

9.0 INSTRUMENTATION

9.1 Wet Chemistry

9.1.1 Ion Chromatographs

Instrument	ID	Analysis	Year in Service	Method
Dionex Model DX500 LC20 CE (CE01 Chromatography Enclosure) CD20 (CD03/CD04 Conductivity Detector) IP25 (IP01/IP02 Peak Net Software) AS 40 (AS52/AS46 Automated sampler) EG01/EG02 Eluent	IC1 /IC2	Chloride, Nitrate, Sulfate Bromide, Fluoride	2000	EPA-300.0
IC-04 Dionex Ion Chromatograph (AD-02) AS 40 (AS47 Autosampler) IP 25 (IP03 Isocratic Pump) LC 20 (CE03 Chromatography Enclosure)	IC4	Hexavalent Chromium	2005	EPA-218.6/ SW-7199
IC5 AS40 (AS58 Automated Sampler) LC20 (CE04 Chromatography Enclosure) IC25 (IP05 Ion Chromatography) EG09 (Eluent)	IC5	Chloride, Nitrate, Sulfate Bromide, Fluoride	2009	EPA-300.0
IC-06 Dionex Model ICS 2100 AS 64 Automated Sampler EG10 Eluent Generator	IC6	Perchlorate Iodide/Thiosulfate	2012	EPA-314.0
IC-07 Dionex Model IC 25 AS 57 Automated Sampler EG40 Eluent Generator 1(EG-03A, EG-03B) LC25 Chromatography oven (CE-02)	IC7	Volatile Fatty Acid	2013	EPA-300.0
IC-08 Dionex Model IC 25 AS 68 Automated Sampler EG40 Eluent Generator 1(EG-11) LC25 Chromatography oven (CE-05) CD06 Conductivity Detector IP06 Isocratic Pump PC02 Pneumatic Controller	IC8		2014	EPA-300.0

9.1.2 Auto Analyzer Systems

Instrument	ID	Analysis	Year in Service	Method
Konelab 20 Thermo clinical labsystems	Kone-1	Nitrite, Ortho - phosphate, Hexavalent Chromium, Cyanide, Phenols, Ferrous Iron	2003	EPA-353.2 SW-7196A EPA-365.1 EPA-335.2

				EPA-420.4
Smart Chem (Westco Scientific Inst)	SC-1	NH ₃ -N, TKN, NO ₃ / NO ₂ , Total.Phosphate	2007	350.1, 351.2, 353.2, 365.4

9.1.3 Other Instruments

Instrument	ID	Analysis	Year in Service	Method
Spectronic 20 Genesys	Spec 06	COD MBAS Sulfide	2014	EPA-410.4 EPA-425.1 SM-4500SD
Orion Research Analog pH meter 301 Beckman 360 pH/Temp/mv Meter(2)	360	pH in water samples	2000	EPA-150.1,9045, 9040
YSI Model 3100-115V Conductivity Meter	CND-4	Electrical Conductivity	2013	EPA-120.1
Hach DBR 200 COD Reactor	COD03	COD	2008	EPA-410.4
Hach Model DRB200	COD04	COD	2011	EPA-410.4
Hach Model 2100N Turbidimeter	Turb-01	Turbidity	2003	EPA-180.1
Hach Model 2100N Turbidimeter	Turb-04	Turbidity	2013	EPA-180.1
YSI Model 57 Oxygen Meter IMHOFF Cone Thermolyne (Auto Mixer)	YSI-57	BOD, C-BOD, Dissolved O ₂ Seattleable Solids TKN, Total. P	1990	SM-5210B EPA-360.1 EPA-160.5
Brinkman Digital Buret	BDB	Alkalinity (HCO ₃ , CO ₃ , OH)	1995	EPA-310.1
Aurora Model 1030 Auto Sampler 1088	TOC-2	TOC Analysis	2006	EPA-415.1
Metrohm	PEA 1R	pH, EC, OH, CO ₃ ,HCO,	2008	EPA-150.1, 9040, 120.1, 9050, 310.1, SM 2320 B
Metrohm	PEA 1C	pH, EC, OH, CO ₃ ,HCO	2008	EPA-150.1, 9040, 120.1, 9050, 310.1, SM 2320 B

9.2 Metals

9.2.1 Inductively Coupled Argon Plasma / Mass Spectrometer

Instrument	ID	Analysis	Year in Service	Method
Perkin Elmer Elemental Scientific ICP-MS(SC2DXS)	PE-EL2	Metals	2011	EPA 200.8 SW 6020B
Perkin Elmer Elan 9000 ICPMS (P2160412)	PE-EL 3	16 Routine metals;Additional metals available upon request	2014	EPA-200.8/6020

9.2.2 Inductively Coupled Argon Plasma

Instrument	ID	Analysis	Year in Service	Method
Perkin Elmer Optima 4300DV	PE-OP2	Metals	2004	EPA 200.7 SW 6010B
Perkin Elmer Optima 8300DV	PE-OP3	Metals	2014	EPA 200.7 SW 6010B

9.2.3 Graphite Furnace Atomic Absorption Spectrophotometers

Instrument	ID	Analysis	Year in Service	Method
Perkin Elmer SIMAA 6000 Auto sampler 72 Zeeman Background AA Winlab Software Perkin Elmer Furnace Cooling System FCSO1	PE-1	Chromium	2000	EPA-200.9

9.2.4 Mercury Analyzers

Instrument	ID	Analysis	Year in Service	Method
Quick Trace Mercury Analyzer M-6100	CETAC1	Mercury	2004	SW-7470A/245.1 & SW-7471A

9.2.5 Flash Point

Instrument	ID	Analysis	Year in Service	Method
Koehler, K16200 Flash Point Unit	FP#1	Pensky Martin Closed Cup Manual Flash Test	2012	

9.3 ORGANICS

9.3.1 GC/MS - Semi Volatiles

Instrument	ID	Analysis	Year in Service	Method
HP 5972 HP 5890 Series Autosampler HP Tray ASTR08 HP7976 AS71 HP Chemstation with Enviroquant	MS-B1	Semi-Volatiles	1994	EPA-625 EPA-8270C
HP 5972 HP 59822B IAG02 HP GC System injector HP 5890 Series Autosampler HP Tray ASTR06 HP Chemstation with Enviroquant	MS-B2	Semi-Volatiles	1994	EPA-625 EPA-8270C
Varian 4000 GC / MS Varian CP-8400 Autosampler	MS-B3	Synthetic Organic Compounds	2007	EPA-548
HP 6890 Series GC System GC System injector 7673 HP 5973 Mass Selective Detector	MS-B4	8270 NDMA, 8270 SIM, PNA, 1,4-Dioxane	2003	EPA 8270C
HP 6890 Series GC, 7673 Injector	MS-B6	525, 507, 548(TBD)	2012	EPA-525 EPA-507
HP 6890 Series GC System HP 5973 Mass Spectrometer 7673 Injector HP GC System injector 7673	MS-B7	LUFT GC-MS, Diluent, Motor Oil, Crude, Diesel, 8270 SIM, PNA	2013	Luft GC-MS EPA 8270C

9.3.2 GC/MS - Volatiles

Instrument	ID	Analysis	Year in Service	Method
HP 5890 Series II HP 5972 Tekmar 3100 Concentrator Tekmar Dohrmann Solatek 72 HP Chemstation with Enviroquant	MS-V2	Volatiles	2009	EPA-8260B Soil**
HP 5890 Series II HP 5972 Tekmar 3000 Concentrator Tekmar Dohrmann Solatek 72 HP Chemstation with Enviroquant	MS-V3	Volatiles	1993	EPA-8260B Soil
HP 5973 (mass selective detector)	MS-V5	Volatiles	1999	EPA-8240B

Tekmar 3100 Concentrator Tekmar Aqua Tek 70 HP Chemstation with Enviroquant HP 6890 GC System				EPA-8260B** 521.2
HP 5890 II Series GC System HP 5972 Tekmar Dhormann Aqua Tek 70 Tekmar 3100 HP Chemstation with Enviroquant	MS-V6	Volatiles	2000	EPA-524.2(1,2,3-TCP)
HP 5890 II Series GC System HP 5971 Tekmar 3100 Concentrator Tekmar Aqua Tek 70 HP Chemstation with Enviroquant	MS-V7	Volatiles	2001	EPA-601/602** EPA-624**
HP 5890 II Series GC System HP 5972 OI Analytical eclipse OI Analytical 4600 SAM HP Chemstation	MS-V10 (MS-D1)	Volatiles	2001	EPA-8260B Short List
HP 5890 II Series GC System HP 5972 OI Analytical Eclipse OI Analytical 4660 SAM HP Chemstation	MS-V12	Volatiles	2003	EPA-8260B Short List
Agilen Technologies 5973 Agilen Technologies 6890N Tekmar 3100 Concentrator Tekmar Aqua Tek 70 HP Chemstation	MS-V13	Volatiles	2003	EPA-8240B EPA-8260B
HP 5890 II Series GC System HP 5973 Series (MSD) Tekmar 3000 Tekmar Aqua Tek 70 HP Chemstation with Enviroquant	MS-V14	Volatiles	2013	EPA-524.2/8260B

** DOD Project Specific

9.3.3 Air Room Testing

Instrument	ID	Analysis	Year in Service	Method
MS-A1 HP 6890 Series GC System MSD-19 HP Agilent 5973 PCT-1 Preconcentrator 7100AR AS-62 Autosampler 7405 CCI-A1 Canister Cleaner 3100A	MS-A1	a TO-14V Full a TO-15V Full	2009	TO-14A TO-15
MS-A2 Agilent 6890 N MSD-18 Agilent 5973N AS-60 Autosample and Pre. Concentrator model	MS-A2	a TO-3V Full	2009	TO-3

7032AB-L				
MS-A3 Agilent 6890 MSD-20 Agilent 5973 Mass Selective Detector AS-63 Autosampler model 7032AQ-L	MS-A3	a TO-3V Full	2009	TO-3
GC-A1 Agilent 6890 N (TCD/FID) AS-59 Autosampler 7032 AB-L DD-10 Dynamic Dilutor(4600A)	GC-A1	a 3CV fixed gasses a A-D 1946 fixed gasses	2009	3C Fixed Gases

9.3.4 Gas Chromatography

Instrument	ID	Analysis	Year in Service	Method
HP 5890 Series II Dual FID HP 7673 Dual Tower Autosampler HP Chemstation with GC-Enviroquant	GC-2	Diesel Fuel Fingerprint Carbon Ranges	1991	8015M
HP 5890 Series II Dual ECD HP 6890 Injector HP Chemstation with GE-Enviroquant	GC-3	Haloacetic Acids Formaldehyde	2008 2009	EPA-552.3 EPA-556.1
Varian 3300 Dual ECD Varian 8200 Autosampler HP Chemstation with GC-Enviroquant	GC-4	DBCP and EDB	1989	EPA-504.1
HP 5890 Series II Split/Splitless Injector HP 7673 Autosampler HP Chemstation with GC-Enviroquant	GC-5	Diesel	1989	8015 M
HP 5890 Series II HP GC System HP Chemstation with GC-Enviroquant HP 7673 injector HP Controller	GC-8	Chlorinated herbicides	1990	EPA-515.1 EPA-8150 EPA-8151A 615
HP 5890 Series II Dual FID HP 7673 Dual Tower Autosampler HP Chemstation with GC-Enviroquant HP 7673 injector	GC-12	Methanol, Ethanol	1992	8015 DI
HP 5890 Series II Dual FID HP 7673 Dual Tower Autosampler HP Chemstation with GC-Enviroquant HP Controller	GC-13	Diesel	1992	8015M
HP 6890 Series HP 6890 Autosampler HP Chemstation with GC-Enviroquant HP Controller	GC-14	pesticides	2011	EPA-508 EPA-608 EPA-8082

HP 6890 Series II HP 6890 Autosampler HP Chemstation with GC-Enviroquant	GC-15	pesticides	2012	EPA-508 EPA-608 EPA-8082
HP 6890 Series II HP 6890 Autosampler HP Chemstation with GC-Enviroquant	GC-17	pesticides	2013	EPA-508 EPA-608 EPA-8080 EPA-8081A EPA 8082
HP 6890 Series II HP 6890 Autosampler HP Chemstation with GC-Enviroquant	GC-18	Organophosphorus pesticides	2015	EPA-8140 EPA-8141A

9.3.5 Gas Chromatography - Volatiles

Instrument	ID	Analysis	Year in Service	Method
Varian 3400	GC-V1		1991	RSK-175
HP 5890 Series II with PID and FID Tekmar 3000 Concentrator Tekmar Precept II Autosampler HP Chemstation with GC-Enviroquant	GC-V8	BTEX, MTBE, TPH (gas)	1998	EPA-8020, 8021B 8015M 5035
HP 5890 Series II with PID and FID Tekmar 70 Sample Concentrator Aqua Tek 3100 Auto Sampler HP Chemstation with GC-Enviroquant	GC-V9	BTEX, MTBE, TPH (gas)	2013	EPA-8020, 8021B 8015M

9.3.6 PETROLEUM

Instrument	ID	Analysis	Year in Service	Method
Grabner, Minivap VPXpert	PE#1	Vapor Pressure	2012	Petroleum
Agilent 6890, FPD	PE#2	Sulfur Compounds	2012	Petroleum
Agilent/Wesson 6890, Dual TCD, FID	PE#4	Fixed Gases, C1-C6+ Hydrocarbons	2012	Petroleum
Thermo Scientific, 2839 High Temp Water Bath	PE#5	Various	2012	Petroleum
IEC, HN Centrifuge	PE#6	Centrifuse Procedures	Unknown	Petroleum
TOX-100 AM743931	PE#7	Organic Chlorides Total Sulfur	2013	Petroleum
PAC OptiDist 04071	PE#8	Distillations	2013	Petroleum
Density Meter-DMA4500M	PE#9	API Gravity, Density and Specific Gravity	2013	Petroleum
Viscometer-SVM3000	PE#10	Viscosity	2013	Petroleum

9.3.7 HPLCs

Instrument	ID	Analysis	Year in Service	Method
HP 1050 Model 79856A Quaternary Eluent Pump HP 1100 Series Autosampler Multiwavelength UV Detector HP Chemstation with GC-Enviroquant	LC-14	Polynuclear Aromatic Hydrocarbons Carbamate and Urea-containing Pesticides Nitroaromatic and Nitramines	1994	EPA-610 EPA-8310 EPA-632 EPA 8330 EPA 549

9.3.8 Instrument

Instrument	ID	Analysis	Year in Service	Method
SPE - DEX (main) (Controller Extractor) Horizon Technology model - SPE - 100 Serial - 06 - 0489	SPE - DEX	525 Extraction	2007	525 Extraction
Extractor SPE 03 model - SPE - 4790	SPE - DEX	525 Extraction	2007	525 Extraction
Extractor SPE 04 model - 06 - 0799	SPE - DEX	525 Extraction	2007	525 Extraction
Extractor SPE 05 model - 06 - 0797	SPE - DEX	525 Extraction	2007	525 Extraction
Extractor SPE 06 model - 06 - 0802	SPE - DEX	525 Extraction	2007	525 Extraction
Extractor SPE 07 model - 06 - 0798	SPE - DEX	525 Extraction	2007	525 Extraction
Extractor SPE 08 model - 06 - 0800	SPE - DEX	525 Extraction	2007	525 Extraction
Extractor SPE 09 model - 06 - 0801	SPE - DEX	525 Extraction	2007	525 Extraction
Extractor SPE 10 model - 06 - 0796	SPE - DEX	525 Extraction	2007	525 Extraction

9.3.9 Other Instruments

Instrument	ID	Analysis	Year in Service	Method
OA-SYS (Heating System Blue M) Precision Scientific (Coliform Incubator Bath)			1992	3510 3550 3580

9.3.10

Instrument	ID	Analysis	Year in Service	Method
Liquid-Liquid Extractor 2	LLE-2	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 3	LLE-3	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 4	LLE-4	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 5	LLE-5	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 6	LLE-6	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 7	LLE-7	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 8	LLE-8	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 9	LLE-9	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 10	LLE-10	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 11	LLE-11	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 12	LLE-12	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 13	LLE-13	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 14	LLE-14	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 15	LLE-15	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 16	LLE-16	3520 Continuous Liquid-Liquid Extraction	2008	3520 Continuous Liquid-Liquid Extraction
Liquid-Liquid Extractor 17	LLE-17	3520 Chiller Recirculation	2008	Chiller Recirculation
Liquid-Liquid Extractor 18	LLE-18	3520 Chiller Recirculation	2008	Chiller Recirculation

Liquid-Liquid Extractor 18	LLE-18	3520 Liquid Extraction	2008	Liquid Extraction
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9.4 Microbiology

Instrument	ID	Model	Analysis	Year in Service
Incubator - VWR Model(1)	102	1565	5.5.5 or 10 Tube	1989
Incubator - VWR Model (2)	102	1565		1989
Incubator - ASP Model (3) American Scientific	103	IS-81	5.5.5 or 10 Tube	1989
Autoclave (1) Marketforge Sterilmatic (2)	AMS001	STM-E STM-EL	1600 Tubes of media (3200)	1990
WaterBath Thermo Scientific (Precision)	W13	2862	10/20 Tube Samples	2008
Quebec Colony Counter Capacity/100 Potential Capacity/200	QCC001	3330	Colony Counter	1980
IDEX Spectroline IDEXX	IDXS001	CM-10	Total Coliform E. Coli Colliert presence/Absence	1996
IDEXX Quanti Tray Sealer Model 2X	IDXT001	2X	Total Coliform E. Coli Colliert presence/Absence	2003

9.4.1 BACTERIOLOGICAL EQUIPMENT

Equipment	Manufacture	Model	Date Last Maintenance
pH Meter	Orion Research	301	Per Use
Balance	Mettler Toledo	JB3002-L-G/A	7/16/2013
Conductivity Meter	YSI	3100	Per Use
Incubator	VWR	1565	Monthly
	VWR	1565	
	American Scientific	IS-81	
WaterBath	Thermo Scientific (Precision)	2862	Quarterly
Refrigerator	North Star	-	As Needed
Autoclave	Marketforge Sterilmatic	STM-E STM-EL	Weekly/Monthly
Hot Air Over	VWR	1370FM	Per Use/Monthly
Colony Counter	Darkfield Quebec	3330	Per Use
Ultraviolet Light 254 nm	IDEX Spectroline IDEXX	EA-160	Per Use

9.5 ORGANICS

9.6 Field Service-Sampling Equipment

1. 2" Grunfos Pump with hydraulic Reel and Control Box for pumping water out of monitor wells.
2. ProAir Air compressor, 20 gal, 5 HP model # PRFB5020VP
3. Genetac megaforce 6500 generator model No. 1006-0
4. Quik-E-bailer model 300DC For taking water out of monitor wells
5. **Dissolved oxygen meter model 51B, serial # 13633 for Field Do's ***
6. **Turbidity meter model 2008 serial # 1914-3593 ***
7. H₂S monitor model HS-82A serial # HS7568
8. H₂S Continuos Monitor TXL01
9. Oakton pH/conductivity and temperature meter serial # 35858 – PH11
10. Oakton pH/conductivity and temperature meter serial # 510764– PH15
11. Oyster pH/conductivity and temperature meter serial # 976858– PH16
12. **Sensidyne gastec pumpkit model # 800 ***
For testing H₂S in the field.
13. **Airchek sampler model 224-PCXR7 serial # 523231 ***
Sampling air in the field.
14. 2" Grunfos Pump with Hand Reel and Control Box for dumping water out of monitor wells.
15. **Scott 2.2 self contained breathing apparatus serial # 39700110 ***
16. **3-extra oxygne tanks for Scott 2.2 SCBA's ***
17. ISCO 3210 ultrasonic flow meter serial # 09748-025
Measuring the amount of water that has flowed during a certain amount of time
18. **Scott 2.2 self contained breathing apparatus serial # 39800176 ***
19. **Scott 2.2 self contained breathing apparaturs serial # 39700096 ***
20. ISCO 3700 24 hr water sampler serial # 09421-074
21. ISCO 2700 24 hr water sampler serial # 06112-097
22. CLT01
23. 2-chlorine test kits model CN-70
24. 3-Hand soil Auyers and extentions
25. **Sigma 24 hr auto sampler model # 1350 serial # F07937875 ***
26. **Gas meter and air sampling canister serial # 27515 ***
27. **Gas meter and air sampling canister serial # 1197501 ***
28. **Gas meter and Air sampling canister serial #1197500 ***
29. **5 cooling coils and hoses for sampling Hot samples to cool them down before sampling ***
30. **O₂,lel,H₂S monitor model 6x82 serial # 13545 ***
31. 4 ISCO batteries and 2 chargers
32. Clam shell sampler for sludge
33. Half-face respirator Scott 66M

- 34. **Half-face respirator North 770030 Series M ***
- 35. **Full Face respirator Scott P/N 802451-01 ***
- 36. Half-face respirator Scott 66M
- 37. Vacuum pump serial # 1190 model # 2Z866
- 38. **Gas Powered soil Auger and extensions ***

Note: * = These equipments are available for use.

9.7 Support Equipment & Supplies

9.7.1 Laboratory Information Management System (LIMS)

1. Hardware

1. Compaq Proliant ML530

- 1. Intel Pentium XEON 1 Ghz Processor
- 2. 1 Gb SDRAM
- 3. Hot Plug Drive Cage - Ultra 2
- 4. Integrated Ultra 2 SCSI Controller
- 5. Compaq Smart Array 431 Controller
- 6. RAID 5 with Online Spare Setting
- 7. 1.44 Mb Floppy Disk Drive
- 8. Five 18.2 Wide Ultra 3 SCSI Hot pluggable drive
- 9. 32x CD-ROM
- 10. Compaq 10/100 TX UTP NIC
- 11. Compaq 40/80 Gb DLT Drive-Internal
- 12. Automatic Server recovery
- 13. Compaq Insight Server Manager
- 14. 3 year Limited Warranty

2. Compaq Smart Array 431 Controller

- 3. ML530 Hot Pluggable Redundant Power Supply
- 4. Device ID: 11001
- 5. Serial Number; D043FPW1K126

2. Installed Software

1. Novell Netware 5.1 with Service Pack 2.0A

- 1. 105 user license
- 2. Serial Number = 300792721
Activation Key = 2D27C68EFE2CB72F
- 3. Serial Number = 400439667
Activation Key = 4B5669AA6C9E1D16

2. Arev NLM 5.0

- 3. Backup Exec for Netware Version 8.5 Revision 3012 Multi-Server Mode (by Veritas)
- 4. Inoculate - IT Version 4.5 100 User (Not used)

3. Volumes

Volume Name	Drive	Size, MB	Major Contents
SYS	G:	3000	System Files, Email In-Box
APPS	F:	20000	LIMS Database, Raw Data
DOCS	H:	8002	Client EDDs, Word Document, Control Charts
QUE	Q:	2000	Print Job Queues
WEB_APPS	W:	18000	Web Pages, User Home Directories, Quotes, Time Clock, Quotes, Misc

Printers

- | | | |
|-----|------------------------|----|
| 1. | Laser Jet Printers | 84 |
| 2. | Ink Jet Printer | 7 |
| 3. | Dot Matrix Printers | 2 |
| 4. | Label Printers | 10 |
| 5. | PC – Pentium 2 | 1 |
| 6. | PC – Pentium 3 | 8 |
| 7. | PC – Pentium 4 | 43 |
| 8. | PC – Pentium Dual Core | 48 |
| 9. | PC – Pentium Quad Core | 3 |
| 10. | PC – Lap tops | 13 |

- | | | |
|----|----------|---|
| 4. | Scanners | 2 |
|----|----------|---|

**Servers - Novell File Server
LIMS SOP 0521**

I. Purpose

This file server is used for user authentication, print services, file services, and hosts the Legacy Arev LIMS database.

II. Configuration

A. Information

- | | | |
|----|---------------|--------------|
| 1. | Server Name | SRV_BCLABS |
| 2. | Device ID | 11001 |
| 3. | Serial Number | D043FPW1K126 |

B. Hardware

1. Compaq Proliant ML530
 - a. Intel Pentium XEON 1Ghz Processor
 - b. 1 Gb SDRAM
 - c. Hot Plug Drive Cage - Ultra 2
 - d. Integrated Ultra 2 SCSI Controller
 - e. Compaq Smart Array 431 Controller
 - f. RAID 5 with Online Spare Setting
 - g. 1.44 Mb Floppy Disk Drive
 - h. Five 18.2 Wide Ultra 3 SCSI Hot Pluggable Drives
 - i. 32x CD-ROM
 - j. Compaq 10/100 TX UTP NIC
 - k. Compaq 40/80 Gb DLT Drive - Internal
 - l. Automatic Server Recovery
 - m. Compaq Insight Server Manager
 - n. 3 year Limited Warranty
2. Compaq Smart Array 431 Controller
3. ML530 Hot Pluggable Redundant Power Supply

C. Installed Software

1. Novell Netware 5.1 with Service Pack 2.0A
 - a. 105 user license
 - b. Serial Number = 300792721 Activation Key = 2D27C68EFE2CB72F
 - c. Serial Number = 400439667 Activation Key = 4B5669AA6C9E1D16
2. Arev NLM 5.0
3. Backup Exec for Netware Version 8.5 Revision 3012
Multi-Server Mode (by Veritas)
4. Inoculate-IT Version 4.5 100 User (Not used)

D. Volumes

Volume Name	Drive	Size, MB	Major Contents
SYS	G:	3000	System Files, Email In-Box
APPS	F:	20000	LIMS Database, Raw Data
DOCS	H:	8002	Client EDDs, Word Documents, Control Charts
QUE	Q:	2000	Print Job Queues
WEB_APPS	W:	18000	Web Pages, User Home Directories, Quotes, Time Clock, Quotes, Misc

Servers – Windows SQL Server (Test)
LIMS SOP 0522a

I. Purpose

This file server is used exclusively as a Test SQL database server.

II. Configuration**A. Information**

1. Server Name: BCL_LIMS_Pinos
2. Device ID: 11002
3. Serial Number: 6J32LOG55C002
4. IP Address 192.168.168.008

B. Hardware

1. Compaq Proliant ML570 G2
Intel Xeon 2.00 GHz processor
4 GB RAM (2x1024, 2x512, 4x256)
Two 6x1” Drive cages (holds up to 12 1” hard drives)
Integrated Dual Wide-Ultra 3 Controller
Smart Array 5304/256MB Four Channel Controller (RAID)
RAID 5 with online spare
Four 36.4GB pluggable Ultra3 SCSI hard drives
AIT 100 GB tape drive, hot pluggable
NC3163 Fast Ethernet 10/100 WOL PCI
NC7131 Gigabit Server Adapter, 64-bit/66MHz, PCI, 10/100/1000-T
Two redundant 600W hot pluggable power supplies
Redundant hot pluggable fan
1.44MB floppy disk drive
48X CD-ROM drive
Compaq Insight Server Manager
3-year limited warranty

C. Installed Software

1. Windows 2000 Server plus 5 CALs
2. Microsoft SQL Server 2000 Enterprise (1 processor)

Servers - Windows SQL Server (Test)
LIMS SOP 522b

I. Purpose

This file server is used exclusively as a Test SQL database server

II. Configuration

A. Information

- 1. Server Name Bcl_Lims_Slate
- 2. Device ID: 11003
- 3. Serial Number: 6J35LG52R00H
- 4. IP Address 192.168.168.007

B. Hardware

- 1. Compaq Proliant ML310
 - a. Intel Pentium 4 2.53 GHz processor
 - b. 1 GB RAM (4x256, PC2100 ECC DDR SDRAM)
 - c. Integrated Single Channel Ultra3 SCSI Adapter
 - d. Smart Array 642 Controller (RAID) (RAID 1 setting)
 - e. 36.4GB Ultra3 SCSI 10,000 rpm Hard Drive
 - f. 1.44MB Floppy Disk Drive
 - g. High speed IDE CD-ROM Drive
 - h. Compaq NC7760 PCI Gigabit Server Adapter (Integrated/Imbedded)
 - i. SmartStart and Insight Manager
 - j. 1-year Limited Warranty
- 2. Drive Cage
 - a. ML3xx Two Bay Hot Plug SCSI Drive Cage
 - b. 3 146.8 GB 10K Pluggable Universal Hard Drives

C. Installed Software

- 1. Windows Server 2003 Standard Edition plus 5 CALs
- 2. Microsoft SQL Server 2000 Standard Edition

**Servers - Windows SQL Server (Production)
LIMS SOP 522e**

I. Purpose

This file server is used exclusively as a Production SQL database server

II. Configuration

A. Information

- 1. Server Name Bcl_Lims_Shasta
- 2. Device ID: 11005
- 3. Serial Number: USE907N25C
- 4. IP Address: 192.168.168.10

B. Hardware

- 1. HP Proliant ML370 G5 Tower Server
 - a. Intel Quad core Xeon E5440 2.83 GHz processor
 - b. 32 GB RAM (8x4GB, PC2-5300, DDR2, 667 MHz)

- c. Smart Array P400-Series 512MB (RAID 6 setting)
- d. Eight 72GB SAS SFF Single Port 15K rpm Pluggable Hard Drive
- e. 1.44MB Floppy Disk Drive
- f. High speed IDE DVD/CD-ROM Drive
- g. HP Gigabit Server Adapter (Integrated/Imbedded)
- h. HP Redundant Hot Plug Power Supply
- i. HP Redundant Hot Plug Fan
- j. 3-year On-Site 24x7 6-hour call-to-repair warranty

C. Installed Software

- 1. Windows Server 2003 Enterprise Edition plus 25 CALs
- 2. Microsoft SQL Server 2000 Enterprise Edition

9.8 Laboratory Water System

Instrument	Year in Service
Ionics Deionized Water System	1990
Ionics Nanopure Water System	1990

9.9 Glassware

Instrument	Year in Service
Class A for Reagent and Standard Preparation	1990
Various Calibrated Units	1990

9.10 Diluters

Instrument	Year in Service
Hamilton Microlab 500 Series (Diluters #'s 4)	2000
Hamilton Microlab 500 Series (Diluters #'s 6)	2001
Hamilton Microlab 500 Series (Diluters #'s 7)	2003
Hamilton Microlab 500 Series (Diluters #'s 8)	2006
Hamilton Microlab 500 Series (Diluters #'s 9)	2008

9.6.5 Refrigerators

Instrument	Year in Service
Northstar Walk-In	1987
Rancho Reach-In (2)	1990
Traulsen Reach-In (1)	1987
Nor lake (1)	1987
Refrigerator: Monitowoc(1), Zero Zone(1), VWR Scientific(2), Reach In (1), GE(4), Magic chef(1), Sears Cold Spot(1), McCall(1), Ardco (1), FRIGIDAIRE (GM)	
Freezer: Box Freezer(1), Cold Spot(1), Whirlpool(1), GE(3), Montgomery Ward(1)	

9.11 Ovens

Instrument	Year in Service
Fisher Scientific (3)(#'s 17, 20, 10)	1987
VWR (2)(#'s 19& 22) VWR Scientific (1) (#'s 16)	1987
Precision Scientific (2)(#'s 13)	1987

Instrument	Year in Service
Thermo Precision Scientific(2)(#'s 19&21)	2008
Thermo Precision Scientific(2)(#'s 23)	2009

9.12 Misc Equipment

Instrument	Year in Service
Balance- Mettler Toledo Top Loading ML3001E/03(#29)	2012
Balance- Sartorius Sartorius ED124S (#28)	2011
Balance- Sartorius ED224S (#27)	2009
Balance-Mettler Toledo Analytical AB 204-S (#25)	1987
Balance-Ohaus Precision Standard Top-Loading Scout Pro SP202(2) (#24 & 23), TS4KD (#16)	1988
Balance-Mettler Toledo Top-Loading PE3600, PL300 (#10 & 12)	1988
Balance-Mettler Toledo Top-Loading PB3002-S, BD202, PB1502-S (#19, 13 & 21)	2000
Balance-Denver Instrument Analytical Denver Model A160 (#8)	2000
Balance-Mettler Toledo JB3002-L-G/A(#26)	2008
Mettler Toledo Analytical PB303 (#8)	2000
Balance-Ohaus Precision Standard Top-Loading TS400 (#16 & 11)	2008
Balance-Ohaus Precision Standard Top-Loading TS400 (#30)	2014

9.13 Safety

Instrument	Qty
Laboratory Hoods	24
Fire Extinguishers Halon Combined Class ABC	36
Eye/Safety Showers	8/9
Chemical Spill kit	3
First Aid Kits	6
Fire Blanket	1