

**Heath & Sherwood**  
**Installation List - Samplers**  
 Note: Excludes projects by Consep, Australia  
 Since 1997 - Updated: Nov 2011



<b>Delivery Date</b>	<b>Customer /Consultant/ Project Name</b>	<b>Sampler Types</b>	<b>Application</b>	<b>H&amp;S Partner</b>
Apr 2012	PCS Phosphate, Florida, USA	PD Sampler		
Apr 2012	Teck Alaska, USA Red Dog	(7) PD Samplers		
Apr 2012	HBMS, Flin Flon	(2) PPV06, PPV08		
Apr 2012	Aurizon Mines, Quebec	TMC10		
Apr 2012	Condumex	(2) PD Samplers		
Dec 2011	NVI Mining Campbell River, BC	(1) PD Sampler		
Dec 2011	Minera Cuzcatlan Mexico	(2) PD Samplers		Hosokawa
Dec 2011	Freeport, Sierrita Arizona, USA	(2) PD Samplers		
Dec 2011	Semafo, Niger	PD Sampler		
Dec 2011	Gibraltar Mines BC, Canada	PD Sampler		
Dec 2011	Samarco / Formation Capital / Idaho Cobalt, USA		Flotation Feed Concentrate Primary Tails	Legacy
Dec 2011	VALE Clarabelle Mill Sudbury	(13) TMC & PPHNB / PPVNB	To replace samplers feeding Courier Analyzer	

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Nov 2011	Century Mining Quebec	(1) PD Sample		
Nov 2011	Consep Australia	(2) PD Samplers		Consep
Nov 2011	Kumtor Gold Kyrgystan	PPV08 Sampler		
Nov 2011	Hosokawa Mexico	(3) PD Hand Samplers		Hosokawa
Sept 2011	Iron Ore Co. of Canada Bechtel	M1330 Primary, ICE w/ inlet fishtail launder & 30" transitioned discharge, 4810 Secondary, 4510 Tertiary w/ installation module, access ladder & handrails		
Sept 2011	HEMCO Nicaragua		Cyclone OF Thickener Underflow Tails	
Sept 2011	Mystery Creek Nixon Fork, Alaska	M1860		
Sept 2011	Agnico Eagle Goldex Mine Quebec	4 metre PD Sampler		
Aug 2011	Intrepid Potash, New Mexico / AMEC	(5) M5830 Custom Samplers		
Aug 2011	Kinross Kettle River / Samuel Eng	M1850	Leach Concentrate	

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July 2011	Northgate Young – Davidson, Kirkland Lake, Canada	TMC18 / Diverter PPVNB10 / 5 gal swirl / 4510 TMC08 1330 / ICE / 4810 w/ heater TMC16 / 4810 TMC300350 / 4810 w/ heater	Cyclone OF Flotation Tails Regrind Flotation Conc Cyanide Destruction Feed Tails Flot Concentrate Leach Tails	
July 2011	KUCC-Rio Tinto, USA	(1)1330 w/ ICE TMC18 / Diverter / 4810 TMC08 PPH06 PPH20 1860 Diverter Swirl Tanks		
July 2011	KUCC-Rio Tinto, USA	-4810-3500 Vezin -(2)1860 -(5) M4810 Tertiary Samplers -(3) Integrated Diverters		
July 2011	Minera Fresnillo Mexico		Sampling Knelson Concentrator	Hosokawa
July 2011	Minero de Nicaragua SA	a) 1330 / ICE / 1860  b) PPVNB08 / 5 gal Swirl / 1850	a) Cyclone Overflow 512 – 910 m3/h (740 m3/h nominal) % Solids: 22 - 35%  b) CIP Tails Sampler 360-640 m3/h (520 m3/h nominal) % Solids: 35 - 45%	
May 2011	KUCC, Rio Tinto, USA	M5680 Multiplexer DeMultiplexer		
Apr 2011	Yukon Zinc, Canada	PD Sampler		

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Feb 2011	Fairbanks Gold, Alaska, USA Kinross	-Primary 1330 Linear, 30" pelican, SS cutter cap -Custom Feedbox w/ two inlet launders fed by (8) 12" pipes -ICE® w/ open bottom, mounted directly over distributor -Secondary Model 4810 w/ tri-cutters -Tertiary Model 4810 w/ quad-cutters	Plant Head Sampling System  7,000 to 10,500 USGPM 55 to 58% solids  H&S Sketch SK3696 & 3899	
Feb 2011	Stillwater Mining Nye, Montana, USA	(1) PPV06		
Feb 2011	Barrick Bulyanhulu, Africa	(2) PD Hand Samplers		
Nov 2010	KUCC, Rio Tinto, USA	PPVNB24 w/ 10 gal Swirl Tank TMC06 TMC30 w/ Diverter (3) 1860 (2) PPV20		
Nov 2010	Vale INCO Copper Cliff, Canada	(1) PD Sampler		
Oct 2010	OK Tedi PNG	(2) PD Samplers		

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Sept 2010	Newmont, Carlin /USA Hanlon Eng'g / Mill 5 Flotation Concentrate Filter Press Expansion	A) LDLE, ICE w/ custom feed box & inlet launder, Model 4810 Secondary w/ dual cutters  B) Model 4810 Intermittent	A) Thickener Feed Sampling Inlet Pipe Diameter: two (2) 6" nom. pipe Liquids Flow Rate: 240 dstph Pulp Flow Rate: 1190 USGPM % Solids: 10.8% froth Factor: 2.0  B) Final Concentrate Inlet Pipe Diameter: 3" nom. pipe Pulp Flow Rate: 135 USGPM % Solids: 65% froth Factor: 2.0	
June 2010	Teck Highland Valley Copper, Canada	(3) PD Samplers		
May 2010	Goldcorp, Musslewhite, Canada	(1) PD sampler		
May 2010	Newmont, Phoenix / ICPE, USA	Model 1500 / ICE / 4810 Dual 2.5%	<u>Thickener UFlow</u> 170 USGPM 3" inlet 50% solids Primary Cutter opening = 1 1/2" Cutter speed = 6" / sec. Increment Size = 0.7 gals. Timer Setting = 3.3 mins. Primary Sample / hour = 12.7 gals. Secondary Sample Cutters @ 5% Final Sample Collected /8 hours= 5 gals.	
Apr 2010	Xstrata – Raglan, Canada	(1) PPV06		
Apr 2010	OSISKO, Quebec	(3) TMC36, 11616-3200 Diverters (4) TMC24, 4720 (2) TMC26, 4720	Cyclone OF, Sec & Tert Regrind Circuits, + 850 cu.m/h CIP Leach Circuit Tails Leach Circuit Tails	

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Apr 2010	Alexis Minerals	(1) PPVNB08 / 5 gal swirl / 1850		
Apr 2010	Century Mining, Quebec	(1) PD sampler		
Apr 2010	Mount Polley	(1) PPVB04		
Apr 2010	PCS Picadilly, New Brunswick	(2) 42"ARM (1) 12" PPVNB (12) Shark Fin Spool Samplers (3) K40 Analyzer Frames	Raw Ore Conveyors #1 & #2, 425 tph, 1.04m/s, 5hp Scavenger Cyclone Feed Built per PCS sketch	
Feb 2010	Alexis Minerals Mine Lac Herbin	Various in-line samplers + M1850 Secondary Sampler		
Feb 2010	FNX Mining, Sudbury	Sample Crusher for Bulk Material Sampling Tower		
Jan 2010	Newmont, Carlin / ICPE / Mill 5 Mag-Sep Circuit	(1) Model 4810 Intermittent Vezin  (2) Low Profile LDLE (14" stroke) c/w M4510 Rotary Vezin Secondary (2 x 2.5% cutters each)  Water Flush systems on all	Final Cleaner Conc, 15% solids, 50 gpm  Cleaner Tailing (600 gpm) & Combined RE Conc Samplers, (350 gpm)	
Jan 2010	Continental Conveyor	24" ARM Sampler		
Aug 2009	La Cienega, Mexico	M4720 Intermittent	Knelson Concentrator Discharge Sampler 55% solids, 7.5 lpm, 20% - 150 microns	

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Dec 2009	Wesdome Kiena, Quebec	PD sampler		
Nov 2009	Grupo Sepromi, Mexico	(4) PD samplers		
Nov 2009	IOC – Labrador	PPVNB12		
Oct 2009	Vale Inco - Manitoba	36" ARM, Feeders, 4810, Collector		
Oct 2009	Kennecott Utah Copper	(6) Model 4810 Tertiary Samplers		
Sept 2009	Kumtor, Kyrgystan	14" PPV sampler		
Sept 2009	Agnico Eagle, LaRonde	2 metter PD sampler		
Aug 2009	Agnico Eagle, Quebec	(3) 2 meter PD samplers, (2) 3 meter PD Samplers		
Aug 2009	Hosokawa Mexico	(3) 2 meter PD samplers & (3) 5 meter PD samplers		Hosokawa
Aug 2009	Farallom Mexicana	1 meter & 2 meter PD samplers		Hosokawa
Aug 2009	Vale Inco - Manitoba	Model 1330 w/ slurry Junction & Feed Box, ICE, integrated water flushing / (1) TMC 10 Sampler		
Aug 2009	Xstrata – Strathcona	Model 1350 w/ Feed Box & ICE, Model 1850 Secondary & Custom Diverter		

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July 2009	Lakeshore Gold, Timmins	42" ARM Sampler		
July 2009	Xstrata – Strathcona	Model 1350 w/ Feed Box & ICE, Model 4810 Secondary		
June 2009	Vale Inco – Manitoba	Model 1330 / 4810 Continuous		
June 2009	Xstrata – Strathcona	(2) 2 meter & (2) 3 meter PD Samplers		
May 2009	Aurizon Mines, Quebec	Model 3630 Sampler		
May 2009	Intrepid Potash	(2) 4" PPH, (1) 6" PPH, (3) Model 1840, (1) 8" PEX Sampler		
May 2009	Vale Inco, Voiseys Bay	TMC 14 Sampler		
May 2009	Wideco, USA	1 meter PD & 2 meter PD Samplers		
May 2009	Agnico – Eagle, Mexico	3 meter PD Sampler, 5 meter PD Samper		
May 2009	IOC, Labrador City	(2) PPV08, (1) PPV10		
May 2009	Minera Tizapa, Mexico	Model 4730 / 1850		Hosokawa
May 2009	La Cienega, Mexico	Model 4730 / 4510		Hosokawa



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April 2009	Barrick Tech Centre	1 meter PD sampler		
Mar 2009	Agnico-Eagle, Quebec	4 meter PD sampler		
Mar 2009	Absolute USA	(5) 5 meter PD Samplers		
Mar 2009	Wesdome / Kiena Gold Mine	2 meter PD Sampler		
Mar 2009	Semafo / Liptako, Niger	(4) 2 meter PD Samplers		
Mar 2009	Richmont Camflo / Island Gold Mine	5 Meter PD Sampler		
Feb 2009	Vale Inco, Manitoba	2) PPHNB06 w/ water flush, swirl tank, Model 1850		
Feb 2009	Vale Inco, Sudbury	(2) PPHNB08		
Jan 2009	Minera Mexicana	(2) 4730 Continuous Primary / 4510 Secondary		Hosokawa
Dec 2008	Penoles – Minera Madero, Mexico	(2) M4630 Primary	Lead & Copper slurry	Hosokawa
Dec 2008	Gold Resources El Aguila / Lyntek	(3) M3620/4510 Slurry Systems (6) M1850 Primary Samplers	(3) Float Feed, Bulk Tails, Zn Tails – 450 gpm, 30-35% solids, 6” vertical lines (6) Bulk, Pb, Zn, Cu, Cu-Pb Concentrate Streams + CCD Tails	Legacy Equip
Nov 2008	Quebec Cartier Mining, Canada	(2) Model 42 ARM’s, custom controls	300 – 3000 mtph, 10% moisture, 2.65 m/s, top size 1.2mm	

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Nov 2008	IOC, Rio Tinto, Canada	Tertiary Slurry Sampling System - M1330/ICE/4810 Sec & 4810 Tert w/ Install Module		
Oct 2008	Barrick Tanzania, Afriaca	Model 1850	30 m <sup>3</sup> /h, 2.5mm max size, 500micron P80	
Sept 2008	Xstrata Nickel	Model 4510-3200		
Sept 2008	HBMS, Canada	1350 w/ 24" type D	replacing worn out sampler w/ same type	
End 2008	Consolidated Thompson Mines / BBA, Canada	1330 / ICE / 4810		
Sept 2008	Newmont – Phoenix Mine, USA	1 – M1500 Yoke Sampler w/ ICE		
Aug 2008	Gibraltar Mines / Hatch, Canada	3 – TMC12 4 – TMC 20		
Aug 2008	Vale INCO – Manitoba, Canada	2 – M1330-4200 Primary Sampler w/ custom sample launder		
July 2008	Areva Resources, McClellan Lake	PPV04 / Water Flush / 3 Gal Swirl / 1850	Tailings Sampling System	
July 2008	Newmont – Phoenix Mine	1 – M 4620 Vezin 1 - M 1860 1 – M 1850	Final Concentrate Primary Rougher Tails Secondary Cleaner Scavenger Tails Secondary	
June 2008	Lac des Iles Mine, Quebec, Canada	1 – M5610-3700 Pressure Pipe Sampler – Special Design		
June 2008	Vale INCO Clarabelle, Canada	1 – PPH14 2 – TMC10, 2 – TMC06 4 – M1850		

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May 2008	Vale INCO – Copper Cliff Smelter, Canada	1 – Model 1100		
May 2008	Beaver Brook Antimony	1 – TMC06 1 - PPVNB		
May 2008	Xstrata Nickel, Smelter, Falconbridge, Canada	ARM 24”, Belt Feeder, Rotary Canister Sampler,	Nickel Oxide Belt Sampling-Complete project; design, fabricate, install & commission	
May 2008	Xstrata Nickel, Strathcona Mill Sudbury	LDLE, ICE, 4810-3500, Fishtail Launder & Feed Box w/ tramp screen, Water Spray System	Final Concentrate Sampling-Slurry	
April 2008	Teck Cominco, Red Dog, Alaska, USA	TMC 24”		
Mar 2008	Cameco – Key Lake, Canada	PPV Special 6”, 5 gal. Swirl Tank, Model 1850, Installation Module		
Mar 2008	Vale INCO Clarabelle, Canada	9 – TMC6	Various Analyzer feed	
Feb 2008	Kinross Gold – Kettle River, Washington, USA	1 – TMC 12 Flume Sampler 1 – M 3620 Arcual Sampler	Cyclone O/F 1160 usgpm Flotation Concentrate 124 usgpm	
Feb 2008	Barrick Cortez Gold	2 – M1850 Moving Inlet Samplers		

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Sept 07 – June 08	Rio Tinto - Kennecott Concentrator, Utah	5 - 1330,ICE, Knifegate Diverter, 4810 Dual Drive, SDM, waterspray 8 – 1330, ICE w/ rock box, 1850 Diverter, 4810, waterspray 1 – 1330, ICE, 4810, waterspray 4 – Multiplexers 1 – TMC28 1 – TMC20 1 – TMC18 2 – TMC14 1 – TMC12 1 – PPV30 1 – PPH26 1 – PPH18	Complete retrofit of all sampling points - Rougher Feed, Rougher Tailings, Final Bulk Concentrate, Metallurgical & Analyzer Feed Sampling, etc...	
July 2007	TIMET	Rotary Sample Divider	Lab. Containers 4 @ 7%, 4 @ 18%	
Jun 2007	Newmont – Phoenix Mine, Nevada	PPV 14" / 1850	Thickener U'flow, up tom 55% solids, 100% - 150 mesh	
Mar 2007	FNX Mining Sudbury	Wescone Crushing System		
Mar 2007	Shell Canada / Hatch Optima / Alberta, Canada	1. Model 4820 Intermittent 2. Model 4740 / M4810 dual cutter 3. (3) PEX 08 Poppet Extractors 4. (1) PEX 06 Poppet Extractor 5. (1) PEX 06 HP High Pressure	1. Cyclone U/F 2. Cyclone O/F 3. Diluted Feed / (2) Treated Feed 4. TT Feed 5. Excess Feed	
Mar 2007	INCO Copper Cliff	TMC 04		
Mar 2007	Huckleberry Mines	PPV 12"		

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Mar 2007	Iron Ore Co. Canada Labrador City	Model 1330 w/ BD Cutter, 60" stroke & Head Chute Adapter	CLO_063 Primary Sampler Conveyor 55BC08 Concentrate Reclaim	
Feb 2007	Newmont – Carlin	Model 4500 Vezin	Replaces worn out unit supplied in 1994	
Dec 2006	PT Freeport Indonesia	(2) PD Hand Samplers Model 5103 & 5105		
Dec 2006	TIMET – Titanium Metals Corp, Henderson, Nevada	Model 1500 Yoke w/ Bottom Dump Cutter and ICE	Ti Sponge Sampling, interval = 1 minute, 6" cutter opening, 58.3 lbs increment mass	
Dec 2006	Fresnillo, Zacatecas, Mexico	PD Hand Sampler Model #5102		Hosokawa
Dec 2006	Iron Ore Company of Canada	Model 1330 w/ head chute adapter	Reclaim Iron Ore Concentrate, Max. 1000 t/h, Particle size 1.4 mm max., Belt width 36", Belt speed 9.2 ft / sec, Cutter travel 60" , Cutter length 48", Cutter Pelican style, Bottom Dump	
Nov 2006	INCO Copper Cliff Smelter	(2) PD Hand Samplers #5031 & 5102		
Oct 2006	Minera Fresnillo, Zacatecas, Mexico	Model 1100 / 4500		Hosokawa
Oct 2006	Newmont – Carlin, Nevada	(2) 6100-05 Swirl Tanks		
Oct 2006	Karalveyem (Chukotka, Russia)	Primary Sampler ARM26, Secondary Sampler M-4500S	Primary Ore Sampling at 30-35 t/hr, Belt Width 650mm, Belt Speed 1.6 m/s, Particle Size 8mm, Prim. Inc. 1.0 kg, Continuous Secondary 2 cutters at 1.5 % ea., Secondary Sample mass in 12 hrs 10.8 kg	Knelson Concentrators

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Oct 2006	Xstrata – Kidd Met Site, Timmins, Canada	PPV 12 / TMC 14 / TMC 08 / TMC 12 <u>Linatex</u> lined body & nozzles & cutter transitions	Zn Final Scav Tails, Zn Final Conc, various	
Oct 2006	Agnico-Eagle Laronde, Quebec	(2) PPV 12 (2) Model 18621 Two Position Diverters w/ level sensing control	Cu Rougher Tails & Zn Rougher Tails Cleaner Tails & Rougher/Scav Conc	
Oct 2006	Inmet – Troilus, Quebec	(2) 4810-3450, (1) 4820-3450	New model vezin samplers following the recommendation from the F. Pitard sampling audit	
Sept 2006	Richmont / Camflo Malartic, Quebec	Model 1100 w/ 12" SS cutter & cutter cap, cyl bellows, C.I. rod glands	Tails sampler	
Sept 2006	Wideco, USA	(2) PD Samplers		
Sept 2006	Iron Ore Company of Canada	(1) PD Sampler x 5m long		
Aug 2006	OROCON, Russia	(4) PD samplers x 3 m long		
Aug 2006	Newmont, Carlin Nevada	(4) Model 4510-3200 Vezin	Replace and Upgrade to old Model 4500 secondary's	
July 2006	Inco, Clarabelle / Hatch	Linear Model 1350 with ICE®  TMCF16	Column Concentrate Metallurgical Balance Linear Sampler M1350, with 18" Type 'D' Pelican Style Cutter, Fish Tail Inlet Launder, ICE®, Transition Reject Various existing In-line and Linear Samplers	
June 2006	ARCON Mines Galmoy, Ireland	1. 1350 / ICE / 1850 / 1840 Interleaving Diverter / SDM 2. 1350 / Mixing Box / ICE / 20 gal Swirl Tank / 1850 / Module / 1840 Interleaving Diverter / Dual SDM's 3. PPV 100mm	1. Cyclone Overflow 2. Combined Tails 3. Zn Rougher Concentrate	
June 2006	Xstrata – Kidd Met Site, Timmins, Canada	(2) PD sampler		
June 2006	Inmet – Troilus, Quebec	PD Sampler		

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June 2006	Iron Ore Company of Canada	(2) TMC 10 w/ polyurethane cutter caps, (2) TMC 12 w/ polyurethane cutter caps		
May 2006	Knelson Concentrators	3630, 1850, (2) 1840 , (1) 5 gal. Swirl Tank		
	Pelambras, Chile			Delkor Chile
	SQM Coya Sur, Chile			Delkor Chile
	Punta Lobos, Chile			Delkor Chile
Mar 2006	Falconbridge - Kidd Timmins, Canada	(2) PPV10		
Feb 2006	Kemess, British Columbia	(1) PD Sampler, 3m, 1000ml		
Feb 2006	Mines de Liptako Niger, Africa	(2) PD Samplers, 2m, 1000ml		
Feb 2006	Teck Pogo Alaska	(2) PD Samplers, 1m & 3m, 300ml & 1000ml		
Feb 2006	Apex Silver AkerKvaerner Chile San Cristobal Project Bolivia	(6) M1350 w/ ICE, (2) 4720, (3) 4730 (3) ARM 24" (12) TMC=s, (5) PPV=s w/ manual water flush systems	All slurry samplers for collecting both metallurgical shift and analyzer feed samples ARM=s are for the Zn, Pb and Cu concentrate conveyors.	
Jan 2006	Suncor Energy Fort McMurray, Canada	(2) PD Samplers, 3 meter, 1000ml		

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Jan 2006	First Nickel / Lockerby Mine	Secondary Sampling & Crushing Tower (1) Removable Vibratory Feed Hopper (1) Wescone 300/2 (1) M4500S Sampler		
Jan 2006	Coeur Alaska, Kensington	(1) LDLE w/ ICE (1) PPV 06 w/ 4810 (1) 4810 Primary	Flotation Feed Sampler for flowrate of 448 USGPM, from 6" dia pipe, Rougher Scavenger Tails and 1 <sup>st</sup> Cleaner Tails Primary/Secondary Samplers	Hatch Vancouver
Nov 2005	LKAB Kiruna, Sweden	(2) PD Samplers, 4m & 5m handles, 300ml		Direct
Nov 2005	Minera Tizapa, Mexico	(1) Model 4810		
Oct 2005	OROCON, Bema Gold, Kupol Project, North East Russia	Light Duty Linear Samplers with Secondary Vezins	Thickener Sampling for Metallurgical Balance: Two Linear Samplers Model LDLE for 42" travel, 12" Type 'D' Cutter, with Secondary Samplers M4510 Rotary Vezin Three Vezin Sampler M4730 Primary with M4510 Secondary	
Oct 2005	Texada Quarrying Van Anda, BC, Canada	(1) ARM60 Sampler, Controls w/ PLC Interface capability (1) Rotary Sample Collector, 8 stations, Model 11705-0810		
Oct 2005	INCO Thompson Manitoba, Canada	(1) Tank Sampler - M18825-0000 Sample Collector Assy	Sulphuric Acid Sampling	
Oct 2005	Southern Peru Copper Cuajone Concentrator	(1) Model 11616-3100 LSA Diverter	Replacement for unit supplied on original project in 1997.	
Oct 2005	Falconbridge - Raglan Quebec, Canada	PD Sampler, 3m, 1000ml		



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Oct 2005	Shell Canada	(2) PD (Pulp Density) Sampler, 5m handle		
Oct 2005	Iron Ore Company of Canada	(2) 8" PPV		
Oct 2005	TMC Metals	Model LDLE w/ under slung B-D cutter, remote timing and Cutter Opening: 152 mm (6") Cutter Speed: fixed at 203.2 mm/s Cutter Travel: 609.6 mm (24")	Shredded PC Boards 750 kg/h, minus 1" Belt Width: 400 mm (16") @ 1 m/min. Material Depth: approx .045 m	
Sept 2005	Newmont, Carlin Nevada	Model PPV08 / 5 gal Swirl / 1850	Final Concentrate Sampling (identical to Rougher Scav Conc system supplied in May 2004)	
Sept 2005	IMMSA, Mexico	(1) 4830 Primary, dual 25% cutters, 2" CHT425 AR bolt-on wear liners (1) 4810 Secondary Sampler	Primary Feedrate: 36 mtph, 100% minus 76mm	
Sept 2005	Falconbridge Raglan Canada	Model PPH12, Horizontal High Pressure Sampler , w/ 1/4" rubberlined body, 2" rubberlined nozzle	Final Tails	
August 2005	Agrium, Kapuskasing Canada	(1) TMC Flume Sampler w/ Linatex lining (1) 4830 Primary Vezin w/ 4 x 4% cutters (1) 5 Station SDM (Sample Dewatering Module) (1) Metso Sala VF50 04 Vertical sample delivery pump	Flotation Feed Flotation Tails	
August 2005	ARCON Mines Kilkenny, Ireland	PD Sampler	Flotation Cell Grab Sampling	

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July 2005	Timcal Canada Lac des Iles, PQ	(2) TMC 08 black iron inlet & reject		
June 2005	COREM Canada	M1840 Moving Inlet Sampler, type B fixed SS cutter		
June 2005	Inmet Mining Troilus Division Canada	M1500, 42" travel, 30" type B cutter + ICE7 w/ reject box + M4500		
June 2005	Robinson Nevada Mining USA	(2) M5104 PD Samplers		
June 2005	American Iron / Lyntek USA	M3620 / 9100-0000 Control 220V/50hz		
Jan 2005	Penoles Milpillas Project / Akerkvaerner Santiago	Sampling Tower - M1430 + 4500S + 4810 + PLC Control	Copper Oxides	Delkor Chile
Dec 2004	Codelco El Teniente	16 Slurry Sampling Systems incl. 6", 8", 16" TMC=s + 4", 6", 10" PPV + diverters and pumps	Outokumpu Analyzer Feed Sampling	Delkor Chile
July 2005	Kolskaya GMK (Severonickel), Monchegorsk, Russia	(1) Eriez Vibratory Feeder (1) Rotary Cannister Sampler System Module	Pt-Pd Concentrate, .6 to .8 g/cc, 0.1% - 2% moisture, 99% minus 1.0mm, 68 kg hopper capacity, 125 kg/h feedrate, (2) cannisters at 1.5% each, sampling 1000kg batches.	Intertech Corporation
April 2005	Lafarge, Meldrum Bay Canada	(1) ARM 42" w/ collector		
March 2005	Boroo Gold Company Mongolia	(1) M1500 (1) LDLE	leach feed plant tails	

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Feb 2005	Stillwater Mining Nye, Montana, USA	(1) 6" PPV		
Dec 2004	Agrium / Kapuskasing Phosphate Operations	(1) PPV14, 5 gal Swirl Tank w/ orifice plates, M1850 Secondary, pre-assy onto Installation Frame	Ball Mill Discharge	
Dec 2004	Climax Molybdenum Henderson Mill, Colorado	(1) LDLE w/ 12" poly sprayed Pelican cutter & cutter caps	Final concentrate, (2) 4" pipes at 90 usgpm, replaces existing Denver sampler	
Nov 2004	Coemin	(1) 10" PPV, (1) 12" PPV	Copper Concentrate	Delkor Chile
Oct 2004	Gibraltar Mines Lomas Bayas	Sampling Tower - 1130 secondary + 4810 + crusher + belt feeder	Copper Oxides, utilizing existing H&S M1400, replacing riffle	Delkor Chile
Oct 2004	Falconbridge / Kidd Metallurgical Complex	(1) Custom Designed Single Station SDM	slurry sample de-watering	
Sept 2004	Agrium / Kapuskasing Phosphate Operations	(1) TMC 12 w/ linatex lining		
Sept 2004	Barrick Gold / SNC Lavalin / Alto Chicama	Poppet Extractor Samplers (1) PEX 10 (1) PEX 16 (3) PEX 18	De-aerator Tower Feed Barren Solution Leaf Filter Feed Barren Solution Bleed Cyanide Destruction Feed 150 to 200 psi pipelines	
Sept 2004	Barrick Gold / SNC Lavalin / Alto Chicama	Belt Sampling Tower	Crushed Product Plant Feed	H&S (1964) Ltd.
August 2004	CVRD Carajas	(1) ARM m4824	Iron Ore	Tecnometal

**Heath & Sherwood**  
**Installation List - Samplers**  
 Note: Excludes projects by Consep, Australia  
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Delivery Date	Customer /Consultant/ Project Name	Sampler Types	Application	H&S Partner
August 2004	Inmet Mining / Troilus	(1) PPV 10 (1) 6100-05 Swirl Tank	Flotation Tails, 305 m ; /h 45% solids	H&S (1964) Ltd.
August 2004	Bema Gold, Julietta Mine Far Eastern Russia	(3) Model LDLE Linear	Cyclone O/F, Tails + 1 spare sampler - replacing original Denver type samplers	
August 2004	Plata Pan Americana - Mexico	Model 1870	silver concentrate slurry	
August 2004	TMC Metals, China	Model 4720	duplicate circuit	
July 2004	Agrium / Kapuskasing Phosphate Operations	TMC 06 Linatex Lining	Belt Filter Feed	
July 2004	Wabush Mines / Scully Mine / Labrador & Newfoundland	Custom Design Fixed Launder Cutter - Iratane Lining	Rougher Spiral Tails Sampler - Iron Ore	
July 2004	INCO / SNC Lavalin / Voisey's Bay	Various Continuous Pneumatic Linear & In-Line Samplers	Met Balance & Analyser Feed	
July 2004	TMC Metals, China	Model 4720	sampling shredded electrical components at recycling plant	
May 2004	Cameco / Rabbit Lake	TMC 10		
May 2004	Barrick Gold / SNC Lavalin / Veladero	(3) Poppet Extractor Samplers/PEX	150 psi pipeline	
May 2004	Newmont Carlin	PPV08/swirl tank/1850 Model 1870	Rougher/Scav Concentrate Final Concentrate	

## Heath & Sherwood Installation List - Samplers

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April 2004	Fresnillo Zacatecas, Mexico	3620/4500 4500 w/ pushbutton	Lead Concentrate Zinc Concentrate replacement secondary (existing 3620 primary)	Hosokawa
April 2004	Falconbridge / AMEC Montcalm Project	(3) Model 11616 Sample Diverters		
March 2004	Newmont Lonetree - Nevada, USA	TMC / 1850	Flotation Tails	
March 2004	Southern Peru Copper - Cujone	Model 1335 aNiagara@	Flotation Feed to replace existing Model 1335 supplied in 1997	REINSA. Peru
February 2004	Texada Quarrying / British Columbia, Canada	(1) 42" ARM (1) 11705 Rotary Sample Collector	Limestone, 3" top size 500-2200 mtph 700 ft/min belt speed	
Jan 2004	CVRD Timbopeba	(2) 36" ARM	Iron Ore	Tecnometal
Jan 2004	CVRD Sao Luis	M1350 w/ hydraulic drive	Iron Ore	Tecnometal
August 2003	INCO / Thompson / Manitoba, Canada	(1) PPV 06 (1) PPV 10		
2003	Cambior Gross Rosebel / Metchem - Suriname	Various slurry		
2003	Falconbridge / Strathcone Mill	(1) PPV 06 (1) six station Gang Sampler (3) slurry multiplexers		
2002	Lafarge Canada Inc./Meldrum Bay, On	three (3) ARM <sup>7</sup> Samplers	- :@ limestone	

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2002	Lafarge - Meldrum Bay	60" ARM, integrated feeder/secondary 12" ARM, riffle, rotary collector		
Oct 2003	Fresnillo - Naica	2 PD Samplers		
	CVRD - Itabira	(15) Slurry Sampling Systems		TBM
	CVRD - Alegria	8" TMC / 3720	Iron Ore Slurry	TBM
	CVRD - Vitoria	60" ARM	6000 mtph Iron Ore Pellets	TBM
	Samarco - Ponta Ubu	(4) ARM=s + Rotary Cannister Samplers	Pellet Feed (3 x 48", 1 x 42")	Tecnometal
	MBR -Capitao do Mato	(2) 48" ARM, 7m belt feeder, rotary divider	-35 mm iron ore	TBM / Tecnometal
	MBR - Vargem Grande	48" ARM, 35m sample & reject conveyors, 2 m belt feeder, Model 4850 secondary	4000 mtph, -35mm iron ore	TBM
	MBR - Vargem Grande	32" ARM	- 6mm iron ore	TBM
2002	Codelco Chuquicamata - Chile	Model 1335 / 1330 with ICE / Model 4720 / Model 4710 / Model 4500	Feed Concentrate Tails 10,000 m <sup>3</sup> /h, 56% solids	Delkor
2002	Mantos Blancos - Chile	Sampling Tower w/ 1330 / 4810 / 4500S / feeders / custom head chute / rotary collector	15,000 tpd, minus 3/8" agglomerator feed	Delkor
2002	Atacama Kozan - Chile	M1130 / 4810 / 4500 / TMC & 1850	Concentrate & Tails slurry sampling, 5000 tpd plant	Delkor

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Delivery Date	Customer /Consultant/ Project Name	Sampler Types	Application	H&S Partner
	Wabush Mines / Scully Mine / Labrador & Newfoundland	Custom Launder Cutters	Iron Ore Tailings	
	Agnico Eagle / Cadillac, Quebec	(2) M1870 Diverters		
	Iluka Resources / Stoney Creek, Virginia USA	M1850		
	Placer Dome / Dome Mine / Timmins, Ontario	Model 1350 Rebuild ICE		
	Newmont Gold Canada Golden Giant Mine	Model 3620 Arcual M6100-05 Swirl Tank Model 1850 Secondary	CIL Feed	
	Cosipa - Cubatão, Brazil	Two (2) 54" ARM7 Samplers	minus 100mm coke, -50mm coal, - 50mm iron ore	H & S Brazil
	CVRD - São Luis, Brazil	Six (6) 40" ARM7 Samplers Two (2) 55" ARM7 Samplers One (1) 26" ARM7 Sampler Two (2) 48" ARM7 Samplers One (1) Two-Stage Riffle Divider Nine (9) Single-Stage Sample Collectors	Iron Ore Pellets	H & S Brazil
	Los Pelambras - Chile	PPV / 4710	Copper concentrate	Delkor
	Singareni Collieries / India	(3) 1200mm ARM=s (1) 1400mm ARM	200mm top size coal	Masyc Projects

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Delivery Date	Customer /Consultant/ Project Name	Sampler Types	Application	H&S Partner
	Noranda/Altonorte - Chile	One (1) 1130 w/ICE7 One (1) Model 4810 One (1) Model 4710	Slag Flotation Plant - 75tph	Delkor
	BHP Tintaya Oxides/Kvaerner Peru	Two (2) Model 3730/4500	Leach Feed/ CCD Tails	
	Stillwater Mining - Montana, USA	One (1) Bulk Concentrate Sampler	Probe Sampling of Precious Metals Concentrate	
	Santa Luisa, Peru	One (1) Model 1330 One (1) 3-Stage Riffle	Mill Feed	
	El Tesoro - Chile	One (1) Model 1130 Sampler One (1) Model 1430 Sampler One (1) Model 4810 Sampler	Leach Feed - 1700tph	Delkor South
	Sal Lobos - Iquique, Chile	One (1) ARM Sampler, feeder, One (1) Model 4810 Sampler	Salt (NaCl) - 1600tph	Delkor South
	CVRD - Teof<->landia, Brazil	One (1) Model 1130 Sampler One (1) Model 1330 Sampler	Gold Ore	H & S Brazil
	AGRA Simons/Lac Des Iles Expansion Project	One (1) Model 4620 Sampler	Metallurgical Sampler	
	Corporation Minière Inmet/Division Troilus	One (1) Model 5610-3600 PSA	Tailings Primary Sampler	
	Corporation Minière Inmet/Division Troilus	One (1) Model 5655-3300 TMC	Primary Sampler	
	Minera Bismark S.A. de C.V.	One (1) Model 1500 w/ICE7	Tails Primary Sampler	



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	Agnico Eagle Mines Limited/Laronde Division	One (1) Model 5655-3300 TMC	Secondary Cleaner-Scavenger Tails	
	Agnico Eagle Mines Limited/Laronde Division	One (1) Model 1350w/ICE7 One(1) Transition Reject	Mill Feed Sampler	
	P.T. Freeport Indonesia Co.	One (1) 11642 ARM Sampler One (1) 11701 Rotary Sample Divider	Primary Sampler Secondary Sampler	
	Newmont Mining Corp	One (1) Model 3750 One (1) Model 4500	Flotation Rougher Feed Primary Flotation Rougher Feed Secondary	
	MBR - Belo Horizonte, Brazil	One (1) Sampling System w/ One (1) Model 1330 Sampler One (1) Model 1330 Sampler w/ Belt Feeder Three (3) Model 1330 One (1) Model 3730	Primary Sampler Secondary Sampler Lump Iron Ore, Sinter Feed, Pellet Feed - 16mm Iron Ore & Iron Ore Slurry	H & S Brazil
	CSN - Volta Redonda, Brazil	One (1) 30" ARM7 Sampler Two (2) 42" ARM7 Samplers One (1) 6-Pos=n Rotary Collector One (1) Belt Feeder One (1) 150-Litre Rotary Divider	Primary Samplers & Secondary Sampler for Iron Ore Sinter	H & S Brazil

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2000	MBR - Belo Horizonte, Brazil	One (1) Sampling Tower incl/ One (1) Model 1335 One (1) Model 1330 One (1) 480 Litre Rotary Divider Two (2) Belt Feeders	Primary, Secondary and Tertiary Sampling of Lump Iron Ore, Sinter Feed and Pellet Feed 9000 tph max , Belt speed: 4 m/s, Belt width: 60", Material: Lump iron ore / sinter feed / pellet feed, Moisture: 4 / 9 / 15%, Top Size: 31.5 / 8 / 0.3 mm, Increment mass: 264 kg, Motor hp: 3 kw. This is a loading terminal, where the products are loaded onto train wagons. Due to this, we took approx. 01 increment per wagon. This came out to about 120 primary increments in two hours.	H & S Brazil
	Knelson Concentrators	One (1) Model 3720	Concentrator Module - Final Tails @ 150 usgpm	
	Inmet Corporation/Troilus	One (1) Model 11610 Five Station Sampling De-Watering Module (SDM)	Secondary Sampler Automatic De-watering	
	Camargo Correa Cimentos - Pedro Leopoldo, Brazil	One (1) 24" ARM7 Sampler	Limestone Sampler	H & S Brazil
	Minera Mexicana La Cienega	One (1) Model 1100 w/ICE7	Pb Concentrate Primary Sampler	
	Codelco - Salvador	One (1) Model 1130 w/ICE7	Copper Concentrate - 100tph	Delkor Chile
12/99	Minera Mexicana La Cienega	One (1) Model 1350 w/ICE7	Heads Primary Sampler	
12/99	Svedala Pumps & Process AB Sala, Sweden	One (1) Model 5610-3400	12" Pressure Pipe Sampler for Chador Malu Iron Modernization Project.	
11/99	INCO Limited/Manitoba Division	One (1) Model 5200 Bar Sampler	Filter Cake Discharge Conveyor Sampling	

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11/99	Minera Sabinas	One (1) Model 1850-3000 One (1) Model 5655-3300	- secondary for metallurgical samples - Auto Cleanse TMC feeds Cyclone Overflow sample to Outokumpu PSI-200	
11/99	CVRD - Itabira, Brazil	One (1) 0.9 ft. <sup>3</sup> Cutter One (1) Belt Feeder One (1) Model 4810	Primary and Secondary Sampling of Fine Iron Ore	H & S Brazil
10/99	INCO Limited, Ontario Division/Matte Processing	One Low Grade Slope Pipe Sampler New Developmental Sampler.	- 6" nom connections - 30 TPH flow rate - 88 - 90% solids - 20 - 30% @ 65 mesh - 6.0 S.G. solids - 2.9 S.G. slurry - 6.85 ft/s slurry velocity	
10/99	Barrick Holt-McDermott	Model 3640 Arcual Intermittent Vezin Sampler	- SAG Mill Discharge Sampling screen underflow - 1 mm particle size - 2.85 S.G. solids - 950 usgpm - 44% solids	
10/99	Barrick Goldstrike/Carlin	One (1) Model 1330 One (1) ICE7 One (1) Model 4500	- tails, 2000-6500 vsgpm, 30 - 38% solids - 3 - 16" 1 lines feeding ICE7, mounted above booster station collection tails	
10/99	INCO Thompson/Kvaerner	One (1) 5200 w/3 bars, all S.S.	- Filter Cake discharge	
10/99	Goldcorp	Two (2) Model 5600-3100 Three (3) Model 6100-3 Three (3) Model 1850-3000 Three (2) Model 1860-3000 One (1) Model 1870-3000		

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10/99	Empire Iron Mining/Palmer, Michigan	One (1) Model 1430 w/ VFD 5 Stage Riffle	- 3/8" taconite pellets, Conveyors 37 & 39 Discharge chute, 500 - 6000 tph, 25 - 300 lb. primary increments	
09/99	INCO Limited/Manitoba Division	One (1) Model 4710 Continuous Vezin Sampler	Cyclone Overflow sampler (LM)	
9/99	Southern Peru Copper/Fluor Daniel/Cuajone	One (1) 5655-4000 w/Integrated Diverter, Deliver Pump	Courier Analyser Feed	
09/99	Lafarge Canada Inc./Meldrum Bay, On	One (1) ARM <sub>J</sub> Sampler (42")	- : @ limestone - 360 ft/min belt speed - 230 tph flow rate	
06/99	INCO Limited/Clarabelle Mill	One (1) Model 5610-3200 One (1) Model 5610-3400 One (1) Model 5610-3700 One (1) Model 5610-3100 One (1) Model 5655-3700	- Scavenger Cleaner Feed - Unknown - Unknown - Scavenger Cleaner Tails - Primary Cu/Ni Tails - Courier Analyser Feed	
06/99	Agrium/SNC-Lavalin/Kapuskasing	One (1) Model 5610-3300-F One (1) Model 5610-3900-F One (1) Model 5610-3700-F Three (3) Model 1850	- Mill Feed - Final Tailings - Non-Magnetic Product - Secondaries to above	
06/99	Minera La Cienega Mexicana	Model 1100 & ICE <sup>7</sup>	- Zinc Concentrate, 8" vertical pipe discharging at 40 usgpm, high froth, 0.54 l / increment, 5 min interval	
06/99	Cliffs Mining Co./Wabush Mines	One (1) Custom LSA cutters & discharge One (1) Model 1870	- Tailings Primary Sampler, 150 tph, S.G. 3.4, 20% solids - Tailings Secondary Sampler, 87 usgpm increment size	

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06/99	Cameco Corporation/Key Lake	Model 1130 & ICE7 Feed Launder Model 4500 & 4-way Distributor		
06/99	Inco Limited - Matte Processing	One (1) Model 1100 w/12" Type AC@ cutter	- Conveyor #157 Nickel Powder	
4/99	Raglan/Hatch Associates/Mine Katinniq	One (1) Custom Design Distributor	- Ni-Cu Concentrate Diverter	
04/99	Echo Bay Minerals	Model 1850	- Gravity Circuit concentrate sampling, 50-60 usgpm, 45% solids, 0.021 to 0.125 usgals increment size,	
02 /99	Kilborn/SNC Lavalin/Inco Gorro Nickel New Caledonia	Model 1840 Calibration Sampler c/w S.S. Swirl Tank	Integrated Pilot Plant, Sampling Points Pressure Leach Feed Leach Plant Discharge 2P sample/hr	
04/99	Fresnillo / Unidad Naica	(2) M1100 w/ 12" type C dry cutter + (2) Rotary Dividers w/ 8 Cannisters (3) M1100 w/ client PLC control (Heads, Zn Conc, Pb Conc) + (2) ICE (1) M1100 / 4500 Timer Control (Tails)	Mill Feed - 59 mtph, minus 3/8", 24" belt  Tails 760 gpm Heads 1100 gpm	
02 /99	Noranda Inc./Fonderie Horne	Two (2) 8" & 10" nom. TMCJ samplers with Irathane lined cutter cap		
01 /99	Climax Molybdenum Company - Analyzer Feed Trial	Model 1330 w/1.5 HP Brakemotor, 18" Pelican AF Cutter LOGO controller ICE7 w/Irathane Lining 14" Pipe to 36" launder transition	Rougher Feed #3, 3600 usgpm (975 m <sup>3</sup> /hr), continuous operation (approx. 20 strokes/min or 10.5 M strokes/year) to feed Courier Analyzer and secondary sampler for met balance, system replaces in-stream probe for reliability and representative sampling	H & S (1964) Ltd.

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12/98	Compañía Fresnillo S.A. de C.V.	Model 1350 ICE7 Model 1100 ICE7	ICE7 purchased to install samplers supplied on 07/98	
11/98	Compania Minera Sabinas, Mexico	(2) PD Hand Samplers		
11/98	Round Mountain Gold Corp.	Models 3740, 4710, 4500 Tertiary Sampling System w/ LOGO Control	Replaced Harrison Cooper system which was only 1 year old and undersized. 4000 usgpm @ 35% solids, Gravity Feed Stream, -28 mesh gold ore	
11/98	Hispanobras - Vitória, Brazil	One (1) 48" ARM7 Sampler	Iron Ore Pellets Sampler	H & S Brazil
11/98	Nibrasco - Vitória, Brazil	Two (2) 36" ARM7 Samplers	Iron Ore Fines Samplers	H & S Brazil
11/98	CVRD - Vitória, Brazil	Two (2) Model 3720 Samplers	Iron Ore Slurry Samplers	H & S Brazil
11/98	CVRD - Vitória, Brazil	One (1) Model PSA-0687 One (1) Model 1850	Primary and Secondary Samplers for Coal Slurry	H & S Brazil
11/98	CVRD - Vitória, Brazil	One (1) 24" ARM7 Sampler	Iron Ore Fines Sampler	H & S Brazil
11/98	Itabrasco - Vitória, Brazil	One (1) Model 3720 Sampler	Iron Ore Slurry Sampler	H & S Brazil
11/98	Hispanobras - Vitória, Brazil	One (1) Model 3720 Sampler	Iron Ore Slurry Sampler	H & S Brazil
10/98	Minera Mexicana La Cienega	4 x Model 4500 Sampler	Used as Tertiary Samplers on existing Float Feed, Lead Tails and Cyaniding Tails, and secondary on Lead Concentrate streams. Original Model 1100 & 1350 pneumatic primary/secondary samplers supplied by H & S in 1993	
09/98	Logistic Services/Southern Peru Copper/Cuajone	Model 1400 Sampler w/65" cutter travel for 42" belt	: @ Cu Ore Agglomerator Feed, 260 mtph, 4.5% moisture, 6.94 kg increment, 15 min intervals (35,000 strokes/year)	

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09/98	Gamma Metrics/Kudremukh	Models 5610-3200, 5610-3300 Samplers & Model 11674-2900, 11674-5000 Multiplexers		
08/98	Minera Capela/Cadereyta	2 x Model 4500 Secondary Sampler w/pushbutton motor starter control	Used with existing Model 1100 Primary Samplers on head (570 P/min) and tails (480 P/min) streams. Pv/Zn/Cu Concentrator	
08/98	Fluor Daniel/Newmont Batu Hijau Project, Indonesia	36" ARM <sub>J</sub> w 4.0 kW motor 8 Station Rotar Collector, 25 kg capacity each cannister	Cu Concentrate Shipload Conv. 45-CV-001 1160mtph, 3.5 m/s belt speed, 6.9 kg increment mass, 30 degree cutting angle, 2.6 t/m <sup>3</sup> , 9% moisture	
08/98	Inco Limited/Copper Cliff	Model 5650-3100 Sampler		
07/98	Compania Fresnillo - Benefices de Jales Project	Model 1350 Heavy Duty Linear Sampler, c/w 18" Type D Analyzer Feed Cutter (AF) Model 4500 Secondary Sampler Model 1100, c/w 12" Type B-AF	Heads - 337m <sup>3</sup> /hr, 20mm cutter opening, 5 minute intervals, 10.0 P/increment Ag Concentrate - 6.3 m <sup>3</sup> /hr, 50mm opening, 5 minute intervals, 0.5 P/increment (M1100 @ 105,000 strokes/year)	
07/98	Compania Fresnillo - Benefices de Jales Project	Model 1350 Heavy Duty Linear Sampler, c/w 18" Type D Analyzer Feed Cutter (AF) Model 4500 Secondary Sampler ICE <sub>7</sub> w/transitioned bottom	Tails - 327 m <sup>3</sup> /hr, 30.3% solids, 20mm cutter opening, 5 minute intervals (105,000 strokes/year), 12.0 P/increment	
07/98	Samitri- Brazil	2-ARM <sub>J</sub> , 1-12"PSA, 1-M1850, 1-M1860,2-3730,2-3640,4-4500	Slurry and Bulk Material Sampling	
06/98	Kobrasco- Brazil	2- ARM <sub>J</sub> , 2-M1350, 1-2 stage riffle, 1-3 stage riffle, 1-12"PSA, 1-M1850, 3-3650, 3-4500,	Slurry and Bulk Material Sampling	
06/98	Aur Resources Louvicourt Mine	Screen Underflow Pri./Sec Sampling System with Installation Module	Coarse material sampling	

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06/98	Iron Ore Company of Canada/Labrador City	Model 5600-2900 Sampler		
06/98	Minera Alumbreira	Model 1330 Electric Primary w/18" AF Cutter, ICE7, Model 1860 Secondary	Final Concentrate - 720m <sup>3</sup> /hr, continuous operation (+2 M strokes/year) to feed analyser 100 P/min, and secondary sampler for metallurgical balance.	
05/98	Mineraco Caraiba	Extra PSA=s & LSA=s	Analyzer Feed Projetc G-M, Autometrics	
04/98	Mineracao Caraiba	Various PSA=s & Launder Cutters Slurry samplers	Analyzer Feed Project:G-M, Autometrics	
04/98	Noranda Mining & Exploration/Brunswick Mining & Smelting	1- Model 5860 Two (2) Position Multiplexer with 316 SS Head Tank	Install to feed Particle Size Analyzer	
04/98	Compania Fresnillo	1-M1350 Heavy Duty Linear Sampler, c/w 18" Type D Analyzer Feed Cutter (AF) 1- M11000, c/w 12" Type B-AF	Installed to feed C-30 analyzer	
03/98	Agnico Eagle- Laronde Division	Various In-Line Primary Samplers c/w 1870 Secondary Special Two Pos. Diverters for Large Flows	Zinc Circuit Expansion	
03/98	P.T. Freeport Indonesia	4 - M1870 Secondary Sampler	Installed with H.R. Cooper Primary Sampler	
02/98	Kinross Gold, Timmins Division	1-M3620 Arcual Sampler c/w 0-1 1/2" adjustable mild steel cutter blades 1-M4500 Rotary Vezin		



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01/98	Southern Peru Limited Cuajone 156K Expansion	1335 Niagara, 13'-0" cutter travel, 42" Pelican Cutter, 5Hp Motor Swirl Tank 4620 Secondary Reject return pump	Total Tails @ 26,340 m <sup>3</sup> /hr (116,000, 24" slurry depth. Complete enclosed piping and usgpm), 11'-0" wide launder hose arrangement from cutter to secondary sampler and sample pail (sample launder eliminated) Composite Shift Sampling	
01/98	Codelco, Chuquicamata Chile	Model 1330- Electric Drive Linear Sampler	Sampling for Pilot Plant leach bins.	
12/97	Compania Fresnillo- Zacatecas, Mexico	Model 1350 c/w ICE <sup>J</sup> , M-3620 Vezin, 4500 Vezin,	Flotation Tails Tertiary Slurry Sampling System - Analyser Feed & Composite Shift Sampling (similar system for feed shipped 7/96)	
12/97	Gamma-Metrics, Kudremukh, India	Various In-line samplers, plus secondary sampling equipment for on- stream analyser	Analyser Feed	
12/97	Minera Tizapa, Mexico	1 - 1100 / 1850	Composite Shift Sample	
12/97	Southern Peru Limited Cuajone 96K Expansion	1335 Niagara, 42" Pelican Cutter, 10'- 1 <sup>0</sup> " travel, 5Hp motor c.w Feed Box/ICE <sup>7</sup> /Distributor w/4 x 3 <sup>0</sup> " darts, 1860 Secondary	Cyclone Overflow @ 56,000 usgpm, 8' wide launder. Complete enclosed piping and hose arrangement from cutter to secondary sampler and sample pail. Composite Shift Sampling.	
12/97	Southern Peru Limited Cuajone 96K Expansion	2 x 1330 w/ICE <sup>7</sup> 2 x 4500 Secondary	CU Cone & CU/Mo Conc - installed at thickener feed	
12/97	Fording Coal - Greenhills Operation, BC	1 - 14" LSA c/w- 2" Alumina Ceramic Tile Lining	Analyser Feed	
12/97	Newmont - Batu Hijau Project (Indonesia), Fluor Daniel Denver	6 - PSA Samplers	Analyser Feed	

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12/97	Southern Peru Limited Cuajone 96K Expansion	LSA=s TMC (Top Mounted LSA=s) LSA Flow Diverters PSA=s Sample Transfer Pumps	Analyzer Feed Samplers for Courier	
11/97	Compania Fresnillo - Unidad El Monte, Mexico	7 - LSA Samplers	On-Stream Analyser Feed	
11/97	Iron Ore Company of Canada	Various In-Line Samplers with Sample pumps	Analyser Feed	
11/97	Cerro Vanguardia (Minorco), Fluor Daniel Argentina	2 - Sampling Towers c/w ARM <sup>U</sup> & 1350 Primary, rolls crushers, belt feeders, 4810 Secondary, collectors, reject bucket elevator, PLC, structural steel design and fabrication.	-12 mm Gold Ore for Mill Feed & Crushed Product Conveyors	
11/97	Falconbridge Raglan - Concentrate Handling, Quebec City, Canada	Concentrate Sampling System - Head Chute Adapter, Model 1430 Electric Drive Primary, Screw Feeder, 4810 Secondary, PLC, including Installation Module and associated chutes	Nickel Concentrate - Storage Bin Feed 1350 mtph, 100 mesh, 8-9% moisture	
9/97	Agnico Eagle - Laronde Quebec	1-1350 Linear for Mill Feed c/w ICE <sup>U</sup> , 1870 Diverter, Reject Diverter, PSA, 6" LSA w/ Diverter & Level Probe	Copper Circuit Mill Feed, Scav., Rougher, Final Conc, Tails, Sec. Scavenger Samplers for Analyser Feed	
4/97	Noranda - Horne Conc. Quebec, MetChem	4 - 1350 w/ICE <sup>U</sup> Various LSA/PSA c/w diverters	On-Stream Analyser feed	