

PACIFIC SECTION CRUISE AND CLEAN FILE NAME LIST

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This is a list of all Pacific Ocean files in 'The Best CTD/Hydrographic Data' area of the Java OceanAtlas Suite site (https://joa.ucsd.edu/Data_homepage). Because we are always adding new files, it may be slightly out of date, but the intent is to update this list as needed. There are two principal lists here: (1) A data file list organized by WOCE line number, year, and cruise, and (2) a list of matched cruise segments. The latter are data from different years which cover the same portion of a section within one geographic domain.

All "cleaned" data were downloaded from the CCHDO (<https://cchdo.ucsd.edu>) and then subjected to these procedures: (1) Bottle data columns and headers were rectified to a specified set and order. (2) Duplicate bottles and bottles with little or no data from oxygen titrations or nutrient analyses were discarded. (3) Data which were quality coded bad or uncertain were eliminated. (4) Where there were multiple casts at a single station, the ones which comprised the most nearly complete profile were combined into a single vertical profile. (5) Transects were sorted with south-to-north or west-to-east left-right orientation. (6) Where it took several cruises to cover one very long transect, the data were combined. (7) Overlapping or off-transect data were eliminated. No measured data values were changed. In a few cases errors in station metadata such as position or depth to bottom were corrected.

There are two special purpose data sets within the Pacific files: 'Line P' seasonal timeseries CTD sections in the NE Pacific off Vancouver Island and the Hawaii Ocean Timeseries ('HOT') monthly bottle and CTD profiles from a site northwest of Oahu.

PLEASE NOTE: The list of matched cruise segments appears at the end of this document.

CRUISES BY WOCE LINE NUMBER AND YEAR

See the top of page <https://joa.ucsd.edu/pacificdata> for a master map showing WOCE line numbers.

In the list which follows, a ~~cross-out~~ means that after inspection and/or cleaning, a cruise listed at the CCHDO was deemed not a suitable match for the intentions/criteria of the clean data project, or the data were not available from the CCHDO. Tasks not yet completed are highlighted in grey.

Files with suffix "_hy1.csv" are in Exchange format (see <https://cchdo.ucsd.edu/formats>), which can be read by several data exploration applications and any application which can read .csv files. Files with ".joa" suffix are in Java OceanAtlas binary format, which can be read only by that application. NOTE: Java OceanAtlas can be used to export an Exchange format (_hy1.csv) file from any JOA binary (.joa) file.

"WOA" in a file name indicates a data set made from WOA files to as closely as feasible match the track of the WOCE line in question. We will make most of these later.

At this time the focus is on the bottle data files. Only a few cruises now have CTD data on line here. In the fullness of time, we intend that there should be a cleaned bottle file and a cleaned CTD file for each cruise, each in ascii/Exchange and JOA binary formats.

PLEASE NOTE: A list of matched cruise segments (for the matched segments area of the JOA Suite data site) appears at the end of this document.

P01

1985

P01_1985_bottle_clean.joa

P01_1985_bottle_clean_hy1.csv

1999

P01_1999_bot_clean_edited.joa

P01_1999_bot_clean_edited_hy1.csv

2007

P01_2007_bot_clean_complete_sorted.joa

P01_2007_bot_clean_complete_sorted_hy1.csv

2014

P01_2014_bot_clean_hy1.joa

P01_2014_bot_clean_hy1.csv

WOA

P01NW

P01NW_1993_bot_clean_edited_hy1.csv

P01NW_1993_bot_clean_edited.joa

WOA

P02

1993_1994

P02_1993_1994_botclean_T_S_O2.joa

P02_1993_1994_botclean_T_S_O2_hy1.csv

~~1994~~

2004

P02_2004_bot_clean_sorted.joa

P02_2004_bot_clean_sorted_hy1.csv

P02_2004_ct1.zip

P02_2004_ctd_clean.joa

~~2010~~

2013

P02_2013_bot_clean_sorted.joa
P02_2013_bot_clean_sorted_hy1.csv
P02_2013_ct1.zip
P02_2013_ctd_clean.joa

WOA

P02_WOA05_in_mass_units.joa
P02_WOA05_in_mass_units_hy1.csv

P03

1985

P03_1985_all_bot_clean2.joa
P03_1985_all_bot_clean2_hy1.csv
P03_1985_ct1.zip
P03_1985_ctd_clean.joa

2005_2006

P03_2005_2006_all_bot_clean2.joa
P03_2005_2006_all_bot_clean2_hy1.csv

2013

P03W_2013_bot_clean_edited_hy1.csv
P03W_2013_bot_clean_edited.joa

WOA

P04

1989

P04_1989_merged_bot_clean_edited_hy1.csv
P04_1989_merged_bot_clean_edited.joa

P04W

2015

P05H

1987

P06

1967

P06_1967_28S_mass_clean.joa
P06_1967_28S_mass_clean_hy1.csv

1992

P06_1992_bot_clean.joa
P06_1992_bot_clean_hy1.csv
P06_1992_ct1.zip
P06_1992_ctd_clean.joa

2003

P06_2003_bot_clean.joa
P06_2003_bot_clean_hy1.csv
P06_2003_ct1.zip

2006

2009_2010

P06_2009_2010_bot_clean.joa
P06_2009_2010_bot_clean_hy1.csv
P06_2009_2010_ct1.zip
P06_2009_2010_ctd_clean.joa

2017

P06_2017_bot_clean.joa
P06_2017_bot_clean_hy1.csv

WOA

P06_WOA05_in_mass_units.joa
P06_WOA05_in_mass_units_hy1.csv

P08

1974

(It is unclear if Jim has a 1974 cruise along the P08 longitude in his pre-WOCE collection. If so, this will be a file that must have its oxygens and nutrients converted from volume to mass units. Something that will be done later.)

1996a

P08_1996_JUN_bot_clean_merged_edited_hy1.csv
P08_1996_JUN_bot_clean_merged_edited.joa

1996b

P08_1996_JUL_someOCT_bot_clean_edited_hy1.csv
P08_1996_JUL_someOCT_bot_clean_edited.joa

WOA

P09/PR02

P09_1994_bot_clean.joa
P09_1994_bot_clean2_hy1.csv

P09_2016_bot_clean.joa

P09_2016_bot_clean2_hy1.csv

P09_2019_bot_clean_edited_hy1.csv

P09_2019_bot_clean_edited.joa

P09_PR02_1990_bot_clean_edited_hy1.csv

P09_PR02_1990_bot_clean_edited.joa

P09_PR02_1991_01_JAN_bot_clean.joa

P09_PR02_1991_01_JAN_bot_clean2_hy1.csv

P09_PR02_1991_06_JUN_bot_clean.joa

P09_PR02_1991_06_JUN_bot_clean2_hy1.csv

P09_PR02_1992_01_JAN_bot_clean.joa

P09_PR02_1992_01_JAN_bot_clean2_hy1.csv

P09_PR02_1992_07_JUL_bot_clean.joa

P09_PR02_1992_07_JUL_bot_clean2_hy1.csv

P09_PR02_1993_01_JAN_bot_clean.joa

P09_PR02_1993_01_JAN_bot_clean2_hy1.csv

P09_PR02_1993_07_JUL_bot_clean.joa

P09_PR02_1993_07_JUL_bot_clean2_hy1.csv

P09_PR02_1994_bot_clean.joa

P09_PR02_1994_bot_clean2_hy1.csv

P09_PR02_1999_bot_clean.joa

P09_PR02_1999_bot_clean2_hy1.csv

P09_PR02_2009_01_JAN_bot_clean.joa

P09_PR02_2009_01_JAN_bot_clean2_hy1.csv

P09_PR02_2009_04_APR_bot_clean.joa

P09_PR02_2009_04_APR_bot_clean2_hy1.csv

P09_PR02_2011_bot_clean.joa

P09_PR02_2011_bot_clean2_hy1.csv

WOA

P10

1993

P10_1993_bot_clean.joa

P10_1993_bot_clean2_hy1.csv

2005

P10_2005_bot_clean_edited_hy1.csv

P10_2005_bot_clean_edited.joa

2011

P10_2011_01_JAN_bot_clean_edited_hy1.csv

P10_2011_01_JAN_bot_clean_edited.joa

2011_2012

P10_2011_2012_bot_clean_edited_hy1.csv

P10_2011_2012_bot_clean_edited.joa

2014

P10_2014_06_JUN_bot_clean.joa

P10_2014_06_JUN_bot_clean2_hy1.csv

WOA

P11

1993

P11_1993_bot_clean_hy1.csv

P11_1993_bot_clean.joa

P12S/SR03

Data users please note: The P12S/SR03 data can be found in the SR03 area of the Southern Ocean "best" CTD/hydrographic data collection.

P13

1991_1993

P13_1991_1993_bot_clean_hy1.csv

P13_1991_1993_bot_clean.joa

1992

P13_1992_bot_clean.joa

P13_1992_bot_clean2_hy1.csv

2009

P13_2009_bot_clean.joa

P13_2009_bot_clean2_hy1.csv

2009

P13N_2009_06_JUN_bot_clean.joa

P13N_2009_06_JUN_bot_clean2_hy1.csv

2010

P13_2010_bot_clean_edited_hy1.csv

P13_2010_bot_clean_edited.joa

2011

P13_2011_bot_clean_edited.joa

P13_2011_bot_clean_edited.joa.jos

P14

1996_1993_1992

P14_1996_1993_1992_bot_clean_hy1.csv

P14_1996_1993_1992_bot_clean.joa

2007_2012

P14_2007_2012_bot_clean_hy1.csv

P14_2007_2012_bot_clean.joa

2007

P14C_2007_bot_clean_hy1.csv

P14C_2007_bot_clean.joa

2012

P14N_2012_bot_clean_hy1.csv

P14N_2012_bot_clean.joa

P14S

~~1996~~

~~2012~~

P15N/C/S

1970

JHS to inspect pre-WOCE files for a 1970 cruise along the P15 longitude (175°W).

~~1990~~

1994

P15_1994_bot_clean_merged_hy1.csv

P15_1994_bot_clean_merged.joa

1996

P15S_1996_bot_clean3_hy1.csv

P15S_1996_bot_clean3.joa

2001

P15S_2001_bot_clean.joa

P15S_2001_bot_clean2_hy1.csv

2009

P15S_2009_bot_clean.joa

P15S_2009_bot_clean2_hy1.csv

2011

(P15S_ANT_2011 will be extracted from the S04P_2011 complete bottle data file.)

2016

P15S_2016_bot_clean3.joa

P15S_2016_bot_clean3_hy1.csv

2018

(P15S_ANT_2018 will be extracted from the S04P_2018 complete bottle data file.)

P16

~~1980~~

1984

P16N_1984_bot_clean3.joa

P16N_1984_bot_clean3_hy1.csv

1991_1992

P16_1991_1992_bot_clean_edited.joa

P16_1991_1992_bot_clean_edited_hy1.csv

P16_1991_1992_ctd_clean.joa

~~1997~~

2005-2006

P16_2005_2006_bot_clean.joa

P16_2005_2006_bot_clean2_hy1.csv

P16_2005_2006_ct1.zip

P16_2005_2006_ctd_clean.joa

~~2006~~

~~2008~~

2014_2015

P16_2014_2015_bot_clean_sorted.joa

P16_2014_2015_bot_clean2_sorted_hy1.csv

~~2015-4~~

~~2015-5~~

2018

P16C_P16N_2018_bot_clean.joa

P16C_P16N_2018_bot_clean_hy1.csv

WOA

P16_WOA05_in_mass_units_hy1.csv

P16_WOA05_in_mass_units.joa

P16S_ANT

2011
P16S_ANT_2011_76Sto67S_bot_clean_hy1.joa
P16S_ANT_2011_76Sto67S_bot_clean2_hy1.csv

2018
P16S_ANT_2018_75Sto67S_bot_clean.joa
P16S_ANT_2018_75Sto67S_bot_clean_hy1.csv

~~1991~~

~~2005~~

~~2014~~

P16_complete

Note to data users: A P16S_ANT file can be added to a P16 file to create a complete Antarctica to Kodiak P16 section along 150°W. [If using JOA, open a P16S_ANT file first, then use JOA's "Add Data..." command (under the JOA "File" menu) to open the main P16 file), which will concatenate with the P16S_ANT file.] In P16_complete 2011_2014_2015 we combined P16S_ANT_2011_76Sto67S_bot_clean_hy1.joa with P16_2014_2015_bot_clean_sorted.joa.

2011_2014_2015
P16_complete_2011_2014_2015_bot_clean.joa
P16_complete_2011_2014_2015_bot_clean_hy1.csv

P17

1991_1992_1993
P17_1992_1991_1993_sorted_bot_clean_hy1.csv
P17_1992_1991_1993_sorted_bot_clean.joa

2001
P17N_2001_bot_clean_hy1.csv
P17N_2001_bot_clean.joa

~~2017~~

P17NE

1993
P17NE_GulfAlaska_1993_clean_bottle.joa
P17NE_GulfAlaska_1993_clean_bottle_hy1.csv

P17E_P19C_53S

1992_1993

P17E_1992_P19C_1993_53S_bottle_clean.joa
P17E_1992_P19C_1993_53S_bottle_clean_hy1.csv

P18

1994
P18_1994_bot_clean.joa
P18_1994_bot_clean_hy1.csv

2007
P18_2007_bot_clean2.joa
P18_2007_bot_clean2_hy1.csv

2016
P18_2016_bot_clean_sorted.joa
P18_2016_bot_clean_sorted_hy1.csv
P18_2016_CTD_clean_sorted.joa

P19

1993
P19_1993_bottle_clean_sorted.joa
P19_1993_bottle_clean_sorted_hy1.csv

~~1995~~

P21

1994
P21_1994_bot_clean3.joa
P21_1994_bot_clean3_hy1.csv

2009
P21_2009_all_bot_clean2.joa
P21_2009_all_bot_clean2_hy1.csv

2013
P21E_2013_Geotraces_bottle_ODF_CFC_clean_hy1.csv
P21E_2013_Geotraces_bottle_ODF_CFC_clean.joa

P31

1994
P31_1994_bot_clean.joa
P31_1994_bot_clean2_hy1.csv

~~ALIZE~~

Line P

The "Line P" section in the Northeast Pacific extends from the site of the former Weather Station P (Papa) at 50°N, 145°W, heading roughly east to the southern tip of Vancouver island. In more recent years, the section has been repeated approximately February, May, and August each year. In this data collection are sorted sections of CTD data made from the deepest CTD cast at each Line P location, west to east, for each Line P cruise in the CCHDO files for which the data were available and successfully imported to Java OceanAtlas. No data values were changed from those in the original CCHDO files. For each cruise, in addition to the JOA binary ".joa" file there was an original ascii _ct1.csv file, but those contain other casts and are not yet sorted geographically. (We will eventually get cleaned ascii CTD files on line for the Line P cruises.) Data from some cruises are listed as missing until their data import issues are resolved. The CCHDO shows Line P (or perhaps Station P) cruises extending back to 1970 and earlier, but as yet has no data from the earlier cruises.

Line_P_2007_02_FEB (data not yet cleaned)
Line_P_2007_05_MAY_CTD_clean.joa
Line_P_2007_08_AUG_CTD_clean.joa
Line_P_2008_01_JAN_CTD_clean.joa
Line_P_2008_05_MAY_CTD_clean.joa (format problem still being addressed)
Line_P_2008_08_AUG_CTD_clean.joa (format problem still being addressed)
Line_P_2009_01_JAN_CTD_clean.joa (format problem still being addressed)
Line_P_2009_06_JUN_CTD_clean.joa
Line_P_2009_08_AUG_CTD_clean.joa
Line_P_2010_02_FEB_CTD_clean.joa
Line_P_2010_06_JUN_CTD_clean.joa (format problem still being addressed)
Line_P_2010_08_AUG_CTD_clean.joa
Line_P_2011_02_FEB_CTD_clean.joa (format problem still being addressed)
Line_P_2011_06_JUN_CTD_clean.joa
Line_P_2011_08_AUG (data not yet cleaned)
Line_P_2012_02_FEB_CTD_clean.joa
Line_P_2012_05_MAY_CTD_clean.joa (format problem still being addressed)
Line_P_2012_08_AUG_CTD_clean.joa
Line_P_2013_02_FEB_CTD_clean.joa (format problem still being addressed)
Line_P_2013_06_JUN_CTD_clean.joa
Line_P_2013_08_AUG_CTD_clean.joa (format problem still being addressed)
Line_P_2014_02_FEB_CTD_clean.joa
Line_P_2014_06_JUN_CTD_clean.joa (format problem still being addressed)
Line_P_2014_08_AUG_CTD_clean.joa
Line_P_2015_02_FEB_CTD_clean.joa (format problem still being addressed)
Line_P_2015_06_JUN_CTD_clean.joa
Line_P_2015_08_AUG_CTD_clean.joa (format problem still being addressed)
Line_P_2016_02_FEB_CTD_clean.joa (format problem still being addressed)
Line_P_2016_06_JUN_CTD_clean.joa
Line_P_2016_08_AUG_CTD_clean.joa
Line_P_2017_02_FEB_CTD_clean.joa (format problem still being addressed)
Line_P_2017_06_JUN_CTD_clean.joa
Line_P_2017_08_AUG_CTD_clean.joa (format problem still being addressed)
Line_P_2018_02_FEB_CTD_clean.joa
Line_P_2018_06_JUN_CTD_clean.joa
Line_P_2018_09_SEP_CTD_clean.joa
Line_P_2019_02_FEB_CTD_clean.joa (format problem still being addressed)

Line_P_2019_06_JUN_CTD_clean.joa
Line_P_2019_08_AUG_CTD_clean.joa
Line_P_2020_02_FEB_CTD_clean.joa

HOT - Hawaii Ocean Timeseries

The Hawaii Ocean Timeseries is a long-term program initiated in 1988 focusing on near-monthly sampling of various types at a single location northwest of Oahu. We provide single bottle and CTD profiles from each HOT cruise for which usable data are available beginning October, 1988. (Some months were missed by the HOT program and data from a few cruises are still being reconstructed from original HOT data.) No single HOT bottle cast covered the full water column. Thus data from the two (or sometimes three) HOT bottle casts from each cruise which together best represent the water column were combined here into a single profile for each HOT cruise. No data values were changed from those in the original CCHDO files, but no uncertain (WOCE Code 3) or bad (WOCE Code 4) data were retained. The CTD data here are those from the deepest of the casts used to make the cleaned bottle data profile. This document lists only the files where we have combined the cleaned data from all the monthly cruises into single multi-year timeseries files for the bottle and CTD data. [The CTD and cleaned bottle data profiles for individual monthly cruises are, however, also available from Jim Swift. When we determine an efficient means of presenting the monthly cruise data for download, we will update the site.] When plotting these data, one suggestion is to make vertical sections with time as the X-axis, or property-property plots where the data dots are colored by time or season (suggesting JFM, AMJ, JAS, and OND to match NOAA/NCEI/NODC conventions).

HOT_timeseries_1988_to_2019_bot_clean_27SEP2021.joa
HOT_timeseries_1988_to_2019_bot_clean_27SEP2021_hy1.csv
HOT_1988to2019_CTD_timeseries.joa
HOT_1988to2019_CTD_timeseries_ct1.zip

FILE NAMES FOR MATCHED CRUISE SEGMENTS

These matched segments are data from different years which cover, as best as feasible, the same section or portion of a section. The sub-sections were designed to lie within one geographic domain, such as an ocean basin. (Complete, ocean-spanning matched sections, i.e. A02_1997 versus A02_2001, can be gleaned from the master cleaned cruise files elsewhere on the site.) The matched segments from the same line number and with the same name convention are the closest feasible matches to each other. For example, "A02_1994_bot_clean_east.joa" covers the same stretch of the northeastern Atlantic Ocean as does "A02_1997_bot_clean_east.joa", "A02_2001_bot_clean_sorted_east.joa", and "A02_2017_bot_clean_east.joa", in order to facilitate interannual comparisons in that part of the ocean, east of the mid-ocean ridge.

We also note that sometimes more than one section track crosses a given ocean subregion. These might be zonal and/or meridional line segments. One might, for example, usefully compare a plot of collective data from time period A from a given ocean subregion with a plot of collective data from time period B from the same subregion. Our map ("Pacific Ocean matched line segment map.pdf") shows which sub-sections from different WOCE line numbers lie within the same geographic domain. For example, part of the meridional A16 transect crosses the same basin as part of the zonal A10 transect (the Brazil Basin in this

case) and so all the A16 "southcentral" and A10 "west" line segments are part of a Brazil Basin group, which we have termed the "West Central South Atlantic".

Note also that for any cruise segment available only in JOA binary format (suffix ".joa"), one can use the Java OceanAtlas "Export WOCE Exchange file" command (under the JOA "File" menu) to export and save an ascii, comma-delimited WOCE Exchange file (suffix "_hy1.csv"), which can then be used in any application which can read ascii, comma-delimited data (such as Ocean Data View, for example).

P01

P01_1985_bottle_clean_west.joa
P01_1985_bottle_clean_centralwestof165W.joa
P01_1985_bottle_clean_eastof165W.joa

P01_2007_bot_clean_west.joa
P01_2007_bot_clean_centralwestof165W.joa
P01_2007_bot_clean_eastof165W.joa

P01_2014_bot_clean_centralwestof165W.joa
P01_2014_bot_clean_eastof165W.joa
P01_2014_bot_clean_west.joa

P02

P02_1993_1994_botclean_T_S_O2_165Wto132W.joa
P02_1993_1994_botclean_T_S_O2_179Eto132W.joa
P02_1993_1994_botclean_T_S_O2_eastof132W.joa
P02_1993_1994_botclean_T_S_O2_farwest.joa
P02_1993_1994_botclean_T_S_O2_west.joa

P02_2004_bot_clean_sorted_165Wto132W.joa
P02_2004_bot_clean_sorted_179Eto132W.joa
P02_2004_bot_clean_sorted_eastof132W.joa
P02_2004_bot_clean_sorted_farwest.joa
P02_2004_bot_clean_sorted_west.joa

P02_2013_bot_clean_sorted_165Wto132W.joa
P02_2013_bot_clean_sorted_179Eto132W.joa
P02_2013_bot_clean_sorted_eastof132W.joa
P02_2013_bot_clean_sorted_farwest.joa
P02_2013_bot_clean_sorted_west.joa

P03

P03_1985_all_bot_clean2_eastcentral.joa
P03_1985_all_bot_clean2_fareast.joa
P03_1985_all_bot_clean2_farwest.joa
P03_1985_all_bot_clean2_westcentral.joa

P03_2005_2006_all_bot_clean2_eastcentral.joa
P03_2005_2006_all_bot_clean2_fareast.joa
P03_2005_2006_all_bot_clean2_farwest.joa
P03_2005_2006_all_bot_clean2_westcentral.joa

P06

P06_1992_bot_clean_central.joa
P06_1992_bot_clean_east.joa
P06_1992_bot_clean_west.joa

P06_2003_bot_clean_central.joa
P06_2003_bot_clean_east.joa
P06_2003_bot_clean_west.joa

P06_2009_2010_bot_clean_central.joa
P06_2009_2010_bot_clean_east.joa
P06_2009_2010_bot_clean_west.joa

P06_2017_bot_clean_central.joa
P06_2017_bot_clean_east.joa
P06_2017_bot_clean_west.joa

P10

P10_1993_bot_clean_central.joa
P10_1993_bot_clean_northto30N.joa
P10_1993_bot_clean_south.joa

P10_2011_2012_bot_clean2_central.joa
P10_2011_2012_bot_clean2_south.joa
P10_2011_2012_bot_clean2_northto30N.joa

P14 (need to add P14 ANT segments; also these may need to be remade from latest cleaned files)

P14_1992_1993_bot_clean_Bering.joa
P14_1992_1993_bot_clean_north.joa
P14_1992_1993_bot_clean_central_21Nto30N.joa
P14_1992_1993_bot_clean_central_13Sto21N.joa
P14_1992_1993_bot_clean_south.joa

P14_2007_key_bot_clean_Bering.joa
P14_2007_key_bot_clean_north.joa
P14_2007_key_bot_clean_central_21Nto30N.joa
P14_2007_key_bot_clean_central_13Sto21N.joa
P14_2007_key_bot_clean_south.joa

P15

P15S_1996_bot_clean3_central.joa
P15S_1996_bot_clean3_north.joa
P15S_1996_bot_clean3_south_v2.joa
P15S_1996_bot_clean3_farsouth.joa

P15S_2016_bot_clean3_north.joa
P15S_2016_bot_clean3_central.joa
P15S_2016_bot_clean3_south_v2.joa
P15S_2016_bot_clean3_farsouth.joa

P16

P16_1991_1992_bot_clean_northof37N.joa
P16_1991_1992_bot_clean_19Nto37N.joa
P16_1991_1992_bot_clean_17Sto19N.joa
P16_1991_1992_bot_clean_49Sto17S.joa
P16_1991_1992_bot_clean_59Sto49S.joa

P16_2005_2006_bot_clean_northof37N.joa
P16_2005_2006_bot_clean_19Nto37N.joa
P16_2005_2006_bot_clean_17Sto19N.joa
P16_2005_2006_bot_clean_49Sto17S.joa
P16_2005_2006_bot_clean_59Sto49S.joa
P16_2005_2006_bot_clean_southof59S.joa

P16_2014_2015_bot_clean_northof37N.joa
P16_2014_2015_bot_clean_19Nto37N.joa
P16_2014_2015_bot_clean_17Sto19N.joa
P16_2014_2015_bot_clean_49Sto17S.joa
P16_2014_2015_bot_clean_59Sto49S.joa
P16_2014_2015_bot_clean_southof59S.joa

P18

P18_1994_bot_clean_north.joa
P18_1994_bot_clean_central.joa
P18_1994_bot_clean_southfrom67S.joa

P18_2007_bot_clean_north.joa
P18_2007_bot_clean_central.joa
P18_2007_bot_clean_southfrom67S.joa

P18_2016_bot_clean_north.joa
P18_2016_bot_clean_central.joa
P18_2016_bot_clean_southfrom67S.joa

P21

P21_1994_bot_clean3_west.joa

P21_1994_bot_clean3_westcentral.joa
P21_1994_bot_clean3_eastcentral.joa
P21_1994_bot_clean3_eastto79W_v2.joa

P21_2009_all_bot_clean2_west.joa
P21_2009_all_bot_clean2_westcentral.joa
P21_2009_all_bot_clean2_eastcentral.joa
P21_2009_all_bot_clean2_eastto79W_v2.joa