

## Auditing, Cleaning, Filtering and Merging Las File Data

We often find that clients are not making maximum use of their downhole geophysical data as the Las files that have been provided by the geophysical logging company are not valid Las files, consist of multiple files for each hole, include multiple copies of the same data or contain data that has not been filtered or has been inappropriately filtered. In addition to these problems, often the clients do not even know where all the files they have received are stored on their systems.

We have developed the LasManager program to enable our clients or ourselves to find all the Las files on a clients' system and then produce a summary of what they contain. LasManager also enables the user to fix many problems found in the files, clean up the file header information, modify variable names, filter variables or delete variables from multiple files in a single pass.

Using LasManager plus our in-house software facilities, we can provide the user with a single valid Las file for each hole containing both unfiltered and filtered copies of the data.

Where the client has downhole geophysical data that is only in .csv format, LasManager can also be used to reformat this into Las files. And where the client has geophysical data only as paper copies, we can digitize these and provide them in Las format at a very reasonable price.

The LasManager program is available for purchase at \$750 plus GST per copy. After a preliminary review of a client's Las data, we are happy to provide a quote to perform auditing, cleaning, filtering and merging of their data.

A handwritten signature in blue ink that reads "Brett Larkin". The signature is written in a cursive, flowing style.

Brett Larkin – GeoCheck Director

dBASE PLUS 2.8 - [Selected Files from C:\LasData\Gunnedah]

FileName	Vers	Wrap	Well	Strt	Stop	Step	Units	Null	Srvc	Date	Comp	Fld	Loc	Ctry	Uwi	ADEN	AVOL	BAZI	BHTD	BHTF	BI
BANDO1G.LAS	2.0	N	BANDO1G	970.000	850.010	-0.010	M	-999.25	Reeves Wireline	N/A	AUSTRALIAN COALBED METHANE	PEL 1.	BANDO			✓					
BARNEYSPPRINGS1a.las	2.0	N	BARNEYSPPG1A	0.000	574.000	0.010	M	-999.25	Weatherford	04-Mar-2009	SANTOS LTD.	GUNNEDAH		AUSTRALIA		✓					
BIBBLEWINDIW.LAS	2.0	N	BIBBLEWINDIW	889.000	0.000	-0.010	M	-999.25	Reeves Wireline	13-DEC-2007	EASTERN STAR GAS LTD	NARRABRI	BIBBLEWINDI WEST		BW#1C	✓					
BLUEHILLS1.las	2.0	N	BLUEHILLS1	5.000	895.200	0.100	M	-999.25	Weatherford	20-Feb-2009	EASTERN STAR GAS	BLUE HILLS	PEL 238	AUSTRALIA							
BLUEHILLS1_new.las	2.0	N	BLUEHILLS1	5.000	895.200	0.100	M	-999.25	Weatherford	20-Feb-2009	EASTERN STAR GAS	BLUE HILLS	PEL 238	AUSTRALIA							
BLUEHILLS2.las	2.0	N	BLUEHILLS2	992.500	455.000	-0.025	M	-999.25	Weatherford	23-May-2010	EASTERN STAR GAS	BLUE HILLS	PEL 238	AUSTRALIA							
BOBBIWAA1.LAS	2.0	N	BOBBIWAA1	-1.300	602.610	0.010	M	-999.25	GSA	03/07/11	DART ENERGY	0 0 N/A	BOBBIWAA								
Bohena4.LAS	2.0	N	WILGA PARK # 4	722.700	1.000	-0.100	M	-999.25	BPB Wireline Serv	04-JAN-1999	FORCE ENERGY AUSTRALIA PTY	WILGA PARK	GUNNEDAH BASIN						✓	✓	
BOHENA7.LAS	2.0	N	BOHENA7	935.700	355.900	-0.100	M	-999.25	BPB Wireline Serv	24-DEC-1998	FORCENERGY AUSTRALIA PTY LT	NARRABRI	GUNNEDAH BASIN						✓	✓	
Bohena12C.LAS	2.0	N	Bohena12C	-1.220	1009.300	0.010	M	-999.25	RUTHERFORD	07/05/07	EASTERN STAR	NARRABRI	0 0 0								
Bohena13C.LAS	2.0	N	BOHENA13C	943.000	-1.990	-0.010	M	-999.25	Reeves Wireline	02-OCT-2007	EASTERN STAR GAS	BOHENA	NARRABRI			✓					
BohenaSth2C.LAS	2.0	N	BOHENASTH2C	-1.260	908.420	0.010	M	-999.25	RUTHERFORD	08/26/07	EASTERN STAR	NARRABRI	0 0 0								
BOMERAEAST1.las	2.0	N	BOMERAEAST1	465.000	1041.775	0.025	M	-999.25	Weatherford	25-Aug-2009	SANTOS LTD	BOMERA EAST		AUSTRALIA							
BrigalowPk2.las	2.0	N	BRIGALOWPK2	356.000	910.200	0.100	M	-999.25	Reeves Wireline	13-Oct-2004	EASTERN STAR GAS LIMITED	GUNNEDAH BASIN	30Deg 23' 50.36"S 14	AUSTRALIA			✓				
Calala1.las	1.2	N	CALALA1	539.000	495.010	-0.010	M	-999.25	BPB Wireline Serv	03-DEC-1998	AUSTRALIAN COAL BED METHANE	GUNNEDAH	GUNNEDAH		DEATAIL LOG	✓					
Cana1.las	2.0	N	CANA1	735.000	963.175	0.025	M	-999.25	Weatherford	14-Mar-2011	SANTOS	GUNNEDAH BASIN	NSW PEL 1	AUSTRALIA							
COOGAL2.las	2.0	N	COOGAL2	527.000	0.000	-0.010	M	-999.25	Weatherford	28-Oct-2009	EASTERN STAR GAS	COOCAL	COOGAL2	AUSTRALIA	COOGAL2	✓	✓				
Coolahville1.LAS	2.0	N	COOLAHVILLE1	-0.110	399.620	0.010	M	-999.25	RUTHERFORD	08/16/07	EASTERN STAR	COOLAH	0 0 0								
Coonarah3.las	2.0	N	COONARAH 3	736.200	343.200	-0.100	M	-999.25	Reeves Wireline	06-Dec-2001	EASTERN STAR GAS	COONARAH	GUNNEDAH BASIN	AUSTRALIA		✓					
CULGOORA2.las	2.0	N	CULGOORA2	466.000	1013.700	0.025	M	-999.25	Weatherford	16-Jan-2011	EASTERN STAR GAS	CULGOORA	UTM EASTING	AUSTRALIA							
Dewhurst2.LAS	2.0	N	DEWHURST2	977.000	-1.990	-0.010	M	-999.25	Weatherford	28-JUN-2008	EASTERNSTAR GAS	NARRABRI	NARRABRI		DEWHURST 2	✓					
Dewhurst5.las	2.0	N	DEWHURST5	0.000	823.500	0.100	M	-999.25	Weatherford		EASTERN STAR GAS	DEWHURST		AUSTRALIA							
DEWHURST8.las	2.0	N	DEWHURST8	0.400	1011.900	0.100	M	-999.25	Weatherford	16-May-2009	EASTERNSTAR GAS	DEWHURST	PEL 238	AUSTRALIA		✓					

  

Delete	OldVarName	Desc	NewVarName	Filter	FilterSize
<input type="checkbox"/>	ADEN	ALPHA PROCESSED DENSITY	ADEN	<input type="checkbox"/>	
<input type="checkbox"/>	AVOL	Annular Volume	AVOL	<input type="checkbox"/>	
<input type="checkbox"/>	BAZI	Borehole Azimuth (Mag.)	BAZI	<input type="checkbox"/>	
<input type="checkbox"/>	BHTD	DIFFERENTIAL TEMPERATURE	BHTD	<input type="checkbox"/>	
<input type="checkbox"/>	BHTF	BOREHOLE TEMPERATURE LOG	BHTF	<input type="checkbox"/>	
<input type="checkbox"/>	BISI	BIT SIZE	BISI	<input type="checkbox"/>	
<input type="checkbox"/>	BIT	Bit size	BIT	<input type="checkbox"/>	
<input type="checkbox"/>	BNXA	X Accelerometer	BNXA	<input type="checkbox"/>	

Text Colour Guide

- Grey - Read only item that cannot be modified
- Black - Item that can be modified but has not been
- Green - Item that can be modified and has been since the last Save
- Red - Wells: Well name cannot be found in Las Filename
- Date: Invalid date

Delete Variable

LasManager Editing Screen: Various public domain Las files from the Gunnedah Basin are shown here in LasManager.

The upper section of the screen displays each file, the data in its Las header such as Well Name, Geophysical Service Company, Logging Date etc followed by ticks for each variable that is present in the file. Items in black on this screen can be modified and the changes made implemented in the Las files when saved. Well names shown in red are those where the Well Name cannot be found in the Las filename. Dates shown in red are ones that are invalid.

The lower left section of the screen shows all the variable names that occur in the selected Las files. Here, the user can delete particular variables from the files, change the variable descriptions, change the names of variables or filter variables. Filtered copies of variables are appended as an additional column with a new variable name of the old variable name plus *\_Filt*.