6	x	x			55
468.6	472.4	3.8	x	x			56
472.4	475	2.6	x	x			57
475	479.4	4.4	x	x	x	20.4	58
479.4	481.5	2.1	x	x			59
481.5	487.5	6	x	x			60
487.5	491.5	4	x	x			61
491.5	496.5	5	x	x			62
496.5	500	3.5	x	x	x	20.6	63
500	504	4	x	x			64
504	506	2	x	x			65
506	511	5	x	x			66
511	516.5	5.5	x	x			67
516.5	521.9	5.4	x	x	x	21.9	68
521.9	527	5.1	x	x			69
527	530	3	x	x			70
530	534	4	x	x			71
534	539	5	x	x			72
539	542	3	x	x	x	20.1	73
542	544	2	x	x			74
544	546	2	x	x			75
546	549	3	x	x			76
549	554	5	x	x	x	12	77
554	559	5	x	x	x	5	78
559	561	2	x	x			79
561	562.5	1.5	x	x			80
562.5	564.2	1.7	x	x	x	5.2	81
564.5	567.3	2.8	x	x	x	2.8	82
567.3	569	1.7	x	x			83
569	570.4	1.4	x	x			84
570.4	574	3.6	x	x			85
574	576	2	x	x			86
576	579	3	x	x			87
579	581	2	x	x			88
581	583	2	x	x	x	15.7	89
583	584	1		NO SAMPLE			
584	587	3	x	x			90
587	589	2	x	x			91
589	591.6	2.6	x	x			92
591.6	595.5	3.9	x	x			93
595.5	599	3.5	x	x	x	15	94

599	604	5	x	x			95
604	609	5	x	x			96
609	614	5	x	x			97
614	619	5	x	x	x	20	98
619	621.6	2.6	x	x			99
621.6	624	2.4	x	x			100
624	629	5	x	x			101
629	632	3	x	x	x	13	102
632	634	2		NO SAMPLE			
634	636	2	x	x			103 636B
636	639	3		NO SAMPLE			
639	641	2	x	x			104
641	646	5	x	x			105
646	649	3	x	x			106
649	652	3	x	x			107
652	654	2	x	x	x	15	108
654	659	5		NO SAMPLE			
659	661	2	x	x			105
661	664	3	x	x			106
664	665.8	1.8	x	x			107
665.8	669	3.2	x	x			108
669	673	4	x	x			109
673	675.5	2.5	x	x			110
675.5	679	3.5	x	x	x	20	111
679	684	5	x	x			112
684	689.4	5.4	x	x			113
689.4	692	2.6	x	x	x	13	114
692	695	3	x	x			115
695	700	5	x	x			116
700	705	5	x	x			117
705	707	2	x	x	x	15	118
707	709.8	2.8	x	x	x	2.8	119
709.8	715	5.2	x	x			120
715	718.2	3.2	x	x			121
718.2	722.8	4.6	x	x	x	13	122
722.8	723.4	0.6	x	x			123
723.4	725	1.6	x	x			124
725	729.1	4.1	x	x			125
729.1	731.2	2.1	x	x			126
731.2	733.2	2	x	x			127
733.2	738.1	4.9	x	x	x	14.7	128
738.1	742.5	4.4	x	x			129
742.5	745.9	3.4	x	x	x	7.8	130
745.9	750	4.1	x	x			131
750	755	5	x	x			132
755	760	5	x	x			133
760	765	5	x	x	x	19.1	134

765	770	5	x	x			135
770	775	5	x	x			136
775	780	5	x	x			137
780	785	5	x	x	x	20	138
785	790	5	x	x			139
790	795	5	x	x			140
795	800	5	x	x			141
800	805	5	x	x	x	20	142
805	810	5	x	x			143
810	815	5	x	x			144
815	819	4	x	x			145
819	823.3	4.3	x	x	x	18.3	146
823.3	827.4	4.1	x	x			147
827.4	831	3.6	x	x			148
831	835	4	x	x			149
835	840	5	x	x			150
840	845	5	x	x	x	21.7	151
845	850	5	x	x			152
850	854	4	x	x			153
854	859	5	x	x			154
859	862	3	x	x			155
862	865.9	3.9	x	x	x	20.9	156
865.9	869	3.1	x	x			157
869	872.6	3.6	x	x			158
872.6	875.4	2.8	x	x			159
875.4	880	4.6	x	x			160
880	882.9	2.9	x	x			161
882.9	887.2	4.3	x	x	x	21.3	162
887.2	892.2	5	x	x			163
892.2	895	2.8	x	x			164
895	900	5	x	x			165
900	905	5	x	x			166
905	910	5	x	x	x	22.8	167
910	915	5	x	x			168
915	920	5	x	x			169
920	925	5	x	x			170
925	929	4	x	x	x	19	171
929	934	5	x	x			172
934	940	6	x	x			173
940	945	5	x	x	x	16	174
945	950	5	x	x			175
950	955	5	x	x			176
955	960	5	x	x	x	15	177

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ANALYSIS REPORT SP052794

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

NEWMONT GOLD COMPANY

COPIES TO : C. BALLEW

: R. VANCE

:

:

CLIENT REFERENCE No: RS-D340-99 RECEIVED : 12 MAR 1999

No. SAMPLES : 186 REPORTED : 15 MAR 1999

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

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ANALYSIS REPORT SP052794

American Assay Laboratories

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PROJECT : ROSEBUD
REFERENCE : RS-D340-99

REPORTED : 15 MAR 1999

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-D340-99 0-5	32	27	<0.001	<0.001	<0.5	<0.02
RS-D340-99 44-49	<5		<0.001		<0.5	<0.02
RS-D340-99 59-64	14		<0.001		<0.5	<0.02
RS-D340-99 164-169	34		<0.001		<0.5	<0.02
RS-D340-99 214-219	<5		<0.001		<0.5	<0.02
RS-D340-99 244.0-247.8	<5		<0.001		0.9	0.03
RS-D340-99 247.8-254.0	8		<0.001		<0.5	<0.02
RS-D340-99 254-259	<5		<0.001		<0.5	<0.02
RS-D340-99 259.0-265.8	<5		<0.001		0.7	0.02
RS-D340-99 265.8-267.8	28		<0.001		2.6	0.08
RS-D340-99 267.8-268.4	40		0.001		1.5	0.04
RS-D340-99 268.4-271.5	78	88	0.002	0.003	2.6	0.08
RS-D340-99 271.5-275.5	54		0.002		1.3	0.04
RS-D340-99 275.5-279.0	138		0.004		2.0	0.06
RS-D340-99 279.0-283.2	15		<0.001		1.5	0.04
RS-D340-99 283.2-288.0	18		<0.001		2.0	0.06
RS-D340-99 288-294	12		<0.001		1.9	0.06
RS-D340-99 294-299	12		<0.001		2.4	0.07
RS-D340-99 299-304	6		<0.001		1.6	0.05
RS-D340-99 304-309	6		<0.001		1.8	0.05
RS-D340-99 309-314	<5		<0.001		2.1	0.06
RS-D340-99 314-319	9		<0.001		1.7	0.05
RS-D340-99 319-323	<5		<0.001		1.1	0.03
RS-D340-99 323-329	<5		<0.001		1.3	0.04
RS-D340-99 329-334	<5		<0.001		1.3	0.04

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-D340-99 334-339	<5		<0.001		1.4	0.04
RS-D340-99 339-344	27		<0.001		1.1	0.03
RS-D340-99 344-349	36		0.001		1.7	0.05
RS-D340-99 349-354	18		<0.001		1.9	0.06
RS-D340-99 354-357	225		0.007		5.1	0.15
RS-D340-99 357.0-361.6	152		0.004		8.4	0.25
RS-D340-99 361.6-366.2	497		0.014		1.0	0.03
RS-D340-99 366.2-369.0	24		<0.001		1.9	0.06
RS-D340-99 369-371	380	330	0.011	0.010	1.2	0.04
RS-D340-99 371.0-376.4	12		<0.001		1.5	0.04
RS-D340-99 376.4-380.6	12		<0.001		1.5	0.04
RS-D340-99 380.6-383.1	36		0.001		1.8	0.05
RS-D340-99 383.1-386.0	250		0.007		1.3	0.04
RS-D340-99 386-389	48		0.001		0.8	0.02
RS-D340-99 389-394	24		<0.001		2.5	0.07
RS-D340-99 394.0-396.3	189		0.006		2.7	0.08
RS-D340-99 396.3-399.0	225		0.007		3.1	0.09
RS-D340-99 396.3-399.0B	986		0.029		0.7	0.02
RS-D340-99 399-403	66		0.002		2.4	0.07
RS-D340-99 403.0-407.7	123		0.004		5.0	0.15
RS-D340-99 407.7-414.0	339		0.010		3.7	0.11
RS-D340-99 414-415	51		0.001		2.5	0.07
RS-D340-99 415-418	21		<0.001		1.5	0.04
RS-D340-99 418-423	51		0.001		3.8	0.11
RS-D340-99 423-428	99		0.003		2.9	0.08

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-D340-99 428.0-433.2	702		0.020		4.6	0.13
RS-D340-99 433.2-435.4	45		0.001		2.7	0.08
RS-D340-99 435.4-440.5	9	12	<0.001	<0.001	1.9	0.06
RS-D340-99 440.5-446.0	18		<0.001		2.5	0.07
RS-D340-99 446.0-450.3	<5		<0.001		1.1	0.03
RS-D340-99 450.3-454.0	6		<0.001		1.8	0.05
RS-D340-99 454-459	48	51	0.001	0.001	1.8	0.05
RS-D340-99 459-464	64		0.002		5.3	0.15
RS-D340-99 464.0-468.6	51		0.001		3.6	0.11
RS-D340-99 468.4-472.4	21		<0.001		2.5	0.07
RS-D340-99 472.4-475.0	213	153	0.006	0.004	2.9	0.08
RS-D340-99 475.0-479.4	18		<0.001		1.1	0.03
RS-D340-99 479.4-481.5	24		<0.001		2.2	0.06
RS-D340-99 481.5-487.5	21		<0.001		2.8	0.08
RS-D340-99 487.5-491.4	24		<0.001		2.6	0.08
RS-D340-99 491.5-496.5	45		0.001		3.0	0.09
RS-D340-99 496.5-500.0	9		<0.001		1.9	0.06
RS-D340-99 500-504	30		<0.001		2.8	0.08
RS-D340-99 504-506	18		<0.001		1.7	0.05
RS-D340-99 506-511	9		<0.001		2.3	0.07
RS-D340-99 511.0-516.5	<5		<0.001		0.8	0.02
RS-D340-99 516.5-521.9	<5		<0.001		1.1	0.03
RS-D340-99 521.9-527.0	12		<0.001		3.0	0.09
RS-D340-99 527-530	<5		<0.001		1.1	0.03
RS-D340-99 530-534	<5		<0.001		0.7	0.02

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ANALYSIS REPORT SP052794

American Assay Laboratories

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REFERENCE : RS-D340-99

REPORTED : 15 MAR 1999

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-D340-99 534-539	48	52	0.001	0.002	1.5	0.04
RS-D340-99 539-542	<5		<0.001		1.1	0.03
RS-D340-99 542-544	54		0.002		2.4	0.07
RS-D340-99 544-546	45		0.001		4.9	0.14
RS-D340-99 546-549	<5		<0.001		<0.5	<0.02
RS-D340-99 549-554	<5		<0.001		<0.5	<0.02
RS-D340-99 554-559	<5		<0.001		<0.5	<0.02
RS-D340-99 559-561	6		<0.001		0.7	0.02
RS-D340-99 561.0-562.5	27		<0.001		2.2	0.06
RS-D340-99 562.5-564.5	75	64	0.002	0.002	2.7	0.08
RS-D340-99 564.5-567.3	<5		<0.001		<0.5	<0.02
RS-D340-99 567.3-569.0	<5		<0.001		<0.5	<0.02
RS-D340-99 569.0-570.4	<5		<0.001		<0.5	<0.02
RS-D340-99 570.4-574.0	14		<0.001		0.6	<0.02
RS-D340-99 574-576	24		<0.001		0.7	0.02
RS-D340-99 576-579	<5		<0.001		0.7	0.02
RS-D340-99 579-581	351	279	0.010	0.008	3.4	0.10
RS-D340-99 581-583	108		0.003		1.0	0.03
RS-D340-99 583-584		SAMPLE NOT RECEIVED				
RS-D340-99 584-587	<5		<0.001		1.5	0.04
RS-D340-99 587-589	<5		<0.001		1.7	0.05
RS-D340-99 589.0-591.6	6		<0.001		1.5	0.04
RS-D340-99 591.6-595.5	129		0.004		2.3	0.07
RS-D340-99 595.5-599.0	12		<0.001		1.7	0.05
RS-D340-99 599-604	93		0.003		2.7	0.08

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American Assay Laboratories

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-D340-99 604-609	93	110	0.003	0.003	3.0	0.09
RS-D340-99 609-614	6		<0.001		3.4	0.10
RS-D340-99 614-619	9		<0.001		3.1	0.09
RS-D340-99 619.0-621.6	18		<0.001		2.6	0.08
RS-D340-99 621.6-624.0	27		<0.001		2.0	0.06
RS-D340-99 624-629	129		0.004		2.2	0.06
RS-D340-99 629-632	231		0.007		3.3	0.10
RS-D340-99 632-634		SAMPLE NOT RECEIVED				
RS-D340-99 634-636	<5		<0.001		0.6	<0.02
RS-D340-99 634-636B	96	100	0.003	0.003	<0.5	<0.02
RS-D340-99 636-639		SAMPLE NOT RECEIVED				
RS-D340-99 639-641	9		<0.001		0.6	<0.02
RS-D340-99 641-646	12		<0.001		0.5	<0.02
RS-D340-99 646-649	<5		<0.001		0.9	0.03
RS-D340-99 649-652	6		<0.001		1.5	0.04
RS-D340-99 652-654	<5		<0.001		1.7	0.05
RS-D340-99 654-659		SAMPLE NOT RECEIVED				
RS-D340-99 659-661	9		<0.001		2.4	0.07
RS-D340-99 661-664	42		0.001		3.8	0.11
RS-D340-99 664.0-665.8	57		0.002		3.1	0.09
RS-D340-99 665.8-669.0	<5		<0.001		0.8	0.02
RS-D340-99 669-673	12		<0.001		1.2	0.04
RS-D340-99 673.0-675.5	<5		<0.001		1.4	0.04
RS-D340-99 675.5-679.0	<5		<0.001		1.7	0.05
RS-D340-99 679-684	<5		<0.001		2.1	0.06

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-D340-99 687.0-689.4	12		<0.001		1.5	0.04
RS-D340-99 689.4-692.0	36	36	0.001	0.001	<0.5	<0.02
RS-D340-99 692-695	30		<0.001		1.8	0.05
RS-D340-99 695-700	6		<0.001		0.7	0.02
RS-D340-99 700-705	420	420	0.012	0.012	3.9	0.11
RS-D340-99 705-707	39		0.001		2.1	0.06
RS-D340-99 707.0-709.8	99		0.003		4.1	0.12
RS-D340-99 709.8-715.0	108		0.003		88.2	2.57
RS-D340-99 715.0-718.2	312		0.009		17.3	0.50
RS-D340-99 718.2-722.8	30		<0.001		1.9	0.06
RS-D340-99 722.8-723.4	<5		<0.001		1.2	0.04
RS-D340-99 723.4-725.0	84		0.002		6.4	0.19
RS-D340-99 725.0-729.1	24		<0.001		2.6	0.08
RS-D340-99 729.1-731.5	447		0.013		9.0	0.26
RS-D340-99 731.2-733.2	27		<0.001		1.0	0.03
RS-D340-99 733.2-738.1	215		0.006		10.1	0.29
RS-D340-99 738.1-742.5	741		0.022		6.5	0.19
RS-D340-99 742.5-745.9	168		0.005		<0.5	<0.02
RS-D340-99 745.9-750.0	24		<0.001		1.9	0.06
RS-D340-99 750-755	<5		<0.001		<0.5	<0.02
RS-D340-99 755-760	36		0.001		1.0	0.03
RS-D340-99 760-765	135	156	0.004	0.005	4.7	0.14
RS-D340-99 765-770	60		0.002		2.1	0.06
RS-D340-99 770-775	<5		<0.001		<0.5	<0.02
RS-D340-99 775-780	<5	<5	<0.001	<0.001	1.4	0.04

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-D340-99 780-785	<5		<0.001		1.5	0.04
RS-D340-99 785-790	<5		<0.001		<0.5	<0.02
RS-D340-99 790-795	<5		<0.001		<0.5	<0.02
RS-D340-99 795-800	<5		<0.001		<0.5	<0.02
RS-D340-99 800-805	<5		<0.001		0.7	0.02
RS-D340-99 805-810	<5		<0.001		1.0	0.03
RS-D340-99 810-815	<5		<0.001		0.9	0.03
RS-D340-99 815-819	<5		<0.001		1.1	0.03
RS-D340-99 819.0-823.3	<5		<0.001		1.2	0.04
RS-D340-99 823.3-827.4	<5		<0.001		0.6	<0.02
RS-D340-99 827.4-831.0	<5		<0.001		1.0	0.03
RS-D340-99 831-835	<5	<5	<0.001	<0.001	1.9	0.06
RS-D340-99 835-840	<5		<0.001		<0.5	<0.02
RS-D340-99 840-845	12		<0.001		<0.5	<0.02
RS-D340-99 845-850	<5		<0.001		<0.5	<0.02
RS-D340-99 850-854	<5		<0.001		0.7	0.02
RS-D340-99 854-859	<5		<0.001		0.6	<0.02
RS-D340-99 859-862	<5		<0.001		0.8	0.02
RS-D340-99 862.0-865.9	<5		<0.001		2.5	0.07
RS-D340-99 865.9-869.0	<5		<0.001		0.6	<0.02
RS-D340-99 869.0-872.6	6		<0.001		<0.5	<0.02
RS-D340-99 872.6-875.4	<5		<0.001		0.6	<0.02
RS-D340-99 875.4-880.0	<5		<0.001		<0.5	<0.02
RS-D340-99 880.0-882.9	<5		<0.001		<0.5	<0.02
RS-D340-99 882.9-887.2	<5		<0.001		<0.5	<0.02

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-D340-99 887.2-892.2	<5		<0.001		<0.5	<0.02
RS-D340-99 892.2-895.0	<5		<0.001		<0.5	<0.02
RS-D340-99 895-900	<5		<0.001		1.0	0.03
RS-D340-99 900-905	<5		<0.001		0.7	0.02
RS-D340-99 905-910	<5		<0.001		2.6	0.08
RS-D340-99 910-915	<5		<0.001		1.0	0.03
RS-D340-99 915-920	<5		<0.001		1.1	0.03
RS-D340-99 920-925	<5		<0.001		0.7	0.02
RS-D340-99 925-929	<5		<0.001		0.7	0.02
RS-D340-99 929-934	<5		<0.001		<0.5	<0.02
RS-D340-99 934-940	<5		<0.001		1.1	0.03
RS-D340-99 940-945	<5		<0.001		1.2	0.04
RS-D340-99 945-950	<5		<0.001		<0.5	<0.02
RS-D340-99 950-955	<5		<0.001		<0.5	<0.02
RS-D340-99 955-960	<5		<0.001		0.7	0.02

DLM

Accepted ranges for gold by fire assay (94/4/20)

% w/ SMP.

	Standard	Best Value	Standard Deviation	(--accepted range--) min	-	max
sorted by standard name	GO1	12.884	0.653	11.578	-	14.190
	GO2	0.445	0.033	0.380	-	0.510
	GO3	6.627	0.331	5.965	-	7.289
	MS1	0.103	0.016	0.071	-	0.135
	MS2	0.145	0.020	0.105	-	0.185
	MS3	1.007	0.092	0.823	-	1.191
	SAP	0.264	0.020	0.223	-	0.305
	SB	0.059	0.009	0.042	-	0.077
	SB2	0.052	0.008	0.036	-	0.068
	SG	0.129	0.013	0.103	-	0.155
	SMC	0.003	0.002	0.000	-	0.006
	SN1	0.389	0.040	0.309	-	0.469
	SOT	0.278	0.024	0.230	-	0.326
	SV	0.051	0.011	0.030	-	0.072
	SB2	0.039	0.010		-	
					-	
					-	
sorted by best value	GO1	12.884	0.653	11.578	-	14.190
	GO3	6.627	0.331	5.965	-	7.289
	MS3-12	1.007	0.092	0.823	-	1.191
	GO2	0.445	0.033	0.380	-	0.510
	SN1	0.389	0.040	0.309	-	0.469
	SOT	0.278	0.024	0.230	-	0.326
	SAP	0.264	0.020	0.223	-	0.305
	MS2	0.145	0.020	0.105	-	0.185
	SG	0.129	0.013	0.103	-	0.155
	MS1	0.103	0.016	0.071	-	0.135
	SB	0.059	0.009	0.042	-	0.077
	SB2	0.052	0.008	0.036	-	0.068
	SV	0.051	0.011	0.030	-	0.072
	SMC	0.003	0.002	0.000	-	0.006

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP052794

PO BOX 11530
RENO NV, USA
Ph.(775) 356-0606, Fax.(775) 356-1413

NEWMONT GOLD COMPANY

COPIES TO : C. BALLEW

: R. VANCE

: Kurt Allen

:

CLIENT REFERENCE No: RS-D340-99 RECEIVED : 12 MAR 1999

No. SAMPLES : 186 REPORTED : 15 MAR 1999

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP052794

CLIENT : NEWMONT GOLD COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-D340-99

REPORTED : 15 MAR 1999

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-D340-99 0-5	32	27	<0.001	<0.001	<0.5	<0.02
RS-D340-99 44-49	<5		<0.001		<0.5	<0.02
RS-D340-99 59-64	14		<0.001		<0.5	<0.02
RS-D340-99 164-169	34		<0.001		<0.5	<0.02
RS-D340-99 214-219	<5		<0.001		<0.5	<0.02
RS-D340-99 244.0-247.8	<5		<0.001		0.9	0.03
RS-D340-99 247.8-254.0	8		<0.001		<0.5	<0.02
RS-D340-99 254-259	<5		<0.001		<0.5	<0.02
RS-D340-99 259.0-265.8	<5		<0.001		0.7	0.02
RS-D340-99 265.8-267.8	28		<0.001		2.6	0.08
RS-D340-99 267.8-268.4	40		0.001		1.5	0.04
RS-D340-99 268.4-271.5	78	88	0.002	0.003	2.6	0.08
RS-D340-99 271.5-275.5	54		0.002		1.3	0.04
RS-D340-99 275.5-279.0	138		0.004		2.0	0.06
RS-D340-99 279.0-283.2	15		<0.001		1.5	0.04
RS-D340-99 283.2-288.0	18		<0.001		2.0	0.06
RS-D340-99 288-294	12		<0.001		1.9	0.06
RS-D340-99 294-299	12		<0.001		2.4	0.07
RS-D340-99 299-304	6		<0.001		1.6	0.05
RS-D340-99 304-309	6		<0.001		1.8	0.05
RS-D340-99 309-314	<5		<0.001		2.1	0.06
RS-D340-99 314-319	9		<0.001		1.7	0.05
RS-D340-99 319-323	<5		<0.001		1.1	0.03
RS-D340-99 323-329	<5		<0.001		1.3	0.04
RS-D340-99 329-334	<5		<0.001		1.3	0.04

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-D340-99 334-339	<5		<0.001		1.4	0.04
RS-D340-99 339-344	27		<0.001		1.1	0.03
RS-D340-99 344-349	36		0.001		1.7	0.05
RS-D340-99 349-354	18		<0.001		1.9	0.06
RS-D340-99 354-357	225		0.007		5.1	0.15
RS-D340-99 357.0-361.6	152		0.004		8.4	0.25
RS-D340-99 361.6-366.2	497		0.014		1.0	0.03
RS-D340-99 366.2-369.0	24		<0.001		1.9	0.06
RS-D340-99 369-371	380	330	0.011	0.010	1.2	0.04
RS-D340-99 371.0-376.4	12		<0.001		1.5	0.04
RS-D340-99 376.4-380.6	12		<0.001		1.5	0.04
RS-D340-99 380.6-383.1	36		0.001		1.8	0.05
RS-D340-99 383.1-386.0	250		0.007		1.3	0.04
RS-D340-99 386-389	48		0.001		0.8	0.02
RS-D340-99 389-394	24		<0.001		2.5	0.07
RS-D340-99 394.0-396.3	189		0.006		2.7	0.08
RS-D340-99 396.3-399.0	225		0.007		3.1	0.09
RS-D340-99 396.3-399.0B	986		0.029		0.7	0.02
RS-D340-99 399-403	66		0.002		2.4	0.07
RS-D340-99 403.0-407.7	123		0.004		5.0	0.15
RS-D340-99 407.7-414.0	339		0.010		3.7	0.11
RS-D340-99 414-415	51		0.001		2.5	0.07
RS-D340-99 415-418	21		<0.001		1.5	0.04
RS-D340-99 418-423	51		0.001		3.8	0.11
RS-D340-99 423-428	99		0.003		2.9	0.08

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-D340-99 428.0-433.2	702		0.020		4.6	0.13
RS-D340-99 433.2-435.4	45		0.001		2.7	0.08
RS-D340-99 435.4-440.5	9	12	<0.001	<0.001	1.9	0.06
RS-D340-99 440.5-446.0	18		<0.001		2.5	0.07
RS-D340-99 446.0-450.3	<5		<0.001		1.1	0.03
RS-D340-99 450.3-454.0	6		<0.001		1.8	0.05
RS-D340-99 454-459	48	51	0.001	0.001	1.8	0.05
RS-D340-99 459-464	64		0.002		5.3	0.15
RS-D340-99 464.0-468.6	51		0.001		3.6	0.11
RS-D340-99 468.4-472.4	21		<0.001		2.5	0.07
RS-D340-99 472.4-475.0	213	153	0.006	0.004	2.9	0.08
RS-D340-99 475.0-479.4	18		<0.001		1.1	0.03
RS-D340-99 479.4-481.5	24		<0.001		2.2	0.06
RS-D340-99 481.5-487.5	21		<0.001		2.8	0.08
RS-D340-99 487.5-491.4	24		<0.001		2.6	0.08
RS-D340-99 491.5-496.5	45		0.001		3.0	0.09
RS-D340-99 496.5-500.0	9		<0.001		1.9	0.06
RS-D340-99 500-504	30		<0.001		2.8	0.08
RS-D340-99 504-506	18		<0.001		1.7	0.05
RS-D340-99 506-511	9		<0.001		2.3	0.07
RS-D340-99 511.0-516.5	<5		<0.001		0.8	0.02
RS-D340-99 516.5-521.9	<5		<0.001		1.1	0.03
RS-D340-99 521.9-527.0	12		<0.001		3.0	0.09
RS-D340-99 527-530	<5		<0.001		1.1	0.03
RS-D340-99 530-534	<5		<0.001		0.7	0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-D340-99 534-539	48	52	0.001	0.002	1.5	0.04
RS-D340-99 539-542	<5		<0.001		1.1	0.03
RS-D340-99 542-544	54		0.002		2.4	0.07
RS-D340-99 544-546	45		0.001		4.9	0.14
RS-D340-99 546-549	<5		<0.001		<0.5	<0.02
RS-D340-99 549-554	<5		<0.001		<0.5	<0.02
RS-D340-99 554-559	<5		<0.001		<0.5	<0.02
RS-D340-99 559-561	6		<0.001		0.7	0.02
RS-D340-99 561.0-562.5	27		<0.001		2.2	0.06
RS-D340-99 562.5-564.5	75	64	0.002	0.002	2.7	0.08
RS-D340-99 564.5-567.3	<5		<0.001		<0.5	<0.02
RS-D340-99 567.3-569.0	<5		<0.001		<0.5	<0.02
RS-D340-99 569.0-570.4	<5		<0.001		<0.5	<0.02
RS-D340-99 570.4-574.0	14		<0.001		0.6	<0.02
RS-D340-99 574-576	24		<0.001		0.7	0.02
RS-D340-99 576-579	<5		<0.001		0.7	0.02
RS-D340-99 579-581	351	279	0.010	0.008	3.4	0.10
RS-D340-99 581-583	108		0.003		1.0	0.03
RS-D340-99 583-584	SAMPLE NOT RECEIVED					
RS-D340-99 584-587	<5		<0.001		1.5	0.04
RS-D340-99 587-589	<5		<0.001		1.7	0.05
RS-D340-99 589.0-591.6	6		<0.001		1.5	0.04
RS-D340-99 591.6-595.5	129		0.004		2.3	0.07
RS-D340-99 595.5-599.0	12		<0.001		1.7	0.05
RS-D340-99 599-604	93		0.003		2.7	0.08

AMERICAN ASSAY LABORATORIES

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-D340-99 604-609	93	110	0.003	0.003	3.0	0.09
RS-D340-99 609-614	6		<0.001		3.4	0.10
RS-D340-99 614-619	9		<0.001		3.1	0.09
RS-D340-99 619.0-621.6	18		<0.001		2.6	0.08
RS-D340-99 621.6-624.0	27		<0.001		2.0	0.06
RS-D340-99 624-629	129		0.004		2.2	0.06
RS-D340-99 629-632	231		0.007		3.3	0.10
RS-D340-99 632-634	SAMPLE NOT RECEIVED					
RS-D340-99 634-636	<5		<0.001		0.6	<0.02
RS-D340-99 634-636B	96	100	0.003	0.003	<0.5	<0.02
RS-D340-99 636-639	SAMPLE NOT RECEIVED					
RS-D340-99 639-641	9		<0.001		0.6	<0.02
RS-D340-99 641-646	12		<0.001		0.5	<0.02
RS-D340-99 646-649	<5		<0.001		0.9	0.03
RS-D340-99 649-652	6		<0.001		1.5	0.04
RS-D340-99 652-654	<5		<0.001		1.7	0.05
RS-D340-99 654-659	SAMPLE NOT RECEIVED					
RS-D340-99 659-661	9		<0.001		2.4	0.07
RS-D340-99 661-664	42		0.001		3.8	0.11
RS-D340-99 664.0-665.8	57		0.002		3.1	0.09
RS-D340-99 665.8-669.0	<5		<0.001		0.8	0.02
RS-D340-99 669-673	12		<0.001		1.2	0.04
RS-D340-99 673.0-675.5	<5		<0.001		1.4	0.04
RS-D340-99 675.5-679.0	<5		<0.001		1.7	0.05
RS-D340-99 679-684	<5		<0.001		2.1	0.06

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-D340-99 687.0-689.4	12		<0.001		1.5	0.04
RS-D340-99 689.4-692.0	36	36	0.001	0.001	<0.5	<0.02
RS-D340-99 692-695	30		<0.001		1.8	0.05
RS-D340-99 695-700	6		<0.001		0.7	0.02
RS-D340-99 700-705	420	420	0.012	0.012	3.9	0.11
RS-D340-99 705-707	39		0.001		2.1	0.06
RS-D340-99 707.0-709.8	99		0.003		4.1	0.12
RS-D340-99 709.8-715.0	108		0.003		88.2	2.57
RS-D340-99 715.0-718.2	312		0.009		17.3	0.50
RS-D340-99 718.2-722.8	30		<0.001		1.9	0.06
RS-D340-99 722.8-723.4	<5		<0.001		1.2	0.04
RS-D340-99 723.4-725.0	84		0.002		6.4	0.19
RS-D340-99 725.0-729.1	24		<0.001		2.6	0.08
RS-D340-99 729.1-731.5	447		0.013		9.0	0.26
RS-D340-99 731.2-733.2	27		<0.001		1.0	0.03
RS-D340-99 733.2-738.1	215		0.006		10.1	0.29
RS-D340-99 738.1-742.5	741		0.022		6.5	0.19
RS-D340-99 742.5-745.9	168		0.005		<0.5	<0.02
RS-D340-99 745.9-750.0	24		<0.001		1.9	0.06
RS-D340-99 750-755	<5		<0.001		<0.5	<0.02
RS-D340-99 755-760	36		0.001		1.0	0.03
RS-D340-99 760-765	135	156	0.004	0.005	4.7	0.14
RS-D340-99 765-770	60		0.002		2.1	0.06
RS-D340-99 770-775	<5		<0.001		<0.5	<0.02
RS-D340-99 775-780	<5	<5	<0.001	<0.001	1.4	0.04

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-D340-99 780-785	<5		<0.001		1.5	0.04
RS-D340-99 785-790	<5		<0.001		<0.5	<0.02
RS-D340-99 790-795	<5		<0.001		<0.5	<0.02
RS-D340-99 795-800	<5		<0.001		<0.5	<0.02
RS-D340-99 800-805	<5		<0.001		0.7	0.02
RS-D340-99 805-810	<5		<0.001		1.0	0.03
RS-D340-99 810-815	<5		<0.001		0.9	0.03
RS-D340-99 815-819	<5		<0.001		1.1	0.03
RS-D340-99 819.0-823.3	<5		<0.001		1.2	0.04
RS-D340-99 823.3-827.4	<5		<0.001		0.6	<0.02
RS-D340-99 827.4-831.0	<5		<0.001		1.0	0.03
RS-D340-99 831-835	<5	<5	<0.001	<0.001	1.9	0.06
RS-D340-99 835-840	<5		<0.001		<0.5	<0.02
RS-D340-99 840-845	12		<0.001		<0.5	<0.02
RS-D340-99 845-850	<5		<0.001		<0.5	<0.02
RS-D340-99 850-854	<5		<0.001		0.7	0.02
RS-D340-99 854-859	<5		<0.001		0.6	<0.02
RS-D340-99 859-862	<5		<0.001		0.8	0.02
RS-D340-99 862.0-865.9	<5		<0.001		2.5	0.07
RS-D340-99 865.9-869.0	<5		<0.001		0.6	<0.02
RS-D340-99 869.0-872.6	6		<0.001		<0.5	<0.02
RS-D340-99 872.6-875.4	<5		<0.001		0.6	<0.02
RS-D340-99 875.4-880.0	<5		<0.001		<0.5	<0.02
RS-D340-99 880.0-882.9	<5		<0.001		<0.5	<0.02
RS-D340-99 882.9-887.2	<5		<0.001		<0.5	<0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-D340-99 887.2-892.2	<5		<0.001		<0.5	<0.02
RS-D340-99 892.2-895.0	<5		<0.001		<0.5	<0.02
RS-D340-99 895-900	<5		<0.001		1.0	0.03
RS-D340-99 900-905	<5		<0.001		0.7	0.02
RS-D340-99 905-910	<5		<0.001		2.6	0.08
RS-D340-99 910-915	<5		<0.001		1.0	0.03
RS-D340-99 915-920	<5		<0.001		1.1	0.03
RS-D340-99 920-925	<5		<0.001		0.7	0.02
RS-D340-99 925-929	<5		<0.001		0.7	0.02
RS-D340-99 929-934	<5		<0.001		<0.5	<0.02
RS-D340-99 934-940	<5		<0.001		1.1	0.03
RS-D340-99 940-945	<5		<0.001		1.2	0.04
RS-D340-99 945-950	<5		<0.001		<0.5	<0.02
RS-D340-99 950-955	<5		<0.001		<0.5	<0.02
RS-D340-99 955-960	<5		<0.001		0.7	0.02

Down Hole Survey Data
RS-D340-99

Footage	Measured Azimuth	Correction -15.66	Measured Dip	Calculated Dip
40	72	123.7	56	-34.0
200	74	121.7	54.5	-35.5
400	73	122.7	55.5	-34.5
600	73	122.7	54.75	-35.3
850	76	119.7	48.75	-41.3

RS-D340-99 BOX 2
DEPTH 9 - 18_5

RS-D340-99 BOX 1
DEPTH 0 - 9

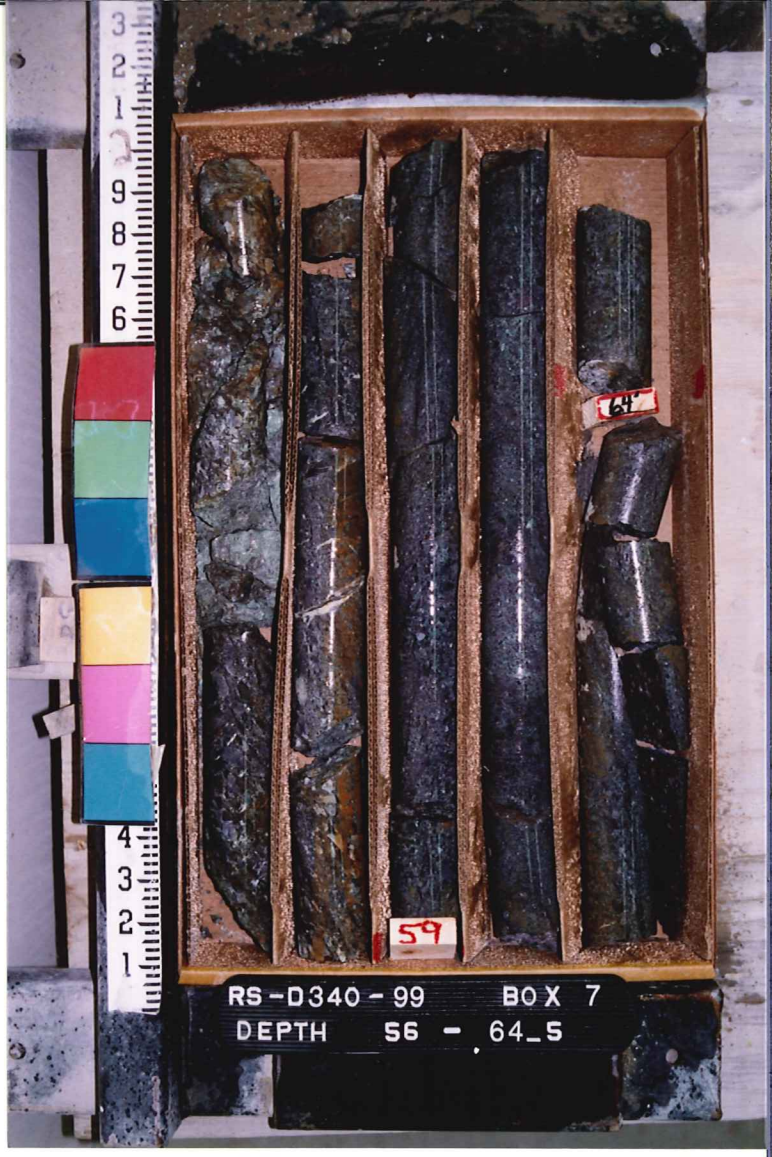
RS-D340-99 BOX 3
DEPTH 18_5 - 27_5

RS-D340-99 BOX 5
DEPTH 37 - 46_5
44

RS-D340-99 BOX 4
DEPTH 27_5 - 37

RS-D340-99 BOX 6
DEPTH 46_5 - 56
54
55

RS-D340-99 BOX 8
DEPTH 64_5 - 74


RS-D340-99 BOX 7
DEPTH 56 - 64_5

RS-D340-99 BOX 9
DEPTH 74 - 83_5

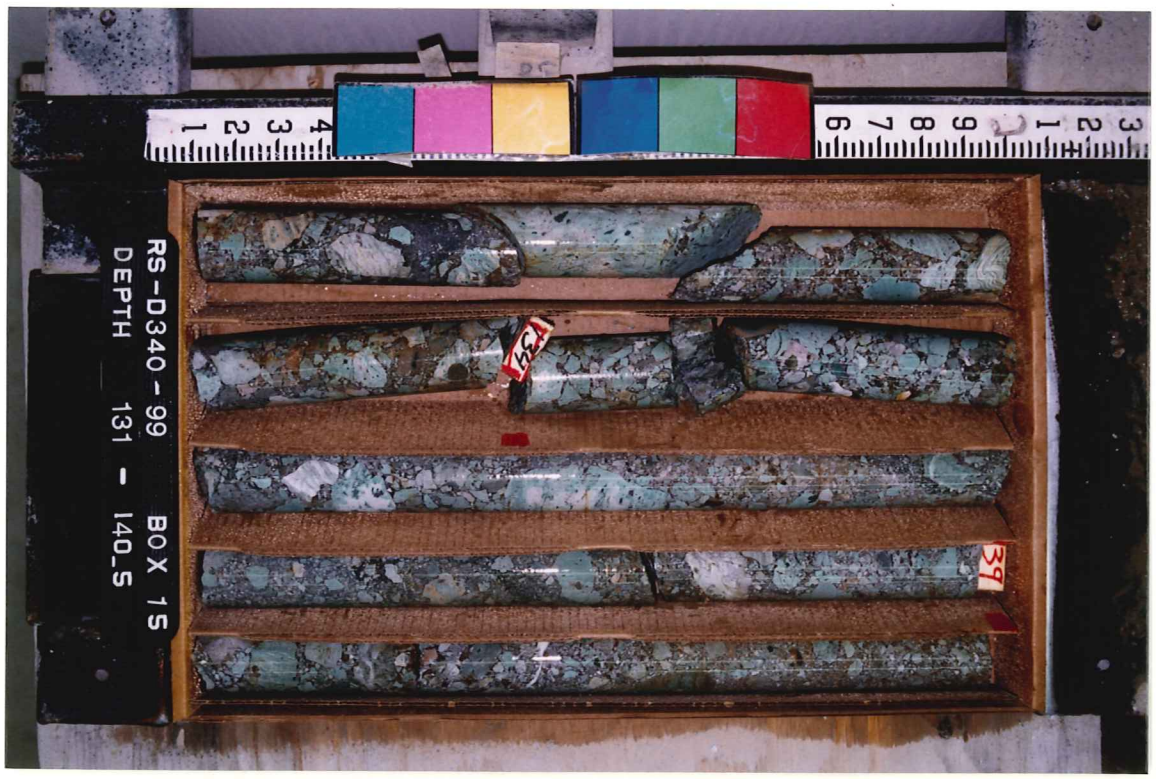
RS-D340-99 BOX 11
DEPTH 93_5 - 103
99.2

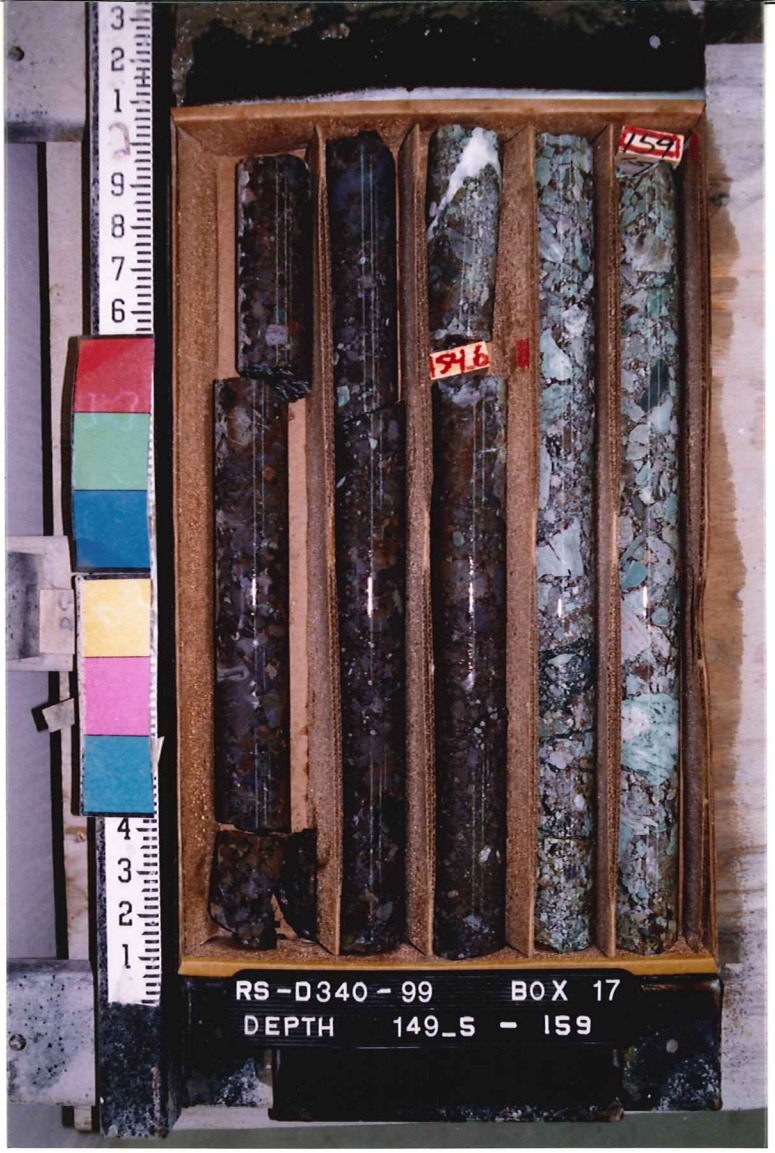
RS-D340-99 BOX 10
DEPTH 83_5 - 93_5
89

RS-D340-99 BOX 12
DEPTH 103 - 112
104
107

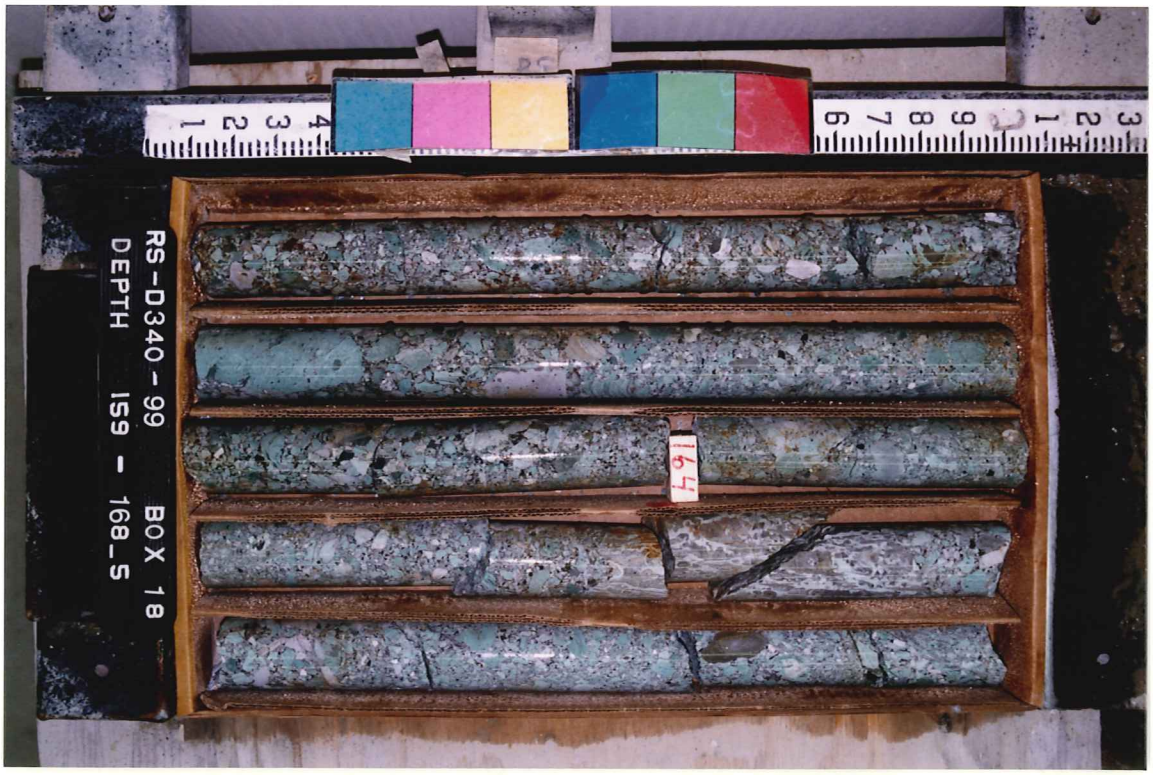
129
129
RS-D340-99 BOX 14
DEPTH 121_5 - 131

114
119
114.5
RS-D340-99 BOX 13
DEPTH 112 - 121_5


134
39
RS-D340-99 BOX 15
DEPTH 131 - 140_5

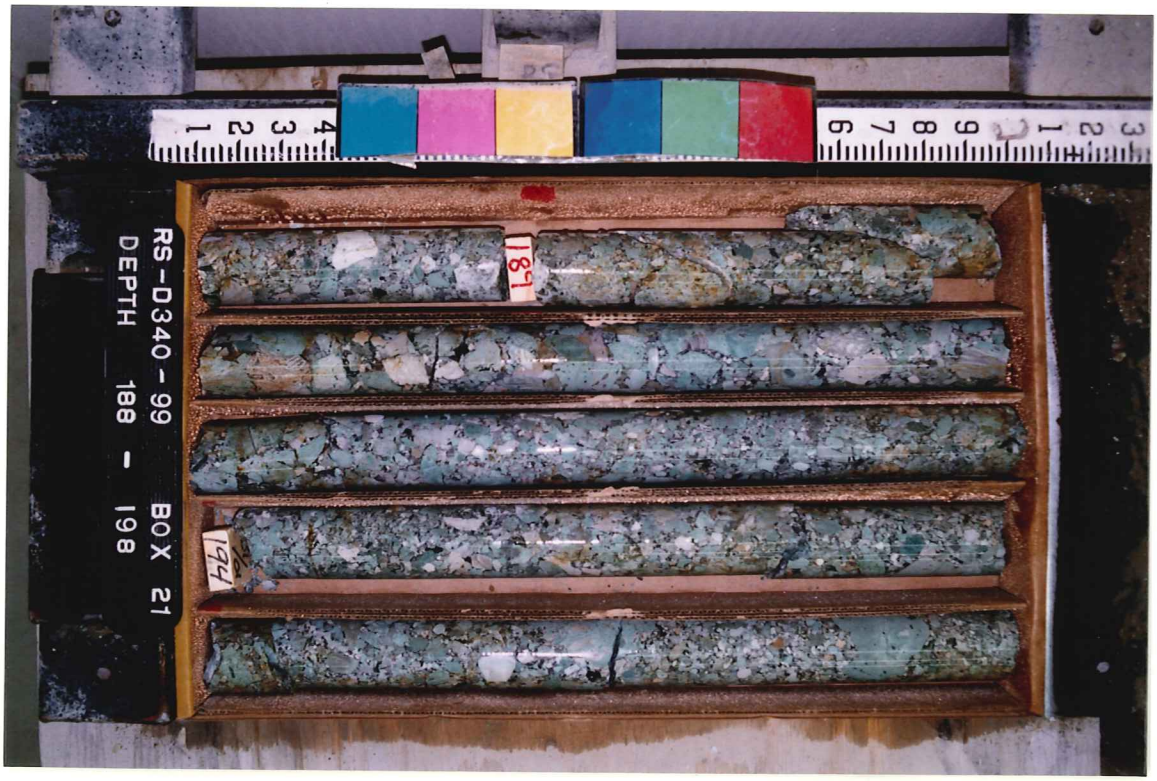

RS-D340-99 BOX 17
DEPTH 149_5 - 159
154
159

RS-D340-99 BOX 16
DEPTH 140_5 - 149_5
143
144
149


RS-D340-99 BOX 18
DEPTH 159 - 168_5
164

RS-D340-99 BOX 20
DEPTH 178_5 - 188

RS-D340-99 BOX 19
DEPTH 168_5 - 178_5


RS-D340-99 BOX 21
DEPTH 188 - 198

RS-D340-99 BOX 23
DEPTH 207_5 - 217

RS-D340-99 BOX 22
DEPTH 198 - 207_5

RS-D340-99 BOX 24
DEPTH 217 - 226_5

RS-D340-99 BOX 26
DEPTH 236 - 245

RS-D340-99 BOX 25
DEPTH 226_5 - 236

RS-D340-99 BOX 27
DEPTH 245 - 254_5

RS-D340-99 BOX 29
DEPTH 263_5 - 274_5

RS-D340-99 BOX 28
DEPTH 254_5 - 263_5

RS-D340-99 BOX 30
DEPTH 274_5 - 284

RS-D340-99 BOX 32
DEPTH 293_5 - 302_5

RS-D340-99 BOX 31
DEPTH 284 - 293_5

RS-D340-99 BOX 33
DEPTH 302_5-311_0

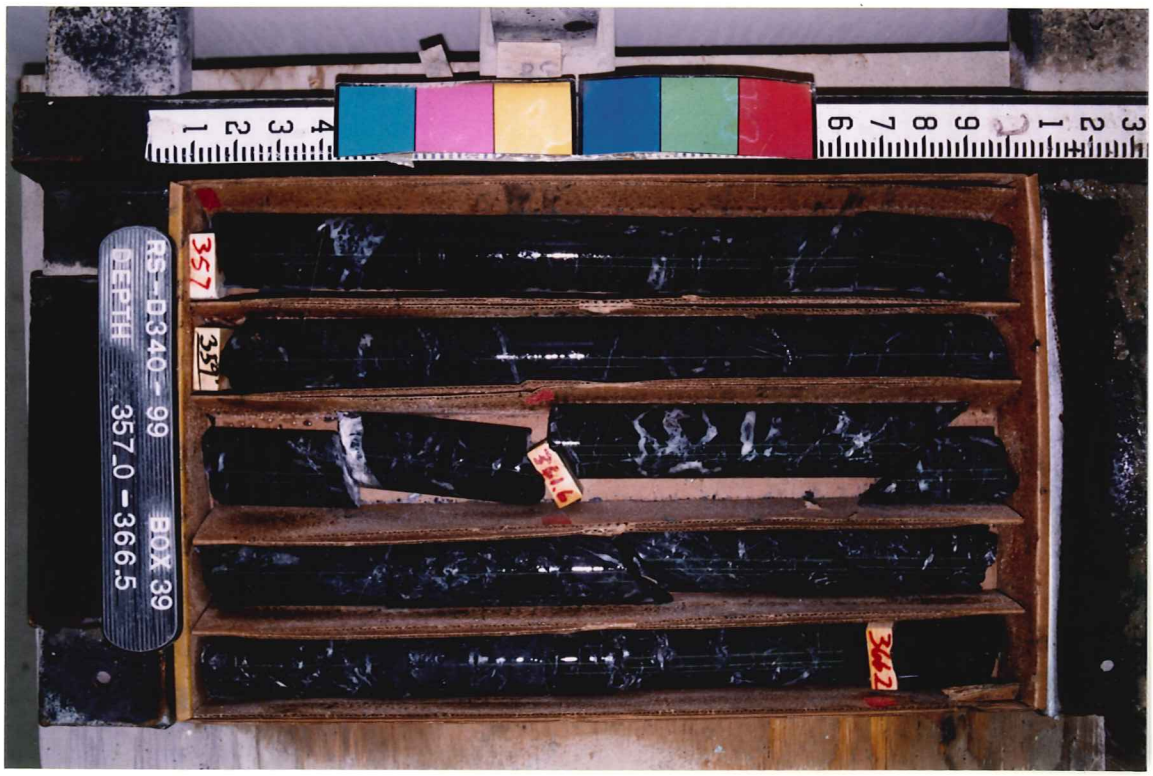
RS-D340-99 BOX 35
DEPTH 320.5-330.0

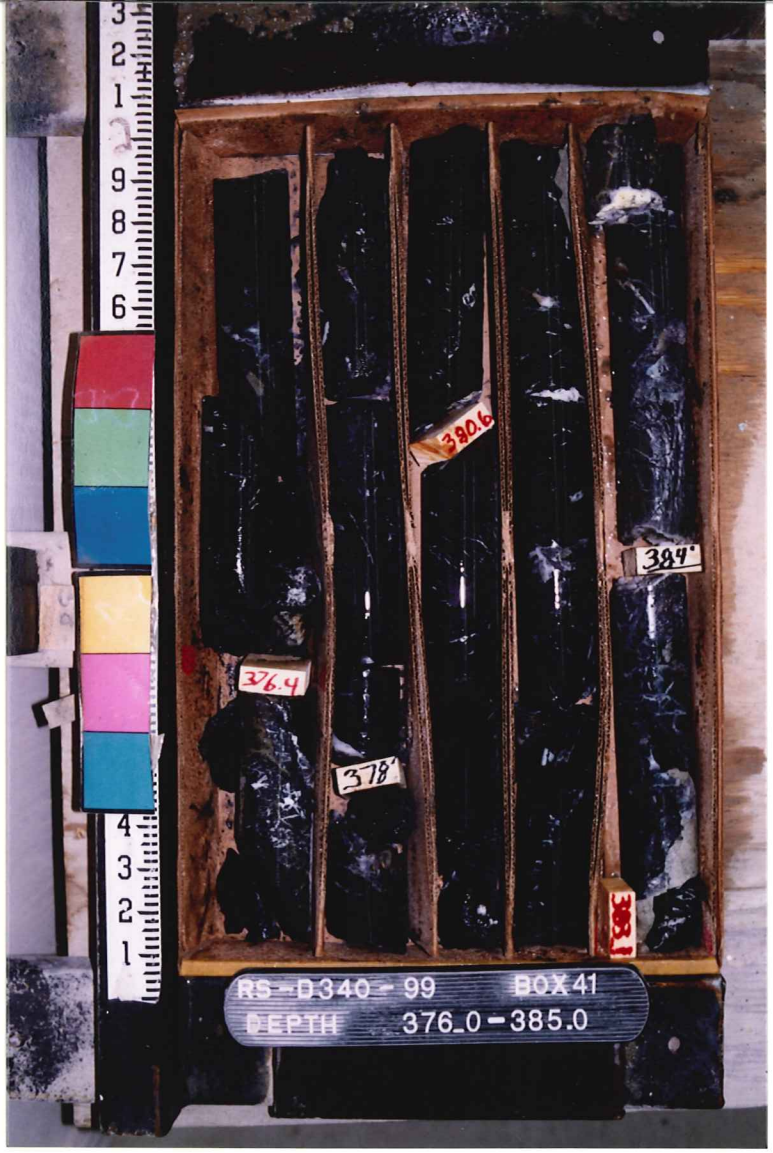
319
RS-D340-99 BOX 34
DEPTH 311.0-320.5

RS-D340-99 BOX 36
DEPTH 330.0-339.0
334

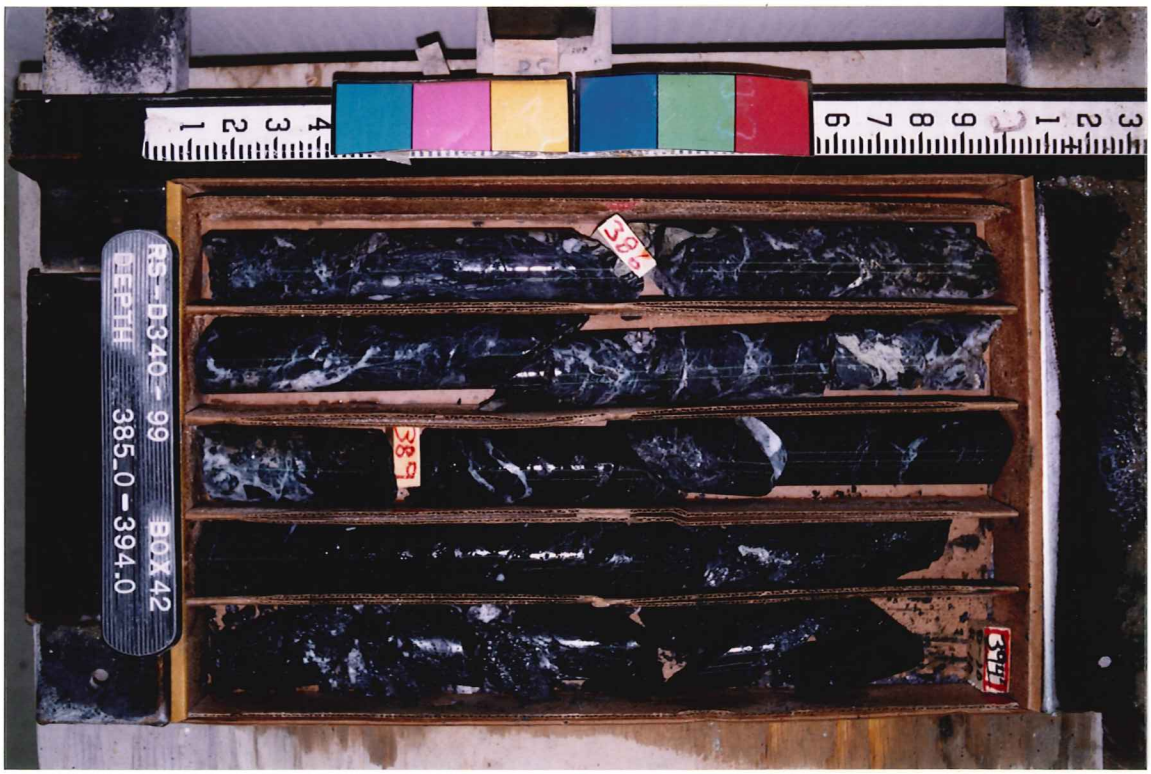
RS-D340-99 BOX 38
DEPTH 348.0-357.0

RS-D340-99 BOX 37
DEPTH 339.0-348.0

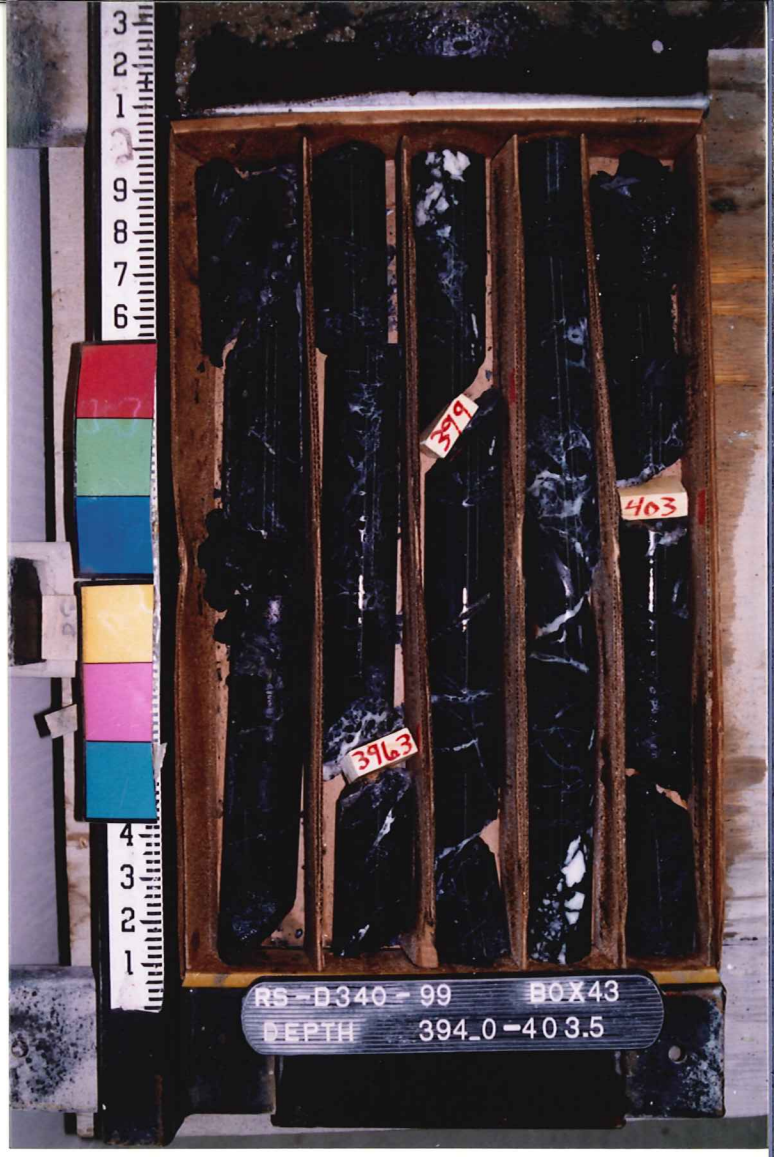

RS-D340-99 BOX 39
DEPTH 357.0-366.5


RS-D340-99 BOX 41
DEPTH 376_0-385.0
376.4
378'
380.6
387'
381

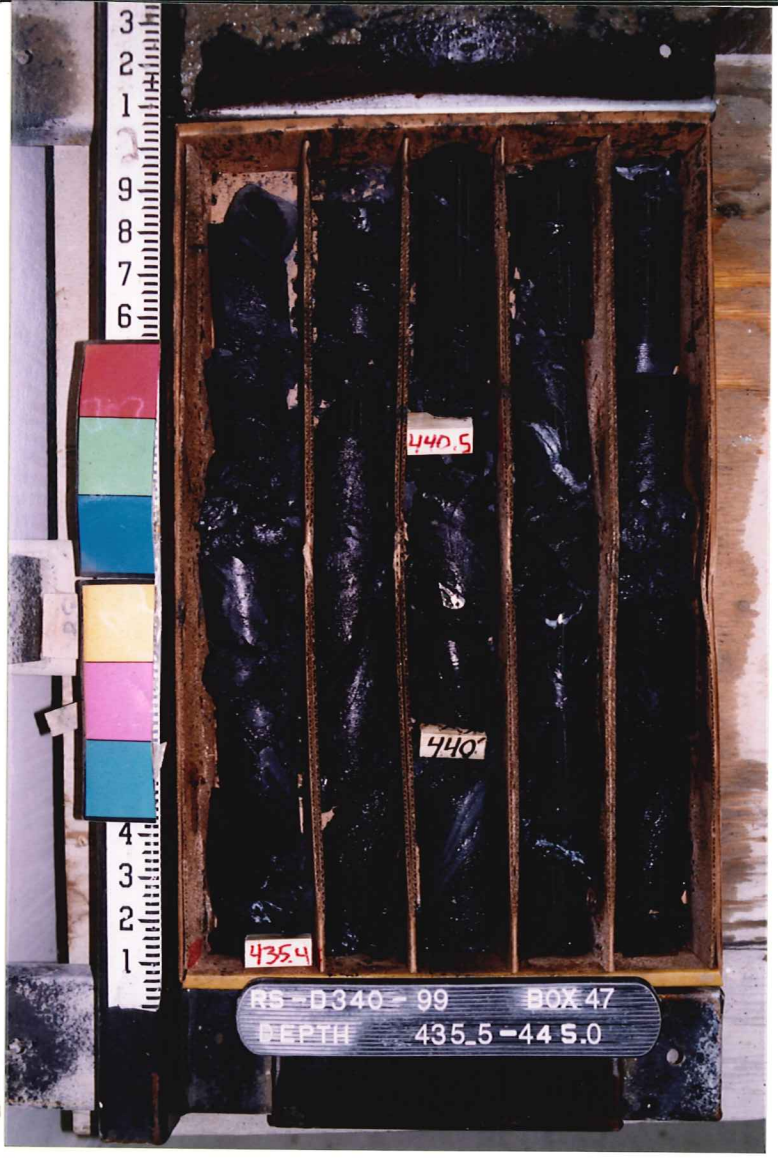
RS-D340-99 BOX 40
DEPTH 366_5-376.0
371
369


RS-D340-99 BOX 42
DEPTH 385_0-394.0
384
389
393

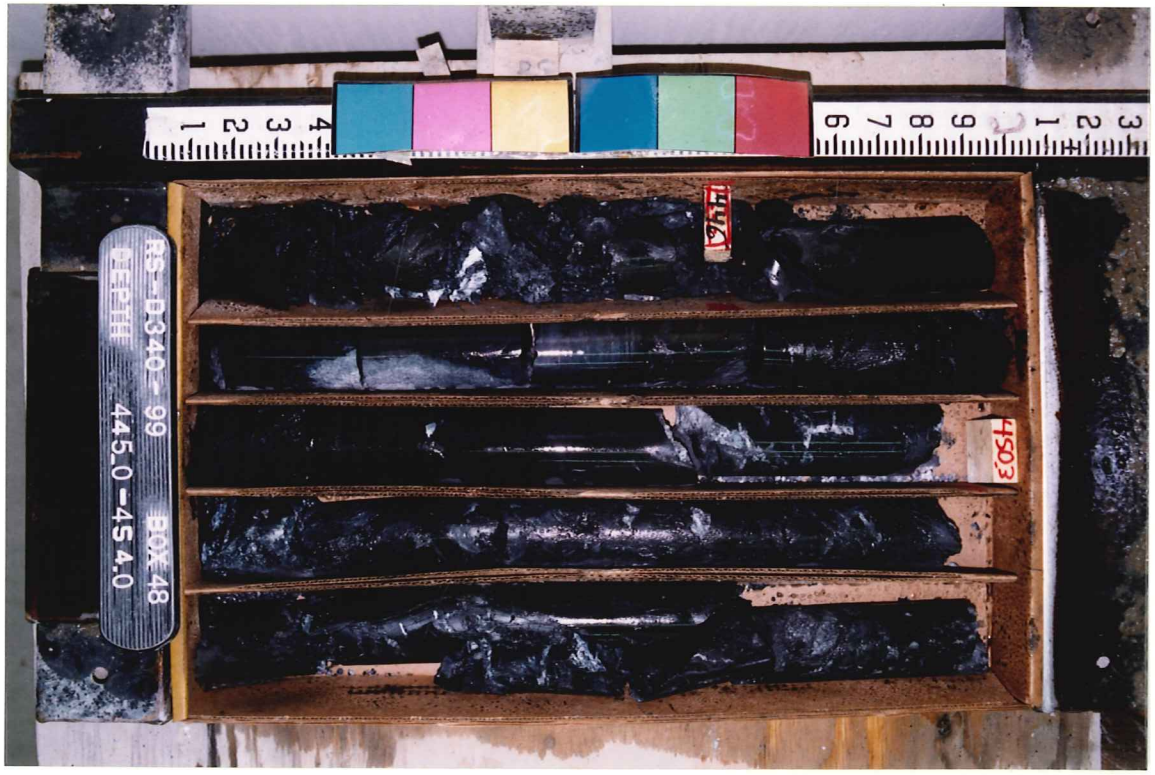
RS-D340-99 BOX 44
DEPTH 403.5-417.0
415
467.7
404


RS-D340-99 BOX 43
DEPTH 394.0-403.5
399
403
396.3

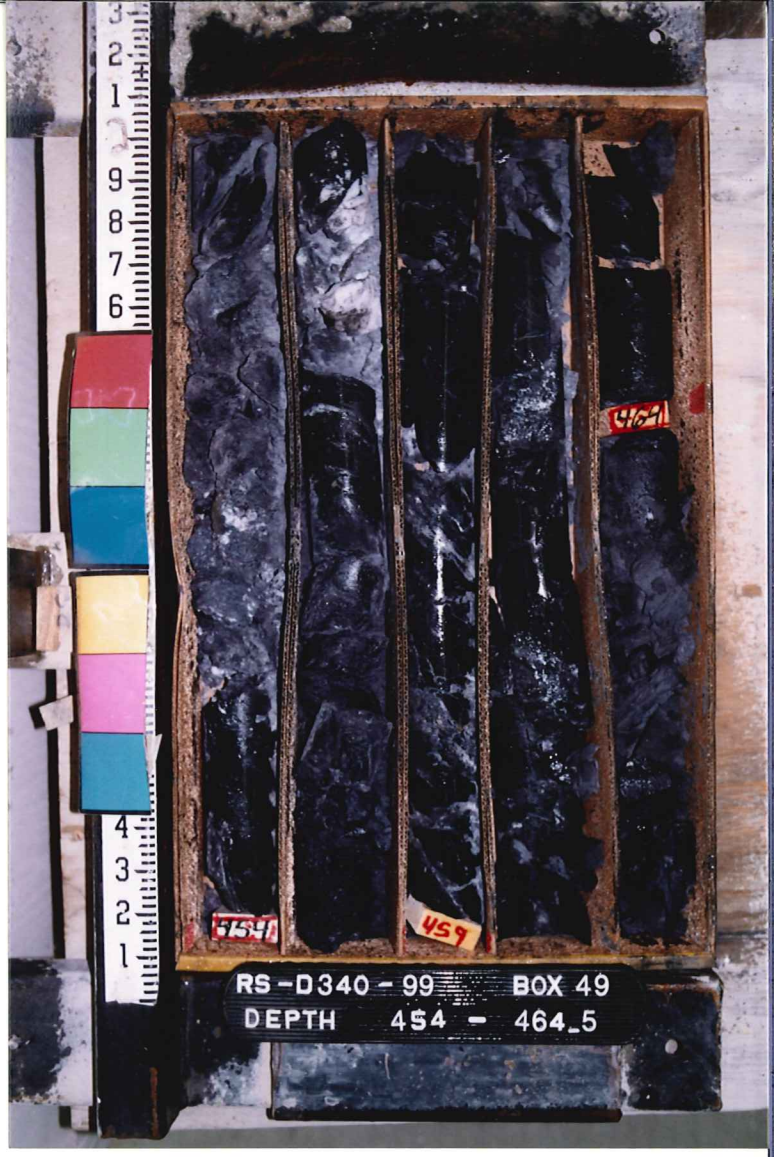
RS-D340-99 BOX 45
DEPTH 417.0-426.5
418
423
424

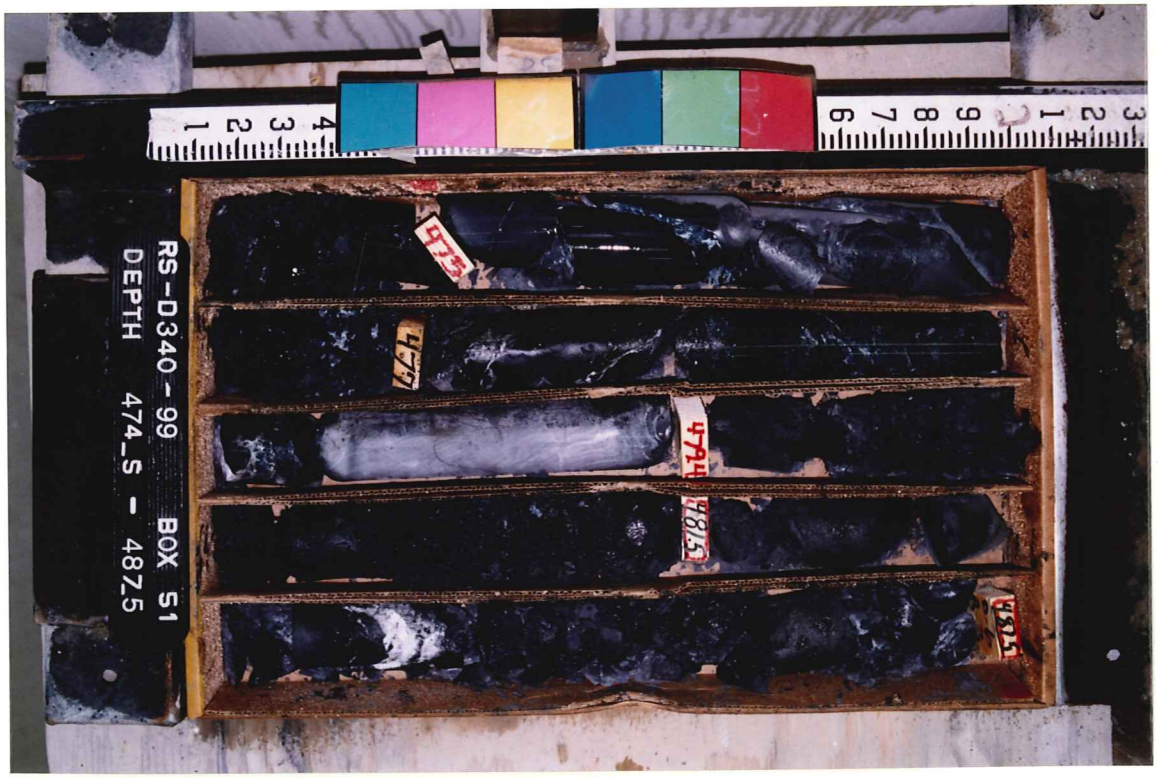

440.5
440
435.4
RS-D340-99 BOX 47
DEPTH 435.5-445.0

428
433.2
434
RS-D340-99 BOX 46
DEPTH 426.5-435.5

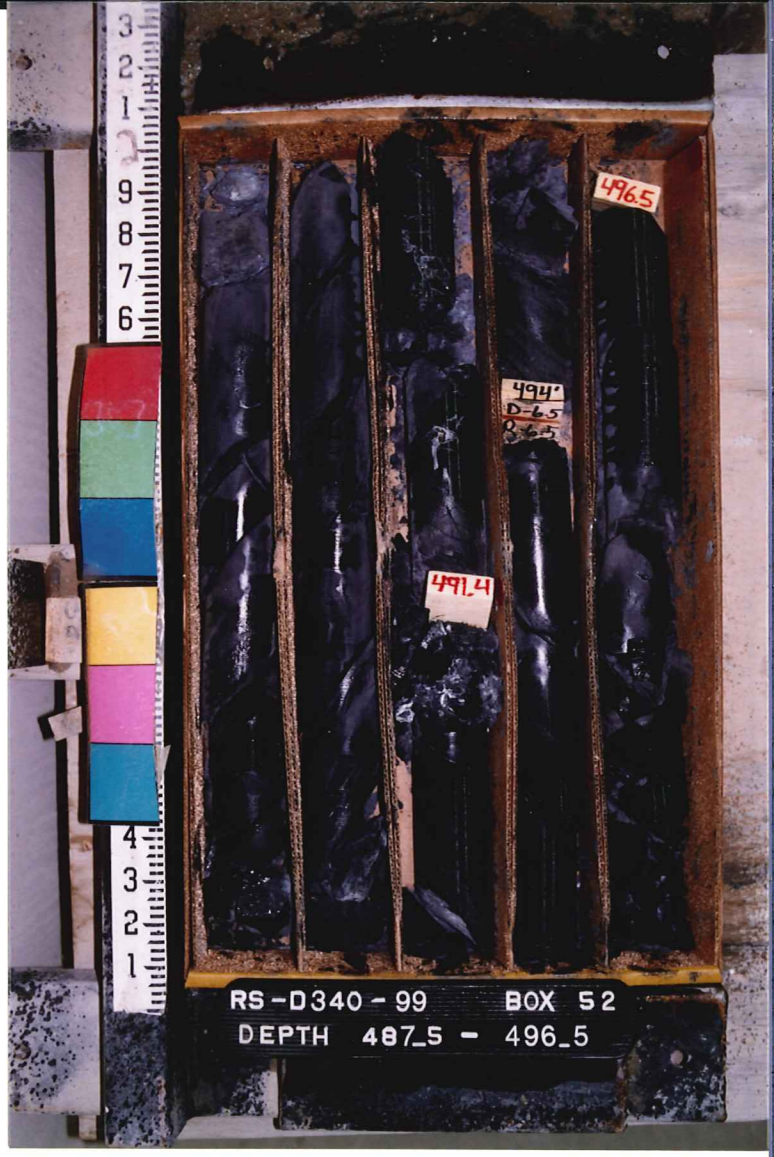

446
450.3
RS-D340-99 BOX 48
DEPTH 445.0-454.0

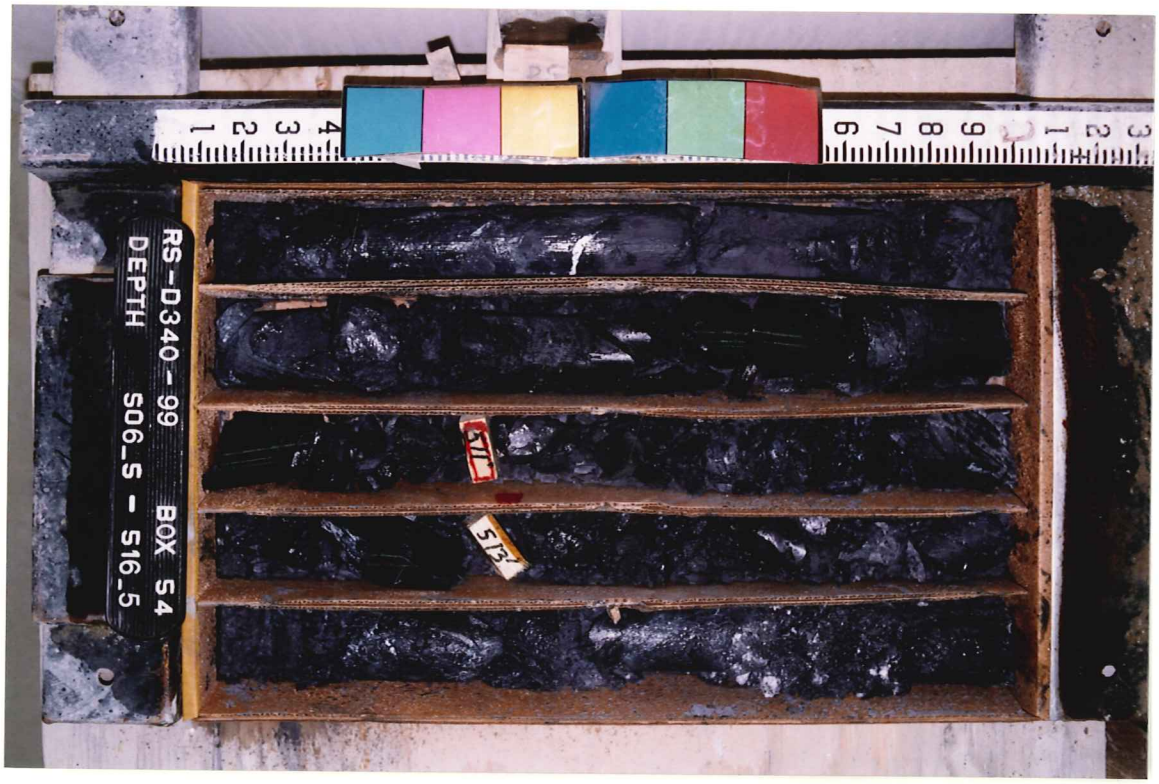
RS-D340-99 BOX 50
DEPTH 464_5 - 474_5

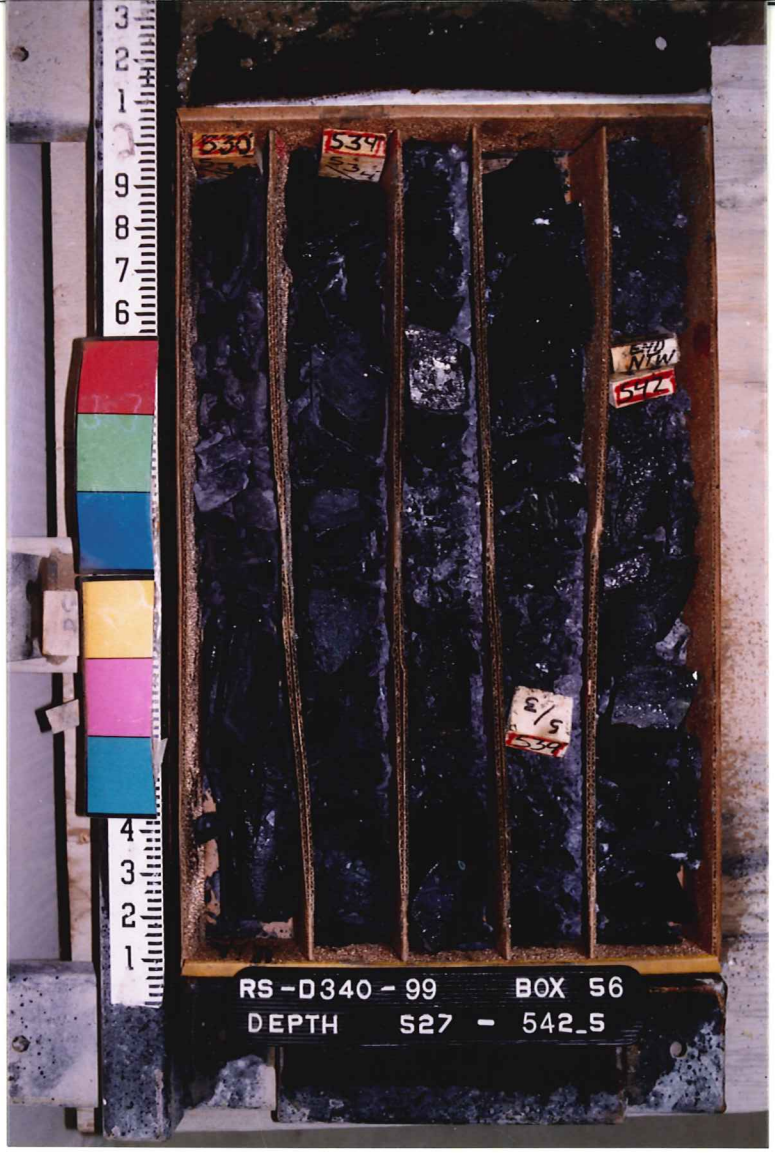

RS-D340-99 BOX 49
DEPTH 454 - 464_5

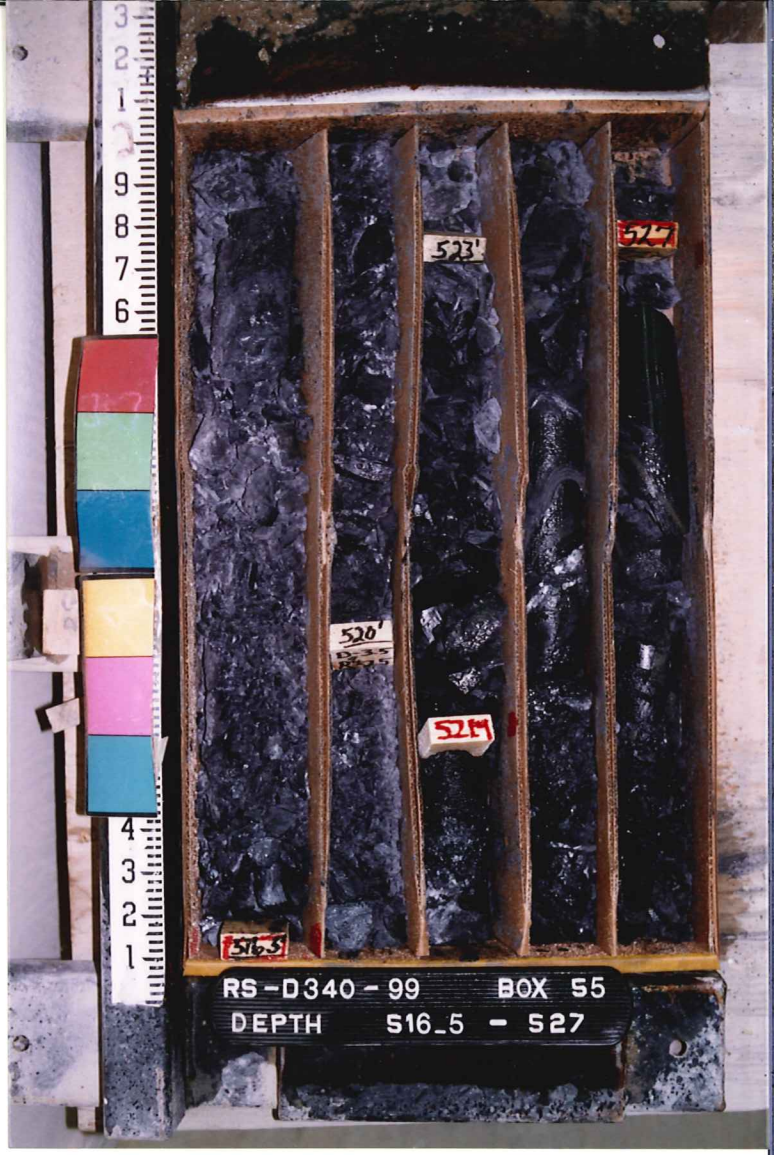

RS-D340-99 BOX 51
DEPTH 474_5 - 487_5

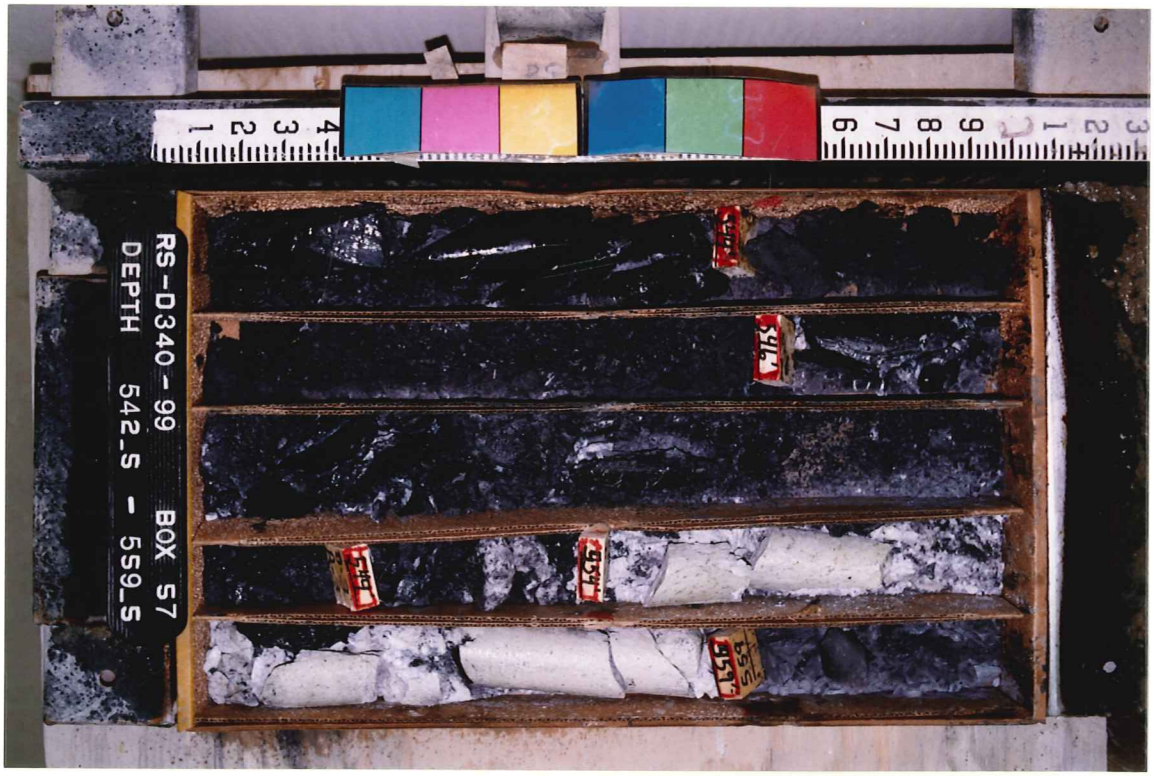
506
RS-D340-99 BOX 53
DEPTH 496_5 - 506_5

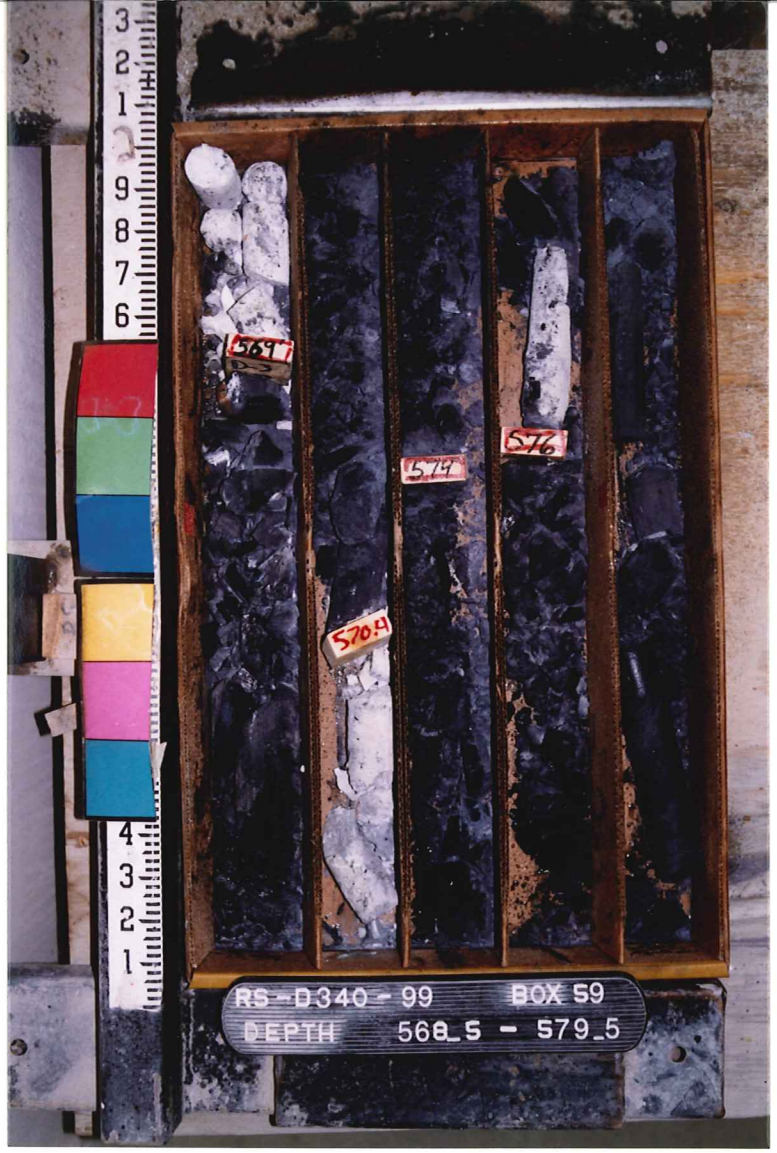

496.5
494'
491.4
RS-D340-99 BOX 52
DEPTH 487_5 - 496_5

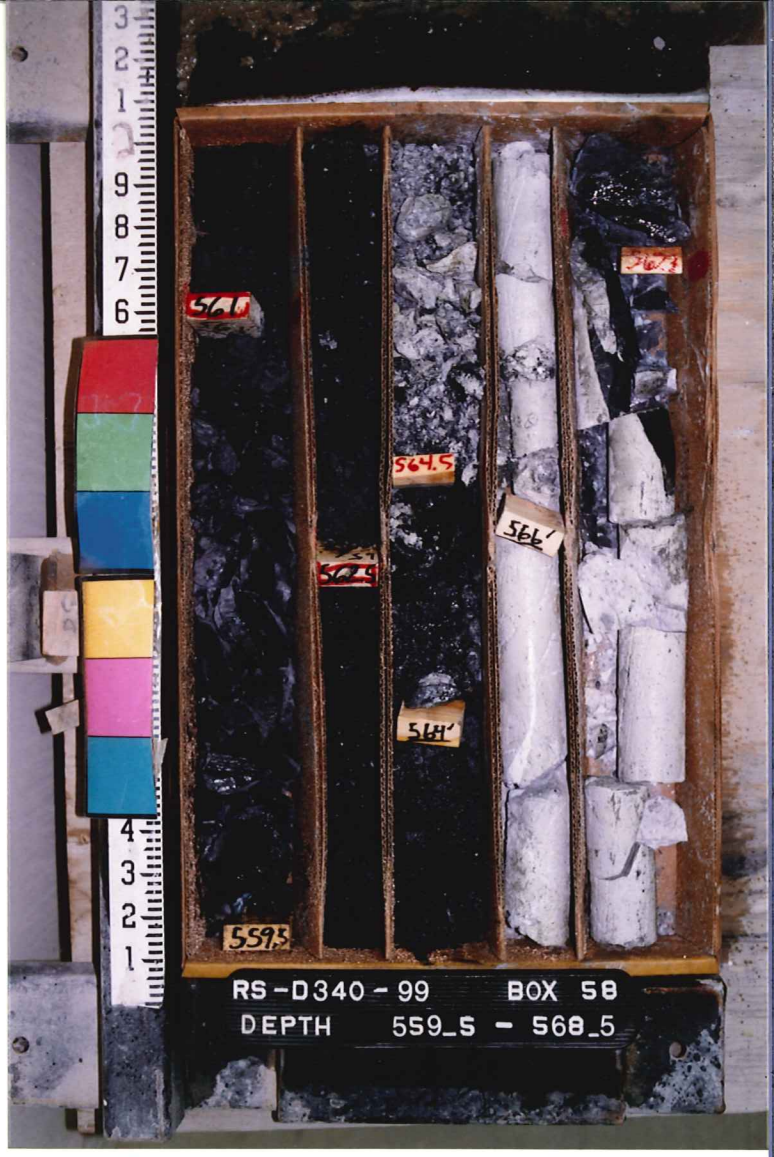

RS-D340-99 BOX 54
DEPTH 506_5 - 516_5


RS-D340-99 BOX 56
DEPTH 527 - 542_5

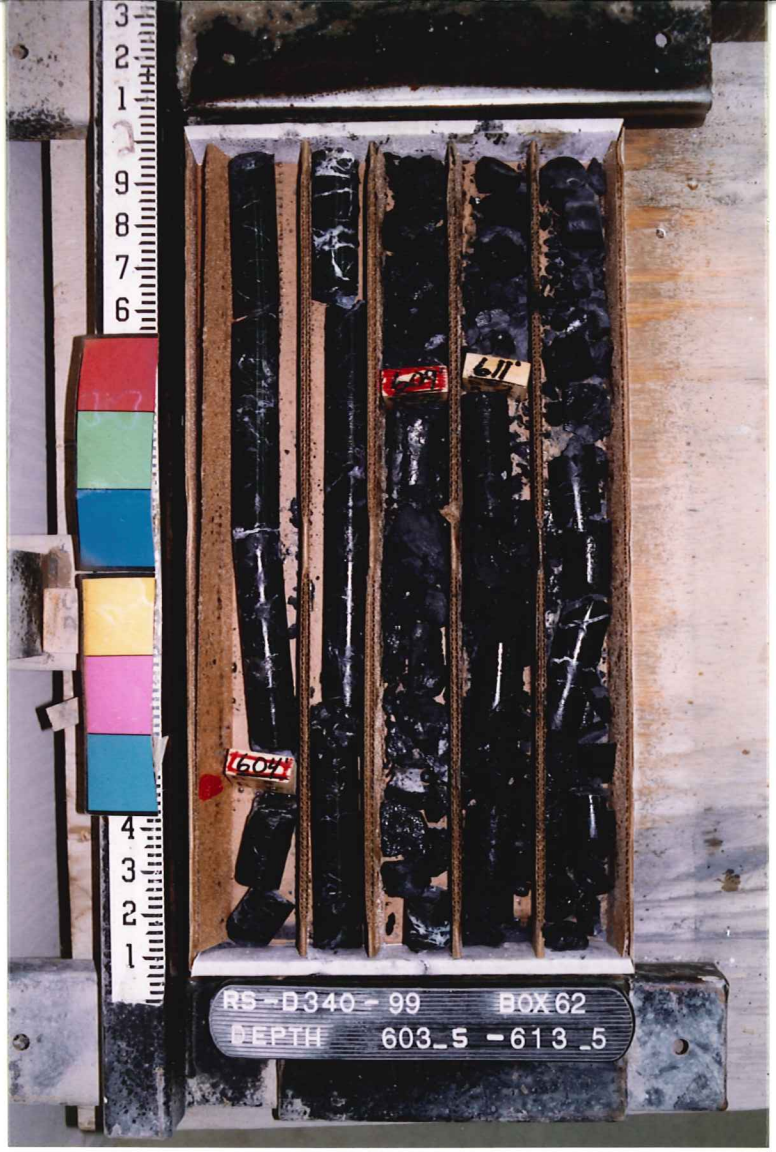

RS-D340-99 BOX 55
DEPTH 516_5 - 527

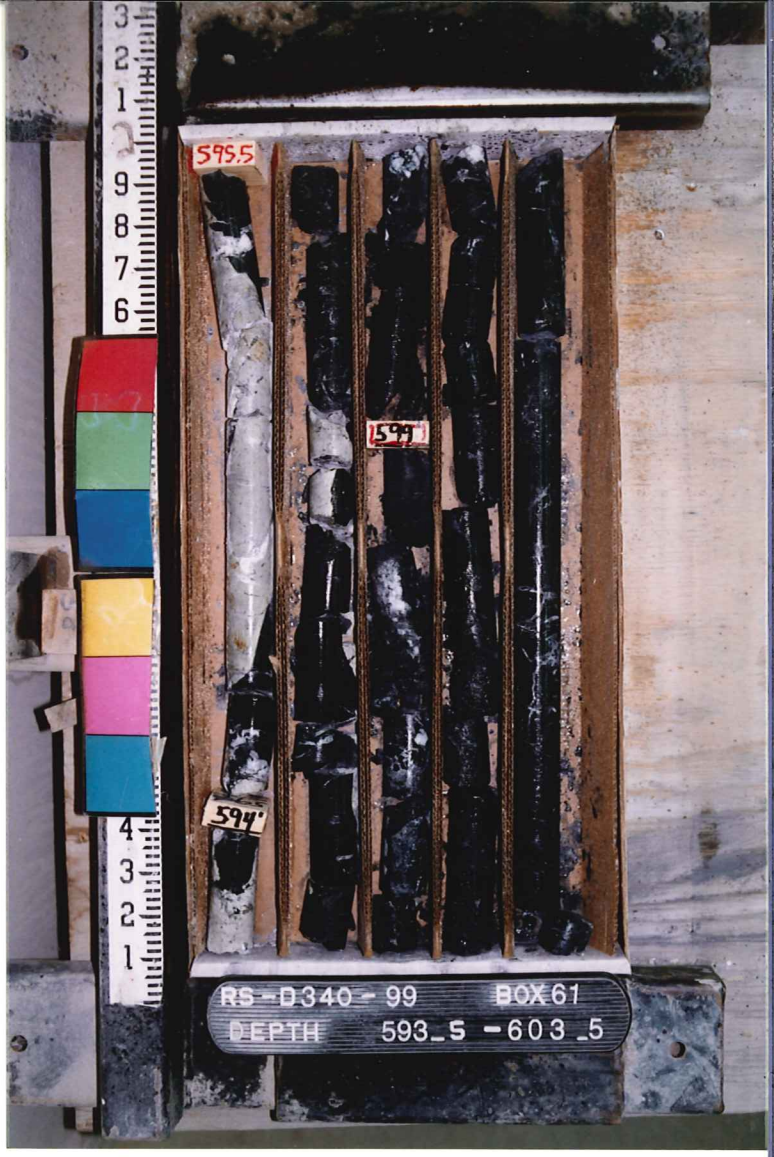

RS-D340-99 BOX 57
DEPTH 542_5 - 559_5


RS-D340-99 BOX 59
DEPTH 568_5 - 579_5

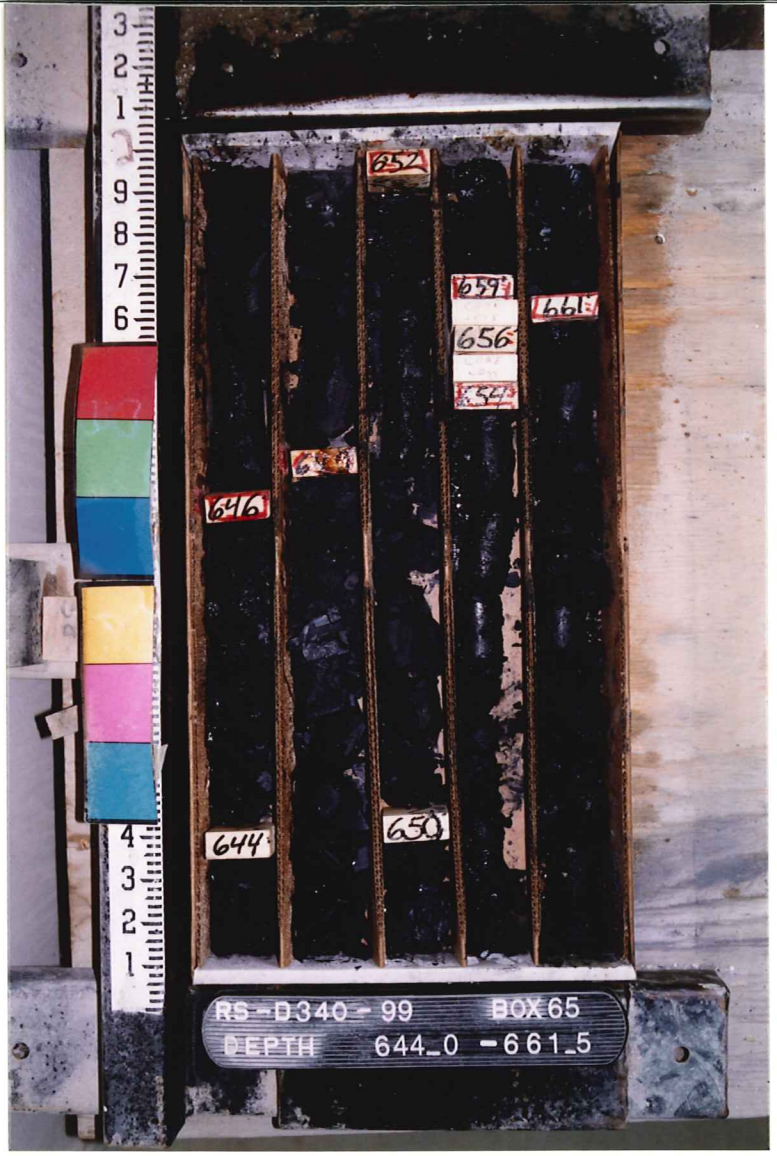

RS-D340-99 BOX 58
DEPTH 559_5 - 568_5

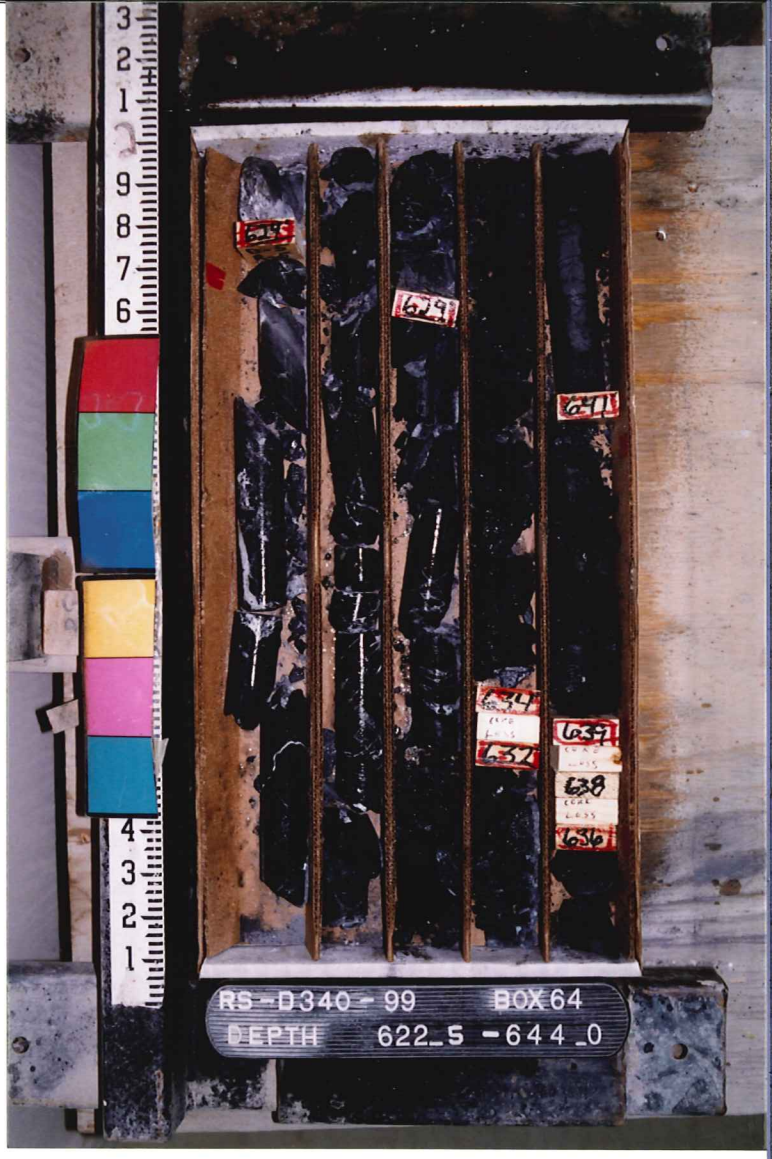
RS-D340-99 BOX 60
DEPTH 579_5 - 593_5


RS-D340-99 BOX62
DEPTH 603_5 -613_5
604'
611'

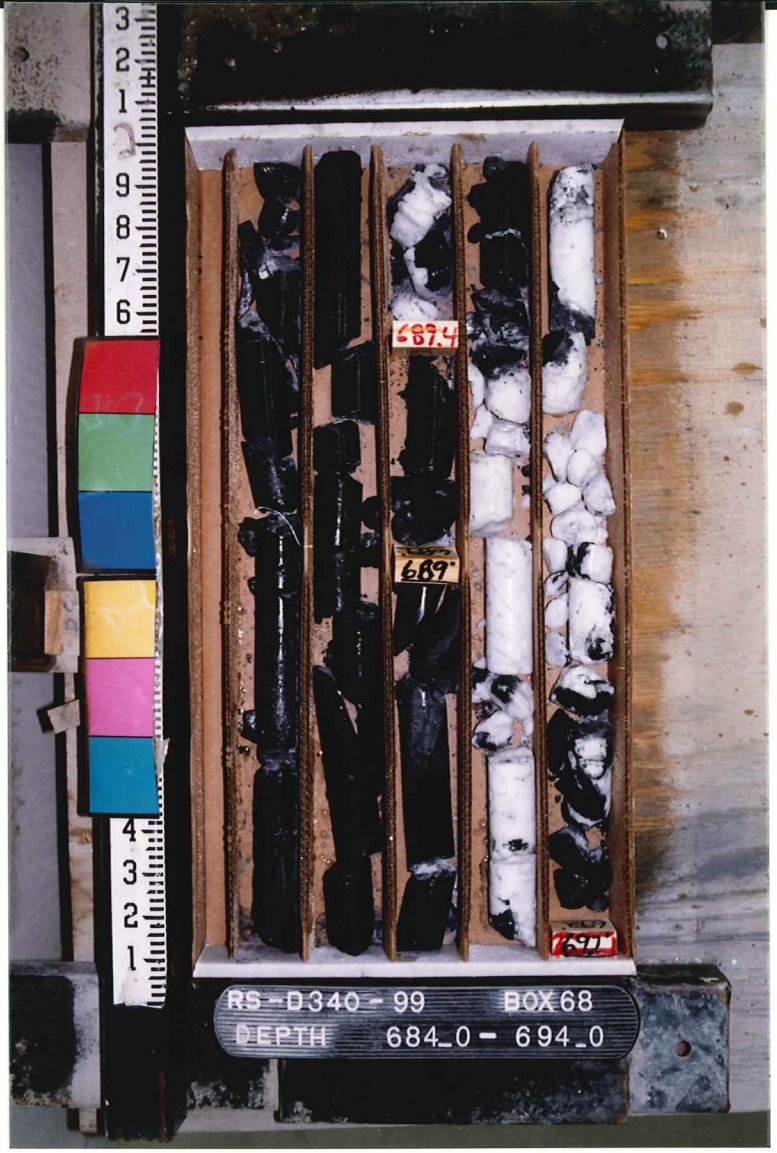

RS-D340-99 BOX61
DEPTH 593_5 -603_5
595.5
599'
594'

RS-D340-99 BOX63
DEPTH 613_5 -622_5
616'


RS-D340-99 BOX65
DEPTH 644_0 -661_5


RS-D340-99 BOX64
DEPTH 622_5 -644_0

RS-D340-99 BOX66
DEPTH 661_5 -672_5


RS-D340-99 BOX 68
DEPTH 684_0 - 694_0
687.4
689'
691'

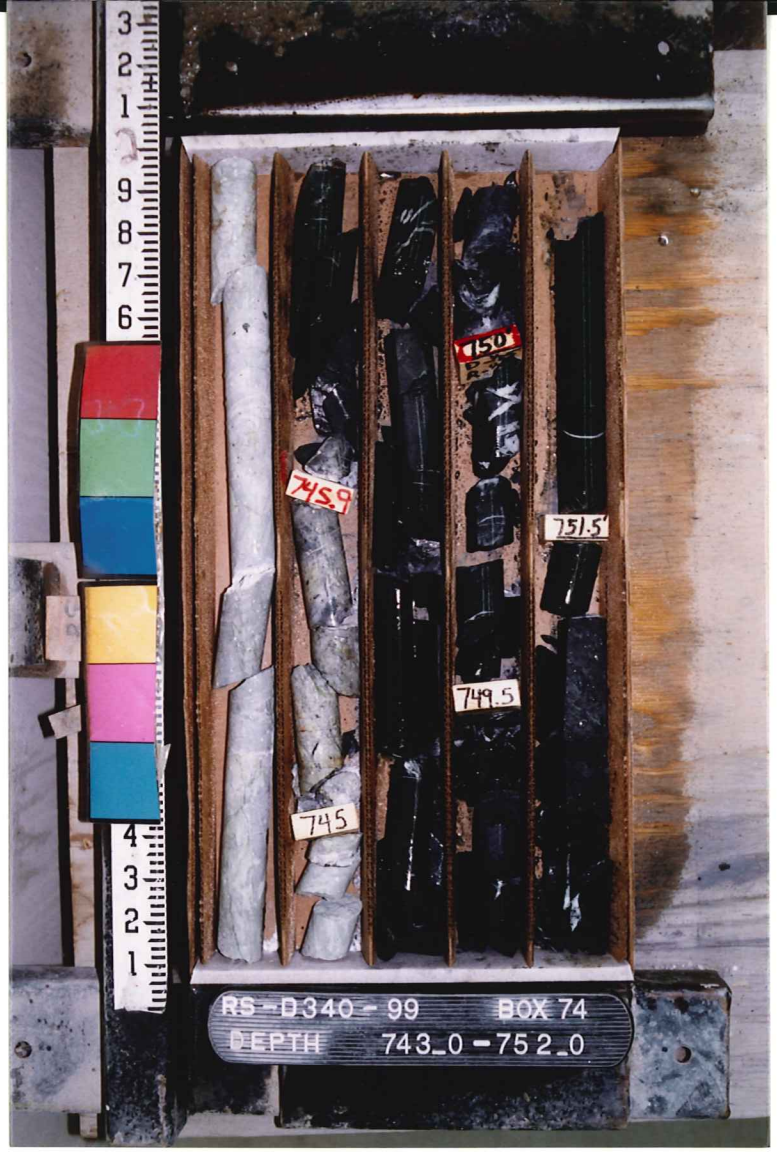
RS-D340-99 BOX 67
DEPTH 672_5 - 684_5
674
675.5
673
.189
681'
679'

RS-D340-99 BOX 69
DEPTH 694_0 - 704_5
695
700

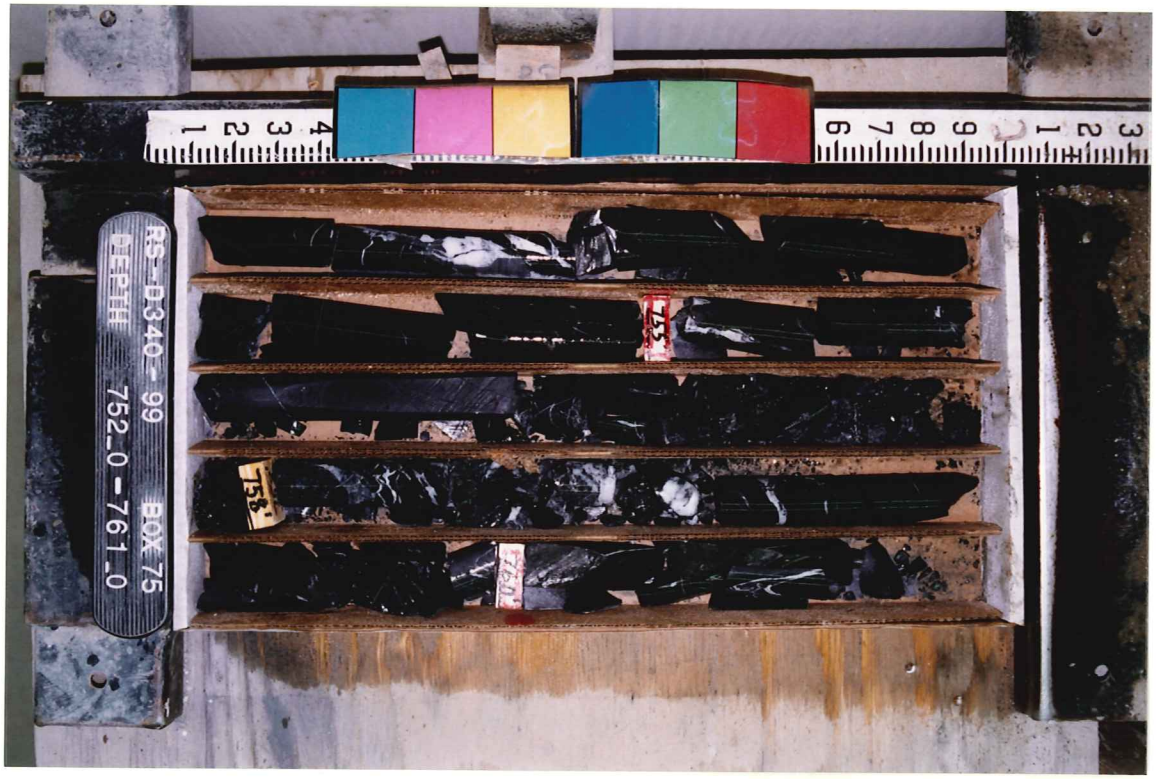
RS-D340-99 BOX 71
DEPTH 714_0-724_0
715
718.2
720
723
723.4
723.8

RS-D340-99 BOX 70
DEPTH 704_5-714_0
703
707
707.5
709.8
710

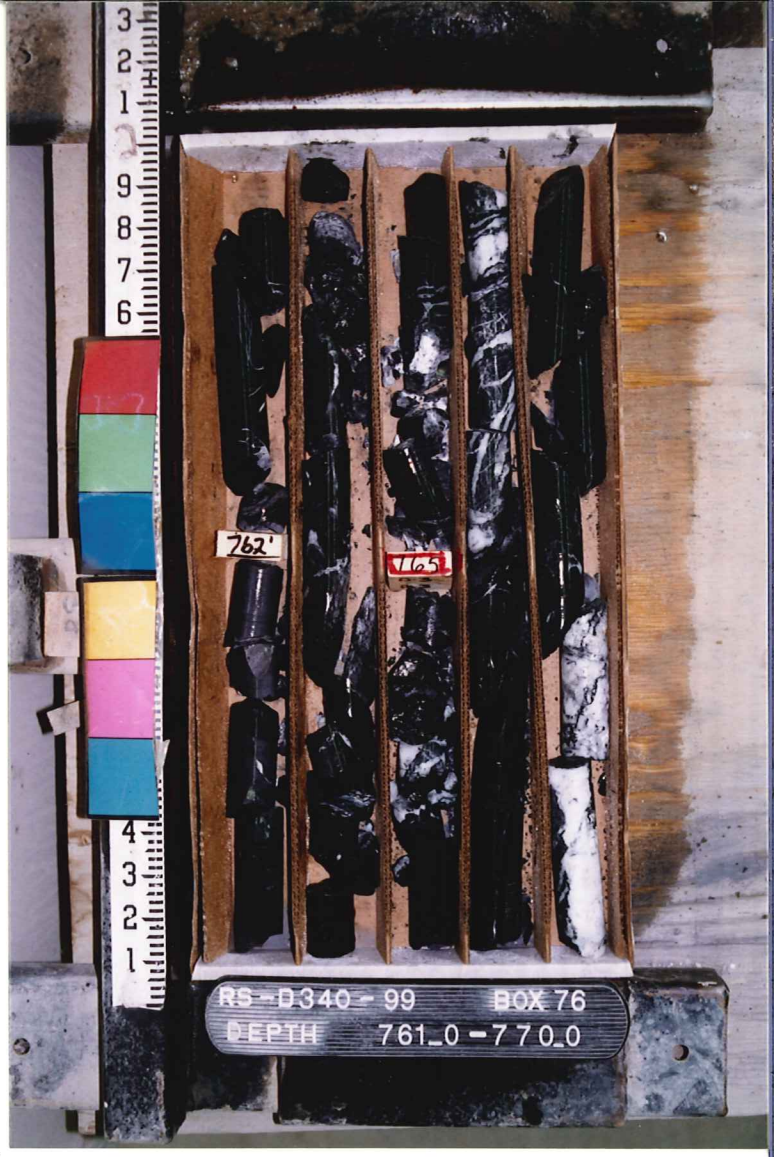
RS-D340-99 BOX 72
DEPTH 724_0-733_0
724.5
730
728
728


RS-D340-99 BOX 74
DEPTH 743_0-752_0
745.9
750
751.5
749.5
745

RS-D340-99 BOX 73
DEPTH 733_0-743_0
742.5
738.1
740
733.2
735


RS-D340-99 BOX 75
DEPTH 752_0-761_0
755
753
756

RS-D340-99 BOX 77
DEPTH 770_0 - 779_5


762'
RS-D340-99 BOX 76
DEPTH 761_0 - 770_0

RS-D340-99 BOX 78
DEPTH 779_5 - 789_5

RS-D340-99 BOX 80
DEPTH 799_5-808_5

RS-D340-99 BOX 79
DEPTH 789_5-799_0

RS-D340-99 BOX 81
DEPTH 808_5-818_0

830'
835
831
827'
834'
RS-D340-99 BOX83
DEPTH 827_0-835_0

825
819
820
823.3
RS-D340-99 BOX82
DEPTH 818_0-827_0

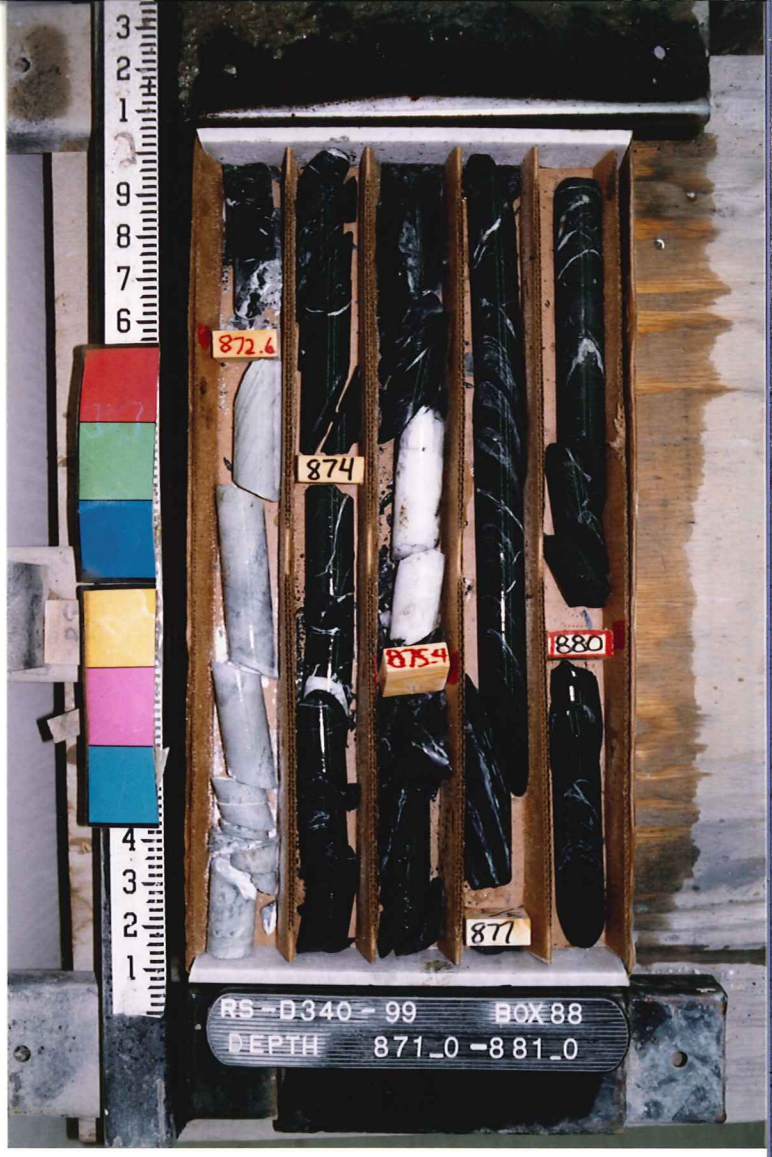
RS-D340-99 BOX84
DEPTH 835_0-844_5

RS-D340-99 BOX86
DEPTH 853_0-862_0

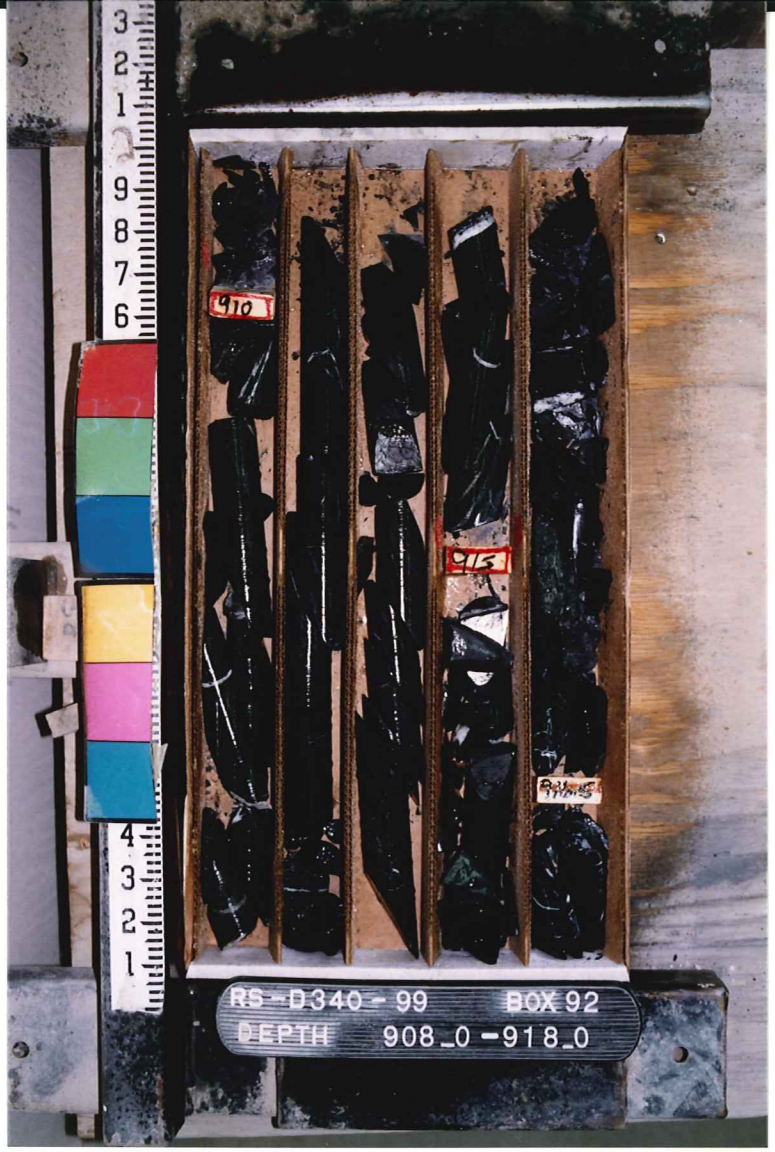
RS-D340-99 BOX85
DEPTH 844_5-853_0

RS-D340-99 BOX87
DEPTH 862_0-871_0

890
887
885
882.9
RS-D340-99 BOX 89
DEPTH 881_0-890_0


872.6
874
875.4
880
877
RS-D340-99 BOX 88
DEPTH 871_0-881_0

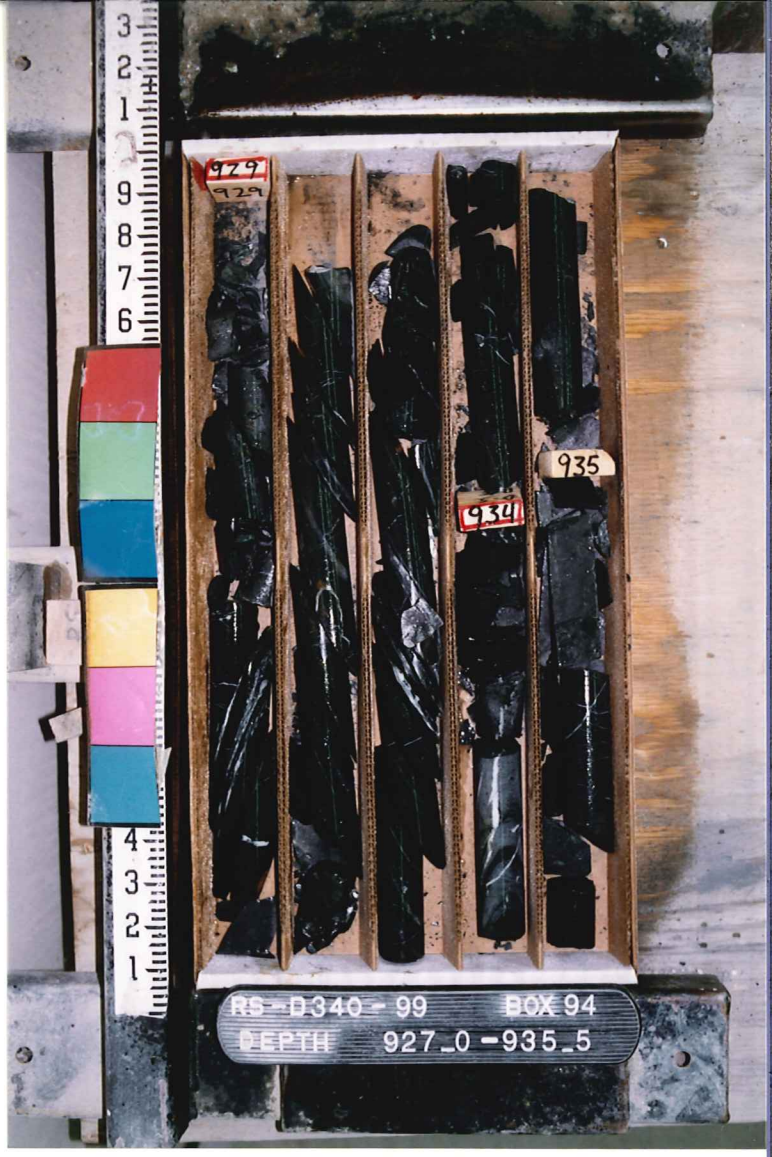
892
889.5
RS-D340-99 BOX 90
DEPTH 890_0-899_0


RS-D340-99
BOX 92
DEPTH 908_0 -918_0

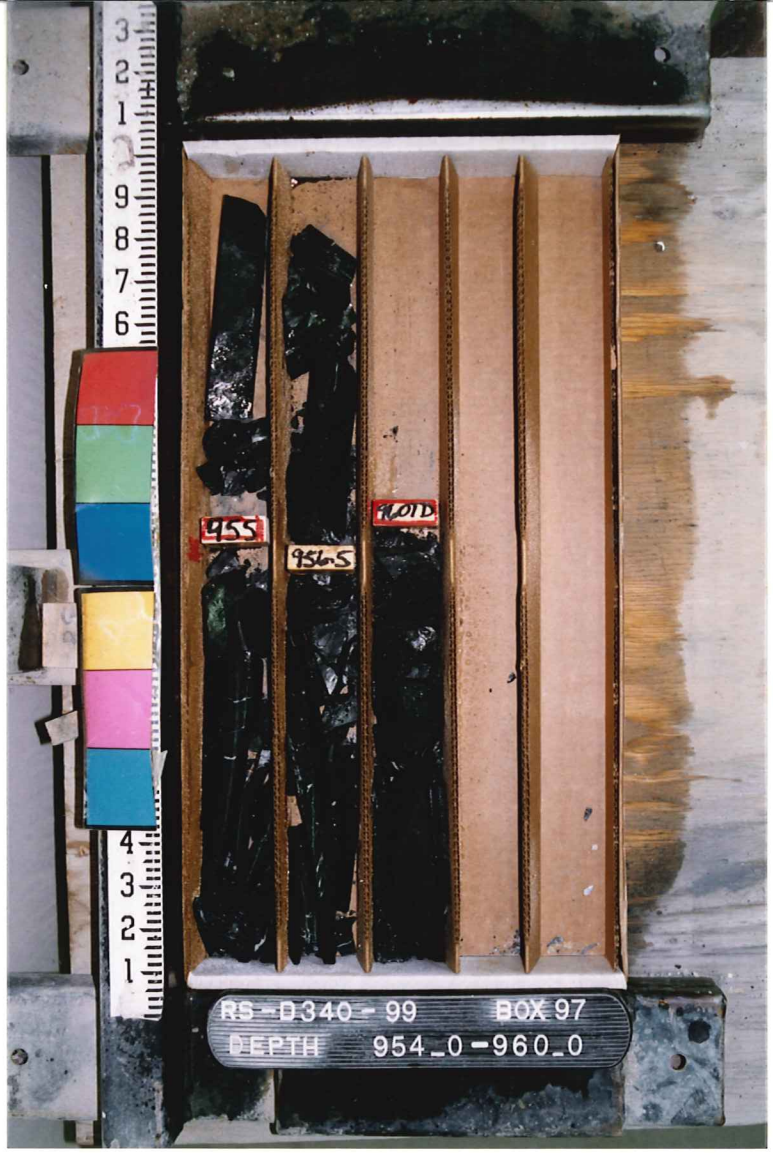
RS-D340-99
BOX 91
DEPTH 899_0 -908_0

RS-D340-99
BOX 93
DEPTH 918_0 -927_0

937.5
940
943.5
RS-D340-99 BOX 95
DEPTH 935_5-945_0

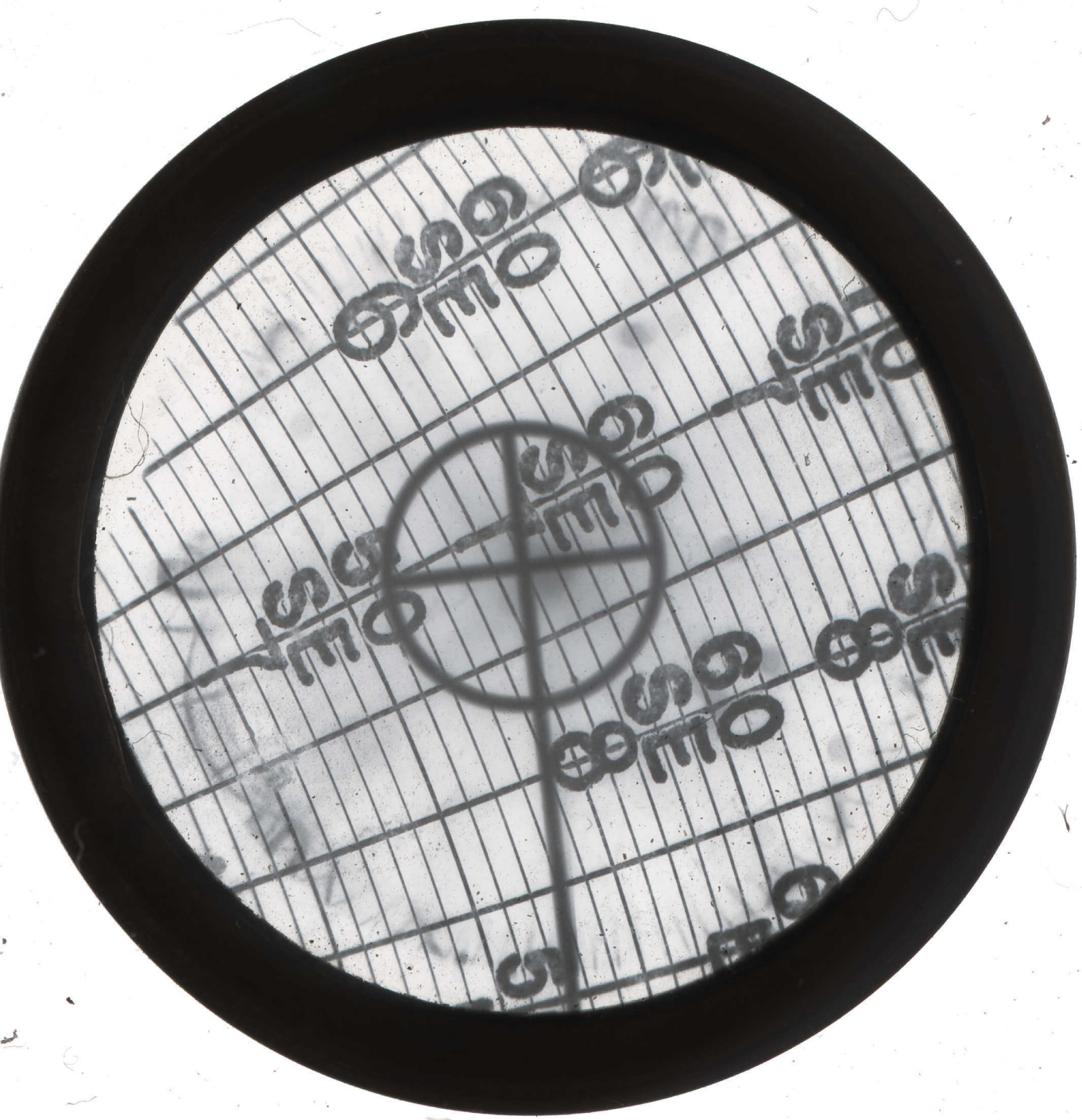

929
934
935
RS-D340-99 BOX 94
DEPTH 927_0-935_5

946
950
953
RS-D340-99 BOX 96
DEPTH 945_0-954_0


955
956.5
RS-D340-99
BOX 97
DEPTH 954_0-960_0

WELL RSD 340 99
DEPTH 40
PICTURE NO.
INCLINATION -33
OBS. DIR.
COR. DIR.
TOOL FACE
RUN BY
DATE 2-16-99
CHECKED BY

sperry-sun
DRILLING SERVICES



WELL RSD 340.99

DEPTH 200

PICTURE NO.

INCLINATION

OBS. DIR.

COR. DIR.

TOOL FACE

RUN BY Hughes

DATE 3-4-99

CHECKED BY

sperry-sun

DRILLING SERVICES

SE
8
60
SE
8
60
SE
7
60
SE
7
60
SE
6
50
SE
7

WELL RSD 540.99

DEPTH 400

PICTURE NO.

INCLINATION

OBS. DIR.

COR. DIR.

TOOL FACE

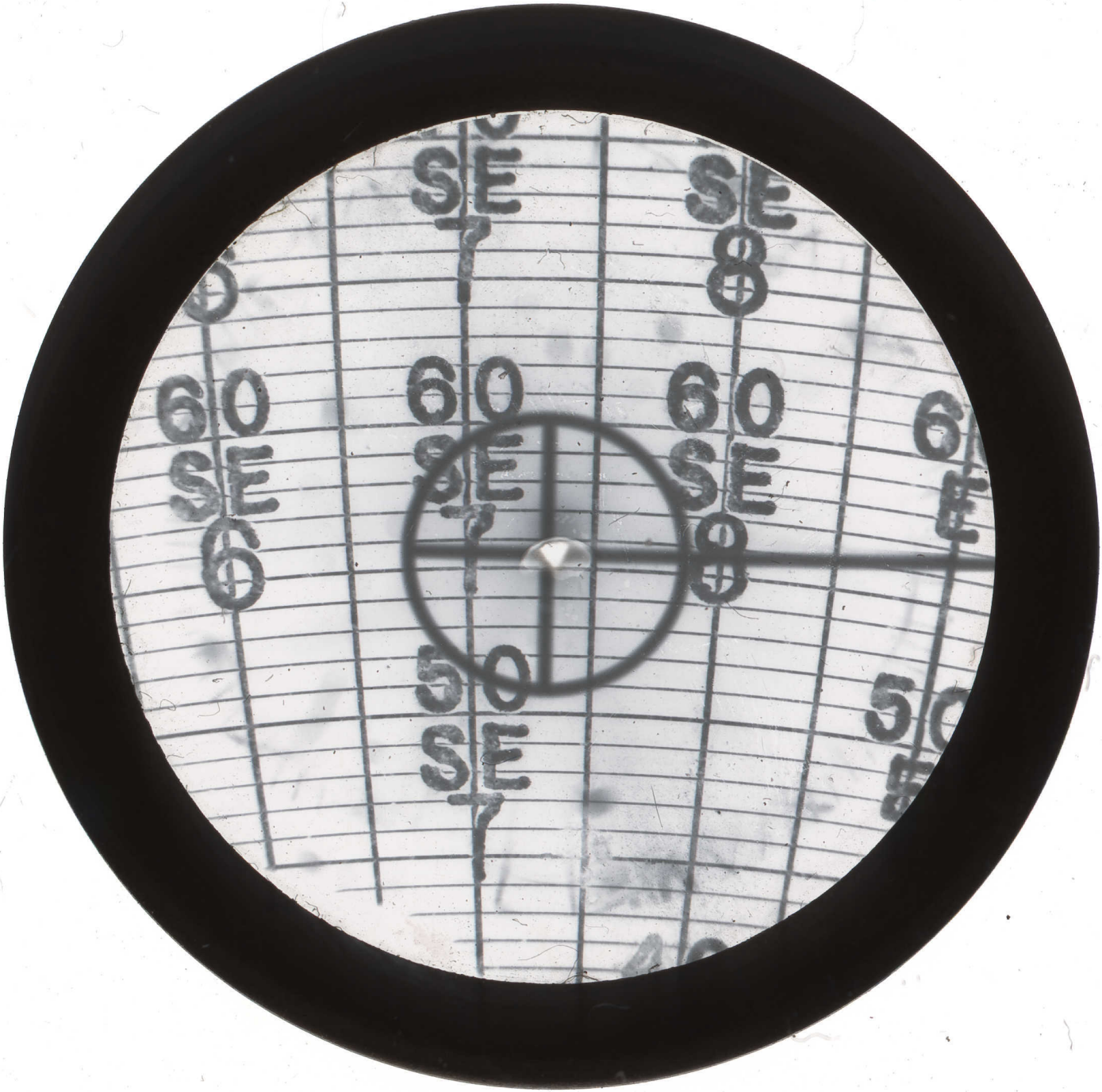
RUN BY Hughes

DATE 3.4.77

CHECKED BY

sperry-sun

DRILLING SERVICES


SE
SE
60
60
60
SE
SE
SE
50
SE

WELL RSD 34099

DEPTH 850

PICTURE NO.

INCLINATION -33

OBS. DIR.

COR. DIR.

TOOL FACE

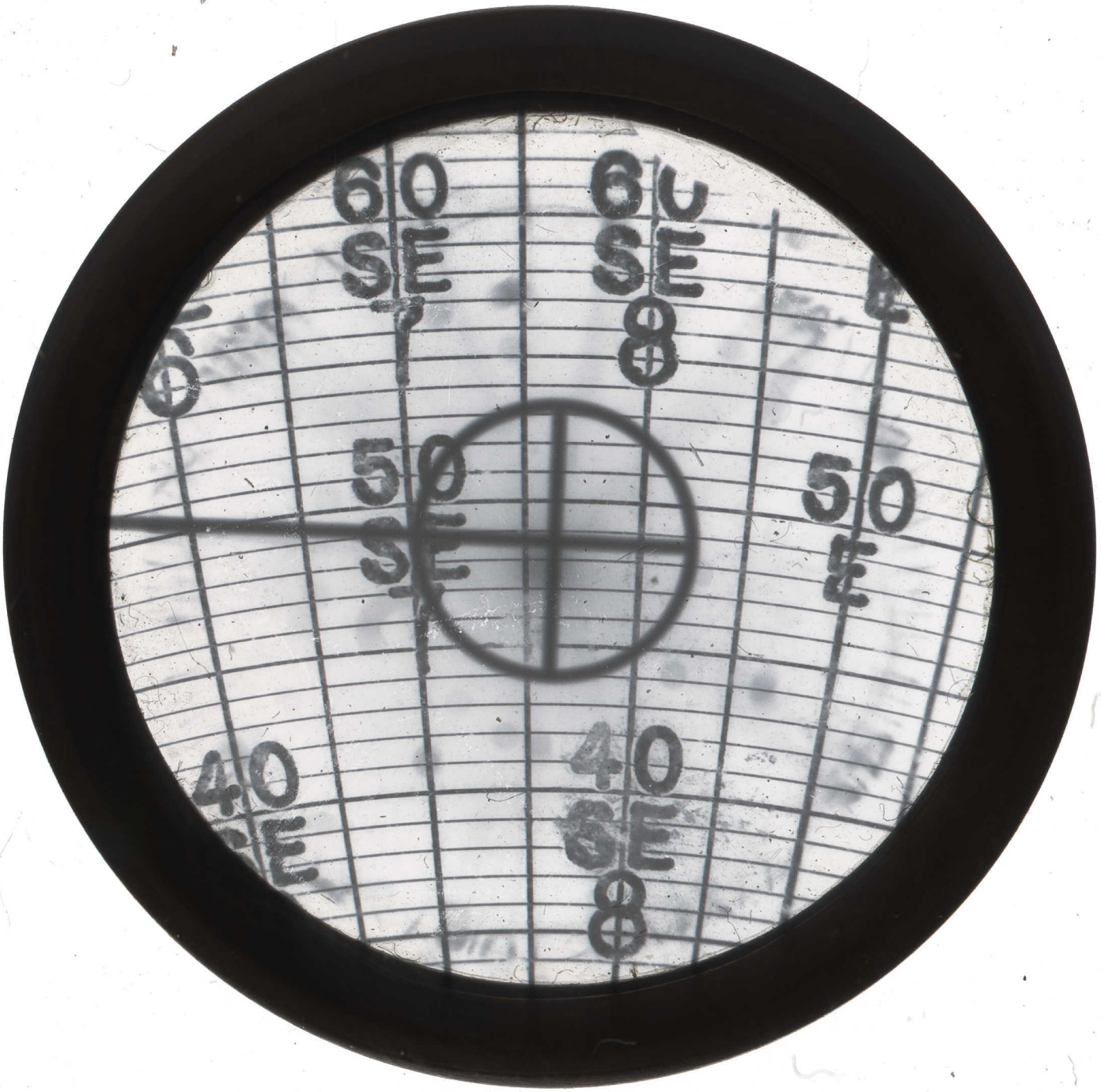
RUN BY

DATE 3-4-99

CHECKED BY

sperry-sun

DRILLING SERVICES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SE
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SE

WELL RSD 340 99

DEPTH 600

PICTURE NO.

INCLINATION

OBS. DIR.

COR. DIR.

TOOL FACE

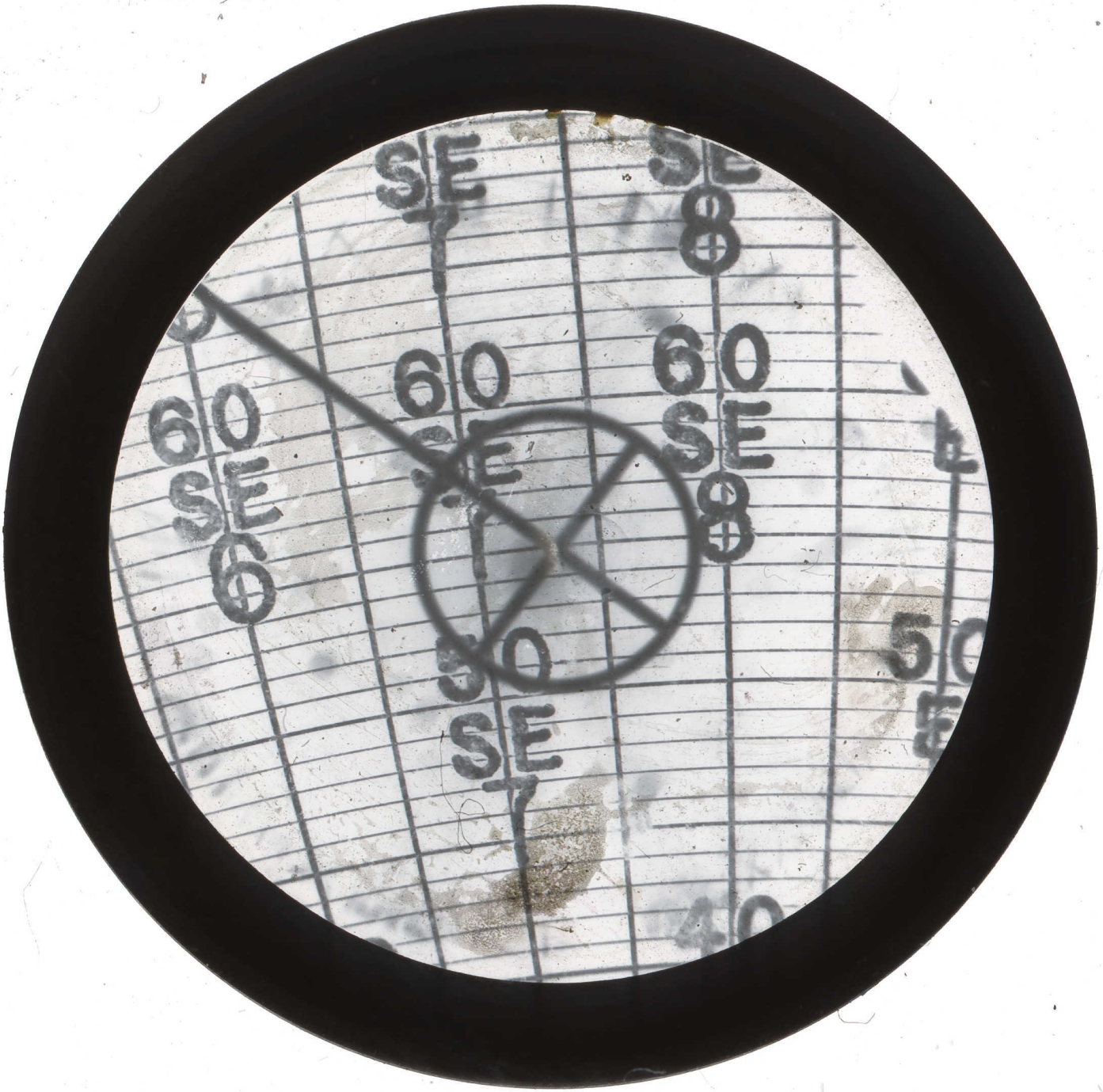
RUN BY Hughes

DATE 8-1-99

CHECKED BY

sperry-sun

DRILLING SERVICES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