Baler Downloading and Field Quality Assurance using EzBaler and PQL

This document provides instructions for downloading Balers using the EzBaler program and reviewing the State of Health (SOH) data using PQL. EzBaler is still under development, but at this point it is the best option for downloading data from multiple Balers at one time. Known problems are that it will sometimes fail to connect to a Baler, and that it will hang up if it encounters corrupted data.

This document contains four sections

- Connecting to the Balers
- Downloading SOH data
- Downloading the full data set
- Reviewing SOH data

1. Connecting to the Baler

First, turn off the laptop computer's wireless

1	Location:	EzBaler		;	
	Show:	Built-in Etherne	e	\$	
TCF	P/IP PPPc	E AppleTalk	Proxies	Ethernet	
Configure IPv4	Manuall	y		\$	
IP Address	192.168	.0.5			
Subnet Mask	255.0.0.	0			
Router	:				
DNS Servers	:				
Search Domains					(Optional
IPv6 Address					ăr.
	Configu	re IPv6)			6

In the Mac network configuration make sure the location is set to EzBaler



Connect the Balers to the download box and connect the download box to the laptop and power.



Select the ezb icon from the toolbar OR type ezb in a X-Terminal window's command line.

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<u>File</u> Informatio	m <u>A</u> ction	5					18	<u>H</u> elp
				м	lessages			
				Balers	s' Informaiton			
	Tag	Station	Q330 FW	Datasize	StartTime		EndTime	
Select All								
Clear All								
				1	1	1		1
Enumerate	Set	TagID	pload FW	Clear Assoc	Clear Data	Clear All	Officad Data	Exit

Select the Enumerate button on the bottom of the EzBaler screen.

Select Start Enum on the bottom of the Enumeration page. Press the ATTN buttons on each of the Balers one at a time, waiting a few seconds between each one, so that they don't all come up at once.

Internetage	Action						
17-11-1				Messages			
$- \Theta \Theta$)		X	Enumeration			
			Baler	's' Informaiton			
Tag	Station	Q330 FW	Datasize	StartTime	EndTi	me	
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Steps: (Total nu	1)Click 'Start I mber of baler(s	Enum' btn (2)Hi s) found so far:	t balers' ATTN b 0	tns (3)Wait for all stat	lights to Green S	olid & 4 Blinks	
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Steps: (Total nu lelectron	1)Click 'Start I mber of baler(s	Enum' btn (2)Hi s) found so far: k	t balers' ATTN b' 0 Start Enur	tns (3)Wait for all stat n Done	lights to Green S	olid & 4 Blinks	

Wait patiently (or impatiently) while the Balers boot up. Eventually you should see all of the Balers listed on the Enumeration screen. If one or more of the Balers fails to appear on the enumeration screen then try the following in this order.

- 1. Select Done, then Select Enumerate, then select Start Enum, then reboot the problem Baler(s).
- 2. Close the EzBaler program and start over.
- 3. Close the EzBaler program, reboot the computer and start over.

Once all of the Balers have been enumerated select done.

2. Downloading SOH data

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File Information Act	ion								<u>H</u> elp		
					Messages						
5521	12:04	:49 found	5537 an	d set IP wit	h 192.168.21	.203					
5537 5473	12:05	:57 Enume :57 Enume	rating di rating f	inished by t	he user						
5262	12:05	2:05:58 DETECT operation has been finished succesfully 2:05:58 All the balers finished the job DETECT									
		Balers' Information									
	Tag	Station	Q330 FW	Datasize	• StartTime		EndTime				
	5521	XP-KAKK	Yes 1.	62 7059(M)	2006-10-03	09:17:35	2007-06-13	09:31:20			
	5262	XP-QUHR XP-CHIC	Yes 1.0	52 4867(M) 52 10204(M)	2006-09-05	18:29:23 08:26:43	2007-04-17	12:14:34			
	5537	XP-KYRC	Yes 2.:	10 5386(M)	2006-10-24	14:07:43	2007-05-16	08:48:30			
					I						
Select All											
Clear All											
	1		(77					
Enumerate	Set Tag	ID Upl	oad FW	Clear Assoc	Clear Data	Clear Al	Offload	Data	Exit		
								100%			

Record the Baler information on the service sheet, and then select the Balers to be downloaded from the list on the left.

File Information	Antion	() · · · · · · · · · · · · · · · · · ·				,	contraction and and and and and and and and and an				
	Action										<u>H</u> elp
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						B	alers' Informaiton				
	T	ag	Station	Q330	FW	Datasize	StartTime		EndTime		
	5555	521 473 262 537	XP-KAKK XP-QUAR XP-CHIC XP-KYRC	Yes Yes Yes	1.62 1.62 1.62 2.10	7059(M) 4867(M) 10204(M) 5386(M)	2006-10-03 2006-09-05 2006-09-05 2006-10-24	09:17:35 18:29:23 08:26:43 14:07:43	2007-06-13 2007-04-17 2007-04-18 2007-05-16	09:31:20 09:08:24 12:14:34 08:48:30	
Select All Clear All Enumerate		et Tag	ID Upl	oad FW		Clear Assoc	Clear Data	Clear Al	Offload	Data	Exit

From the action menu select Retrieve Health to a File. This will download state of health information such as power and temperature and will also download the 1 sample per second seismic data (LH?).

000		D	Easy Baler Application	- EzBaler			3
File Information Act	tion						<u>H</u> elp
			М	essages			1
5521 5537 5473 5262	12:04:49 f 12:05:57 E 12:05:57 E 12:05:58 E 12:05:58 f 12:05:58 f	'ound 5537 a Inumerating Inumerating DETECT opera NI the bale	nd set IP with 19 done. finished by the u tion has been fin rs finished the j	2.168.21.203 ser ished succesf ob DETECT	ully		
		\varTheta 🔿 🔿 🕅 Ple	ase select a directory to	save the data			
	Tag Stat	Directory:	/data/service0/sohd	ata —	£	EndTime	
7	5521 XP-+ 5473 XP-(5262 XP-(5537 XP-+	Selection: //data	/service0/sohdata			2007-06-13 09:31:20 2007-04-17 09:08:24 2007-04-18 12:14:34 2007-05-16 08:48:30	
Select All Clear All							
Enumerate	Set TagID	Upload FW	Clear Assoc	Clear Data	Clear Al	I Offload Data Ex	;it
						100%	

Select the directory data are to be downloaded to, such as the soldata directory for the current service run

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						Messages				
5521 A	12:15	:10 Baler :10 Baler	5537 5473	: load : load	ing the 14 ing the 15	36(/15951)tH 48(/17208)tH	n block n block			
5473	12:15	:10 Baler :11 Baler	5521	: load : load	ing the 14	48(/20709)tH 78(/21303)tH	n block n block			
5262	12:15	:12 Baler	5537	: load	ing the 15:	15(/15951)tH	n block			
					Ba	lers' Informaiton				
	Tag	Station	Q330	FW	Datasize	StartTime		EndTime		
	5521	XP-KAKK	Yes	1.62	7059(M)	2006-10-03	09:17:35	2007-06-13	09:31:20	
	5262	XP-CHIC	Yes	1.62	10204(M)	2008-09-05	08:26:43	2007-04-17	12:14:34	
	5537	XP-KYRC	Yes	2.10	5386(M)	2006-10-24	14:07:43	2007-05-16	08:48:30	
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Clear All	J									
Enumerate	Set Tag	ID Upl	oad FW	(lear Assoc	Clear Data	Clear Al	I Officad	Data E	xit

Verify, in the message box, that all of the Balers are downloading. The status bar in the lower right corner indicates the progress of the slowest Baler.

000		🔀 Easy Baler Appl	cation – EzBaler					
le <u>I</u> nformation (Action			Help				
			Messages					
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			Balers' Informaiton					
	Tag	Station Q330 FW Datasize	e StartTime EndTime					
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Midd	Lintosh HD	🔻 📁 service0	Today, 12:37 PM	Fold				
		🕨 📁 📁 fulldata	Today, 12:12 PM	Fold				
Des	ktop	🔻 📁 sohdata	Today, 12:14 PM	Fold				
A.	10	XPCHIC060905.SOH	Today, 12:22 PM	166.4 MB Doc				
Se 🍄 mdi	fort	XPKAKK061003.SOH	Today, 12:21 PM	161.8 MB Doc				
		XPKYRC061024.SOH	Today, 12:20 PM	124.6 MB Doc				
App	olications	XPQUAR060905.SOH	Today, 12:19 PM	134.4 MB Doc				
		Library	Sep 11, 2007, 3:31 PM	Fold				
Enu Doc	uments	mike	Sep 12, 2007, 3:31 PM	Fold				
ann		▶ C opt	Aug 21, 2007, 8:51 AM	Fold				
Mov	vies	System	May 15, 2007, 10:16 AM	Fold				
2		User Guides And Information	May 15, 2007, 5:51 PM	4 KB Alia				
🔮 Mus	sic	▶ 🗊 Users	Sep 12, 2007, 4:59 PM	Fold				
Pict	ures							
ezh								
	-	6						
		15 item	154 64 CB available					

When all of the Balers have finished downloading verify in a finder window that all the files have been downloaded. The file sizes should be 30 to 60 times smaller than the full data set.

3. Downloading the Full Data set

$\Theta \Theta \Theta$		🔀 Easy Baler Applica	tion – EzBaler	
File Information	n <u>A</u> ction			<u>H</u> elp
5521 5537 5473 5252	12:30:46 start 12:31:46 Baler 12:32:02 Baler 12:32:39 Baler 12:33:14 Baler	downloading for 5537 5473: loading the 31 5537: loading the 34 5473: loading the 36 5537: loading the 68	Messages , 14(/623008)th block 146(/689477)th block 29//623008)th block 193(/689477)th block	
		Balen	s' Informaiton	
	Tag Station	Q330 FW Datasize	StartTime	EndTime
V	5521 XP-KAKK 5473 XP-QUAR 5262 XP-CHIC 5537 XP-KYRC	Yes 1.62 7059(M) Yes 1.62 4867(M) Yes 1.62 10204(M) Yes 2.10 5386(M)	2006-10-03 09:17:35 2006-09-05 18:29:23 2006-09-05 08:26:43 2006-10-24 14:07:43	2007-06-13 09:31:20 2007-04-17 09:08:24 2007-04-18 12:14:34 2007-05-16 08:48:30
Select All Clear All				
Enumerate	Set TagID U	pload FW Clear Assoc	Clear Data Clear All	Offload Data Exit
				1%

To download the full data set select the Balers to be downloaded from the list on the left.

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<u>File</u> Informatio	n <u>A</u> ction								<u>H</u> elp
	Retriev	e All to a File			м	essages			
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	Tag	Station	Q330	FW	Datasize	StartTime		EndTime	
Select all	5521 5473 5262 5537	XP-KAKK XP-QUAR XP-CHIC XP-KYRC	Yes Yes Yes Yes	1.62 1.62 1.62 2.10	7059(M) 4867(M) 10204(M) 5386(M)	2006-10-03 2006-09-05 2006-09-05 2006-10-24	09:17:35 18:29:23 08:26:43 14:07:43	2007-06-13 2007-04-17 2007-04-18 2007-05-16	09:31:2C 09:08:24 12:14:32 08:48:3C
Clear All									
Enumerate	Set Ta	agIDU	pload FW		lear Assoc	Clear Data	Clear All	Offload Data	Exit
Retrieve All Data								1	1%

In the Action menu select Retrieve All to a File.

000			🔀 Easy Baler Applic	ation - EzBaler			
<u>File</u> Information	n <u>A</u> ction						<u>H</u> elp
				Messages			
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		$\Theta \odot \odot \mathbf{X}$	Please select a directo	ory to save the da	ata		
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Ĩ	5521 XP- 5473 XP- 5262 XP- 5537 XP-	Selection: //d	ata/service0/fulidata		<u>O</u> <u>C</u> ant		2007-06-13 09:31:20 2007-04-17 09:08:24 2007-04-18 12:14:34 2007-05-16 08:48:30
Select All							
Clear All							
Enumerate	Set TagID	Upload F	V Clear Assoc	Clear Data	Clea	r All	Offload Data Exit

Create and Select the fulldata directory for the current service run.

000		X Easy	Baler Applicat	ion - EzBaler			
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Select All Clear All Enumerate	Set TagID U	pload FW	lear Assoc	Clear Data	Clear All	Offload Data	Exit

In the message box verify that all the selected Balers are downloading.

File information Action Messages 5531 5537 1,532 5537 1,532 5537 1,532 511 1,52 512 512	000		🔀 Easy Baler Appli	cation – EzBaler						
Messages 5537 16:22:39 Baler 5537: loading the 679164/6894771th block 16:24:59 Baler 5537: loading the 686059/6894771th block 16:24:59 Baler 5537: loading the 686059/6894771th block 16:26:12 5537 Retrieve All operation has been finished succesfully 16:26:12 All the balers finished the job Retrieve All Image: Station 0300 FM 5262 5237 Machine EndTime EndTime 5241 XP=VARK Yes 1.62 7059(M) 2006-10-03 09:17:35 2007-06-13 09:31:20 5241 XP=VARK Yes 1.62 7059(M) 2006-0-03 08:12:43 2007-04-13 12:14:34 5537 XP=VARK Yes 1.62 7059(M) 2006-0-0-24 14:12:14:34 5537 5537 XP=KYRC Yes 2.10 5386(M) 2006-0-0-24 14:107:43 2007-04-18 12:14:34 5537 XP=KYRC Yes 2.10 5386(M) 2006-10-24 14:107:43 2007-05-16 8:48:30 Image: Ima	File Information A	ction				<u>H</u> el				
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L OL C FAIACTAC 1/1/ V L V 3V3U3DIA	-	•	1.63.00004.444	a ca webb	******)) + >				

After the download is complete verify that the sizes of the downloaded files are about the same as the Datasize shown in EzBaler



Open an Xterm terminal window and run sdrsplit on \underline{L} each of the data files using the -n option (no data files created), and the -i option (output an index). Redirect the output of sdrsplit to an index file for that station.

\varTheta 🔿 🖨 🗋 KYRC_index
KYRC LOG: rate=0 (2006.297 08:13:56.6400 to 2007.136 02:47:28.5000) : 4423019 points, -0.0 msec correction, (min,max,max_step = -0.0,0.0,0.0 msec)
KYRC VPB: rate=-10 (2006.297 08:08:13.9999 to 2007.136 02:48:23.9999) : 1760492 points, 14900.0 msec correction, (min,max,max_step = 0.0,14900.0,14900.0 msec)
KYRC YMV: rate=-10 (2006.297 08:08:09.9999 to 2007.136 02:48:29.9999) : 1760493 points, 14900.0 msec correction, (min,max,max_step = 0.0,14900.0,14900.0 msec)
KYRC VMW: rate=-10 (2006.297 08:08:09.9999 to 2007.136 02:48:29.9999) : 1760493 points, 14900.0 msec correction, (min,max,max_step = 0.0,14900.0,14900.0 msec)
KYRC VMU: rate=-10 (2006.297 08:08:09.9999 to 2007.136 02:48:29.9999) : 1760493 points, 14900.0 msec correction, (min,max,max_step = 0.0,14900.0,14900.0 msec)
KYRC VCO: rate=-10 (2006.297 08:08:07.9999 to 2007.136 02:48:27.9999) : 1760494 points, 14800.0 msec correction, (min,max,max_step = 0.0,14800.0,14800.0 msec)
KYRC VKI: rate=-10 (2006.297 08:08:07.9999 to 2007.136 02:48:27.9999) : 1760494 points, 14800.0 msec correction, (min,max,max_step = 0.0,14800.0,14800.0 msec)
KYRC VEA: rate=-10 (2006.297 08:08:07.9999 to 2007.136 02:48:27.9999) : 1760494 points, 14800.0 msec correction, (min,max,max_step = 0.0,14800.0,14800.0 msec)
KYRC VEC: rate=-10 (2006.297 08:08:07.9999 to 2007.136 02:48:27.9999) : 1760494 points, 14800.0 msec correction, (min,max,max_step = 0.0,14800.0,14800.0 msec)
KYRC VEP: rate=-10 (2006.297 08:08:07.9999 to 2007.136 02:48:27.9999) : 1760494 points, 14800.0 msec correction, (min,max,max_step = 0.0,14800.0,14800.0 msec)
KYRC LCE: rate=1 (2006.297 08:07:57.9999 to 2007.136 02:48:22.9999) : 17604963 points, 14620.0 msec correction, (min,max,max_step = -0.0,14620.0,14620.0 msec)
KYRC LCQ: rate=1 (2006.297 08:07:57.9999 to 2007.136 02:48:22.9999) : 17604963 points, 14620.0 msec correction, (min,max,max_step = -0.0,14620.0,14620.0,14620.0 msec)
KYRC HHE: rate=100 (2006.297 08:07:57.6799 to 2007.136 02:48:22.6799) : 1760496300 points, 14620.0 msec correction, (min,max,max_step = -0.0,14620.0 Å14620.0 msec
KYRC HHN: rate=100 (2006.297 08:07:57.6799 to 2007.136 02:48:22.6799) : 1760496300 points, 14620.0 msec correction, (min,max,max_step = -0.0,14620.0,14620.0 msec
KYRC HHZ: rate=100 (2006.297 08:07:57.6799 to 2007.136 02:48:22.6799) : 1760496300 points, 14620.0 msec correction, (min,max,max_step = -0.0,14620.0,14620.0 msec
KYRC OCF: rate=0 (2006.297 08:07:56.9999 to 2007.136 02:46:33.9999) : 0 points, nan msec correction, (min,max,max_step = 0.0,0.0,14620.0 msec)
KYRC ACE: rate=0 (2006.297 08:07:56.9999 to 2007.136 02:46:33.9999) : 0 points, nan msec correction, (min,max,max_step = 0.0,0.0,14620.0 msec)
KYRC LHE: rate=1 (2006.297 08:07:42.9999 to 2007.136 02:48:07.9999) : 17604963 points, 14620.0 msec correction, (min,max_max_step = -0.0,14620.0,14620.0,msec)
KYRC LHN: rate=1 (2006.297 08:07:42.9999 to 2007.136 02:48:07.9999) : 17604963 points, 14620.0 msec correction, (min,max,max_step = -0.0,14620.0,14620.0 msec)
KYRC LHZ: rate=1 (2006.297 08:07:42.9999 to 2007.136 02:48:07.9999) : 17604963 points, 14620.0 msec correction, (min,max,max_step = -0.0,14620.0,14620.0 msec)

Open the index file in a text editor and verify that all the channels are present and that they have expected time span.

4. Reviewing SOH data

🧉 X11	Applic	ations	Edit Wine	dow I	Help								* 🗟 🔹	📧 Thu 10:05 AM 🔇
e e Informati	Terr PIS	ninal	೫ N		X Eas	y Baler Applica	ation – EzBaler				Help			
	xma	n IO					Messages							Macintosh HD
5521 5537 5473 5262	Cust	12:22 12:22 12:22	Menu :08 Baler :09 5262 :09 All t	5262 5262 5262 Retri	: load : load : load eve He lers f	ing the 20 ing the 21 ing the 21 alth Data inished th	995(/21303): 101(/21303): 208(/21303): operation ha e job Retria	h block h block h block is been fi ive Health	nished succ Data	esfully	X		×	BBEdit_8.6.2_Demo.dt
						в	alers' Informaiton							
		Tag	Station	Q330	FW	Datasize	StartTime		EndTime					
		5521 5473 5262 5537	XP-KAKK XP-QUAR XP-CHIC XP-KYRC	Yes Yes Yes Yes	1.62 1.62 1.62 2.10	7059(M) 4867(M) 10204(M) 5386(M)	2006-10-03 2006-09-05 2006-09-05 2006-10-24	09:17:35 18:29:23 08:26:43 14:07:43	2007-06-13 2007-04-17 2007-04-18 2007-05-16	09:31:20 09:08:24 12:14:34 08:48:30				
	Ā													
Select A														
Enumerati	e	Set Tag	ID Up	load FW		Jear Assoc	Clear Data	Clear All	Offload	Data Ex	n 📄			Ø

Open an Xterm terminal window.

000	X xter	m	
mike-forts-computer:" m	dfort\$ cd	the state	
mike-forts-computer:/Us	ers mdfort\$ cd /data	/service0/	
mike-forts-computer:/da	ta/service0 mdfort\$	ls	
fulldata sohdata			
mike-forts-computer:/da	ta/service0 mdfort\$	cd sohdata/	
mike-forts-computer:/da	ta/service0/sohdata	mdfort\$ ls	
XPCHIC060905.SOH	XPKYRC061024.SOH		
XPKAKK061003.SOH	XPQUAR060905.SOH		
mike-forts-computer:/da	ta/service0/sohdata	mdfort\$ mkdir CHICO	
mike-forts-computer:/da	ta/service0/sohdata	mdfort\$ mdir KAKK	
bash: mdir: command not	found		
mike-forts-computer:/da	ta/service0/sohdata	mdfort\$ mkdir KAKK	
mike-forts-computer:/da	ta/service0/sohdata	mdfort\$ mkdir QUAR	
mike-forts-computer:/da	ta/service0/sohdata	mdfort\$ mkdir KYRC	
mike-forts-computer:/da	ta/service0/sohdata	mdfort\$ ls	
CHICO	QUAR	XPKYRC061024,SOH	
KAKK	XPCHIC060905,SOH	XPQUAR060905,SOH	
KYRC	XPKAKK061003,SOH	Ť	
mike-forts-computer:/da	ta/service0/sohdata	mdfort\$	

In the soldata directory make a directory for each of the stations that were downloaded.



Change directories to one of the station directories created in the previous step. Run sdrsplit on the .SOH file for the station that corresponds to the current directory. Repeat this for each of the stations downloaded.

1

	xterm	
XPKAKK061003,SOH XPQUAR060905,SOH		
mike-forts-computer:/data/service0/sohdata	a mdfort\$ mkdir CHICO	
mike-forts-computer:/data/service0/sohdata	a mdfort\$ mdir KAKK	
bash: mdir: command not found		
mike-forts-computer:/data/service0/sohdata	a mdfort\$ mkdir KAKK	
mike-forts-computer:/data/service0/sohdata	a mdfort\$ mkdir QUAR	
mike-forts-computer:/data/service0/sohdata	a mdfort\$ mkdir KYRC	
mike-forts-computer:/data/service0/sohdata	a mdfort\$ ls	
CHICO QUAR	XPKYRC061024.SOH	
KAKK XPCHIC060905,SOH	XPQUAR060905.SOH	
KYRC XPKAKK061003,SOH	.6. 33	
mike-forts-computer:/data/service0/sohdata	a mdfort\$ cd CHICO/	
mike-forts-computer:/data/service0/sohdata	a/CHICO mdfort\$ sdrsplit/XPCHIC060905.SOH	
Warning: unable to open leap second file:	/usr/local/lib/leapseconds	
mike-forts-computer:/data/service0/sohdata	a/CHICO mdfort\$ ls	
CHIC.XP.LCED.2006.248.022658 C	HIC.XP.VECD.2006.248.022708 T	
CHIC, XP, LCQ, ., D, 2006, 248, 022658 C	HIC.XP.VEPD.2006.248.022708	
CHIC.XP.LHE.02.D.2006.248.022643 CI	HIC.XP.VKID.2006.248.022708	
CHIC, XP, LHN, 02, J, 2006, 248, 022643 CI	HIC.XP.VMUJ.2006.248.022/10	
CHIC, XP, LHZ, 02, J, 2006, 248, 022643 C	HIC,XP,VMV,,J,2006,248,022710	
CHIC, XP, LUG, L, 2006, 248, 023102 CHIC, XP, LUG, L, 2006, 248, 023102 CH	HIC,XP,VMW,,J,2006,248,022/10	
CHIL, XP, VEA, . J, 2006, 248, 022708 C	HIL, XP, VPB, J, 2006, 248, 022/14	
mike-forts-computer:/data/service0/sohdata	a/UHILU mdfort\$ pql	1.

Sdrsplit will split the file into the individual channels, one file per channel per station. Start the program pql (either type pql in the command line or click on a pql icon on the dock).



For help in PQL refer to the mouse tips or select Controls and refer to the help for each of the tabs in controls.

In pql select the traces button.

000	🔀 PQL II - version 2007.133a		
POL II	Trace Magnify Spectra Split Headers		
TRACES			
Next			
Previous			
Difference Constraints			
 Window Scale Trace 	😝 🔿 🔗 📉 Please Select Directories and/or TRACE Files for Viewing		
O Window	data service0 sohdata CHICO		
Time Axis			
Absolute	Places Name	▼ Modified	
Display as	CHIC.XPLHZ.02.D.2006.248.022643	Today	
 Counts 	CHIC.XPLOG.L.2006.248.023102	Today	
O Volts	CHIC.XPVEA.D.2006.248.022708	Today	
	CHIC.XP.VECD.2006.248.022708	Today	
Remove	CHIC.XPVEP.D.2006.248.022708	Today	
Select All	CHIC.XPVMU.D.2006.248.022710	Today	
Deselect All	CHIC.XPVMV.D.2006.248.022710	Today	
MARK	CHIC.XPVMW.D.2006.248.022710	Today	
	Add Remove CHIC.XPVPBD.2006.248.022714	Today 🗾	
Print	File Filter		
Controls	Replace	e Current Traces 🗌	
About PQL	💥 <u>C</u> ancel	Open	
QUIT			
1			
mouse tips			

In the pql trace selection screen select the directory containing the SOH data to be viewed and then select all the files except the log file, and then select open.

● ● ●	🔀 PQL II - version 2007.133a	
PQL II	Trace Magnity Spectra Split Headers	
TRACES	2006 248 02:27	2615
Next		
Previous		2615
Window Scale		2615
 Trace 		
O Window	2006 248 02:27 XRCHIC.VMU	2615
O Relative		
Absolute Display as	XPCHKVK	2615
 Counts 		2615
Remove		
Select All	2005 248 02:27 XRCHK.VEC	2615
Deselect All	2006 248 02:27	2615
MARK	XPCHKVEA	
	2006 248 02-26	26148
Print		
Controis		26148
About PQL		26148
QUIT		
	2006 248 02:26 XPCHICLCO	26148
	2005 245 02225 Have been rate literation to some in the second of the se	261.49
	איאל על איש מער איר איר איר איר איר איר איר איר איר אי	20140
maura fir -	2006 248 02:26:43 000 271 06:00:03 294 09:33:23 329 02:53:23 363 20:13:23 033 13:33:23 068 06:53:23 103 00:13:2	3
mouse ups		

For descriptions of the state of health channels refer to DescriptionSOHChannels_v2.pdf.

Look for anomalies in the SOH data. In particular look at the following.

Packet buffer (VPB) should appear to be an almost solid bar with no gaps.

Mass positions (VM?) should be fairly smooth curves

System voltage (VEP) should be a regular saw tooth pattern.

Seismic signals (LH?) should show some signal. If there are any large spikes in the seismic signal the rest of the trace may appear flat.

Clock quality (LCQ) If the GPS is set for cycled power this should appear as a solid bar with no gaps. If the GPS is set for continuous power this appear as flat line with no dips.

Select all the traces and magnify a small portion at the right side of the screen (most recent data)



In the magnify window.

VPB should be a regular triangular saw tooth.

VEP, on a daily basis, should rise briefly to approximately 100 (bulk charge), then drop to approximately 90 (trickle charge) for a longer period, and then drop down and have a steady decay (night time discharge). The night time discharge should not drop below 80. If the bulk charge portion is not reaching close to 100 on a regular basis, check that the solar panel is clean and properly oriented and then check the battery with it disconnected from the solar. If daytime charging appears normal but the night time discharge is dropping below 80, check the battery with it disconnected from the solar.

LCQ If the GPS is set to continuous power the clock quality should spike to 100 every 2 hours. If the GPS is set for continuous power this should be a flat line with a value of 100. If this is not correct then check the GPS antenna and cable.

Scroll backward through the traces looking for irregularities.

$\Theta \Theta \Theta$	🔀 PQL II - version 2007.133a	1
PQL II	Trace] Magnify Spectra Split Headers	
TRACES	2005 248 02:27 XRCHKCVPB	
Next Previous	2006 248 02:27 XRCHIC. VMW 2615	
Window Scale	2005 248 92:27	1112
O Window Time Axis	2005 248 92:27 XRCHIC. VMU	
Relative Absolute	2005 248 92:27 XPCHIC. VKI	
Counts	2005 248 92-27 ZP.CHC. VEP	
Remove Select All		
Deselect All	2005 248 92:27 XPCHIC. VEA	
Print	2005 2218 022 25 ZPCHX: 022 142	8
Controls		8
About PQL		8
	2006 248 92:26 XRCHIC.LCQ	8
		8
mouseting	2006 246 02 26 43 000 271 06 00 03 294 09 33 23 329 02 53 23 363 20 13 23 033 13 33 23 048 06 53 23 103 00 12 23	
mouse ups		1

Return to the Trace page, select only the LH? Channels and magnify a small section of at the end of the data.



Continue to magnify, avoiding spikes in the data, until you can clearly see signals. On a good signal all three channels should show response. Scroll backward through the data.



You can use a filter to remove some of the background noise. The QA filter is a band pass filter from 0.008 Hz to 0.08 Hz.