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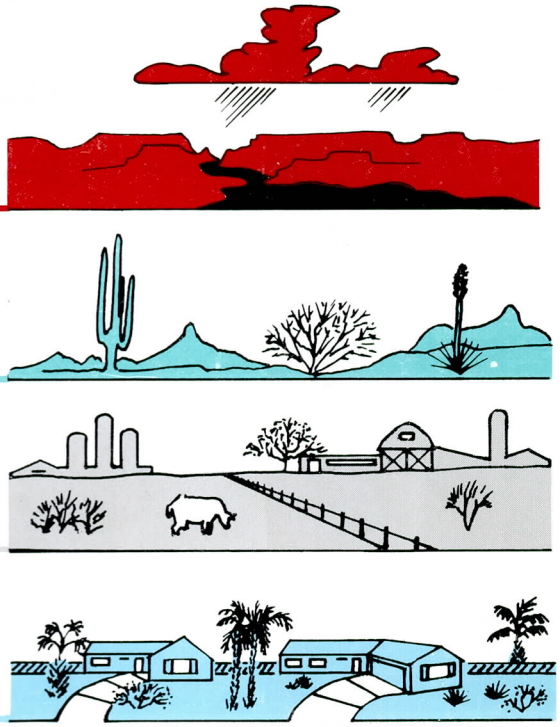

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Stormwater Quality Report
City of Mesa, Arizona

First Quarter

November 1, 1999

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Stormwater Quality Report

First Quarter, Sampling Year 2000

July 1, 1999 through September 30, 1999

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For

City of Mesa, Arizona

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Stormwater Quality Report
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Introduction

The Flood Control District of Maricopa County operates and maintains five land based stormwater monitoring stations for the City of Mesa for compliance with their National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge permit. This report contains data from the summer 1999 seasonal rainfall, which includes the period from July 1, 1999 through September 30, 1999.

A representative event is defined in the following manner.

MESA	RAINFALL	DURATION
SUMMER	**0.24 – 0.72 INCH**	**2.4 – 7.2 HOURS**
WINTER	**0.22 – 0.66 INCH**	**5.9 – 17.7 HOURS**

All storms are to be preceded by 72 hours with rainfall less than 0.10 inches. Summer months are July through September and winter months are October through March. Rainfall in April, May, and June is not considered representative.

Storm Summaries

This is a summary of representative storm events in the first quarter of the 2000 sample year, which is July 1 through September 30, 1999. Of the many storm events measured during the summer, four storms generated enough rainfall and runoff to be representative, and two of these storms were sampled. Any troubleshooting of the equipment is detailed in the Maintenance Summaries. Following are detailed descriptions of the representative events.

Storm of July 14, 1999

This storm event resulted in rainfall over the entire Valley. Activity began at approximately 3:30 p.m. as a storm moved from the southwest and collided with another storm approaching from the northwest, drenching the valley with rain showers. Rainfall totals in Mesa ranged from 0.12 inches to 0.79 inches, with the highest rainfall totals in west Mesa. The following table shows rainfall totals for each sampler site.

All equipment appeared to function during the storm of July 14. Rainfall duration was sufficient to provide representative samples at all sites except for Sixth and Horne. Both grab and composite samples were collected and analyzed for the Falcon Field and Horne and Grandview sites.

Explanations of why samples from the other four sites were not collected and/or analyzed are provided in the table on Page 5 of this report.

Storm of July 14, 1999

SITE	RAINFALL (inches)	SAMPLES COLLECTED
SIXTH AND HORNE	0.68	NO
BROADWAY AND LINDSAY	0.26	NO
FALCON FIELD	0.45	NO
HORNE AND GRANDVIEW	0.64	YES
DOBSON	0.46	NO

Storm of August 27, 1999

The last remaining remnants of Hurricane Brett moved through the Valley from the east-southeast, added moisture to an already active system and generated strong storms. This storm event resulted in rainfall over much of the Mesa area. Rainfall totals ranged from 0.04 inches to 0.28 inches, with the highest rainfall totals in west Mesa. The following table shows rainfall totals for each sampler site.

Explanations of why samples from the Sixth and Horne and Dobson sites were not collected and/or analyzed are provided in the table on Page 5 of this report.

Storm of August 27, 1999

SITE	RAINFALL (inches)	SAMPLES COLLECTED
SIXTH AND HORNE	0.26	NO
BROADWAY AND LINDSAY	0.10	NO
FALCON FIELD	0.12	NO
HORNE AND GRANDVIEW	0.20	NO
DOBSON	0.28	NO

Storm of September 19, 1999

The most severe storm of the monsoon season struck the East Valley in the early afternoon. This storm event generated rainfall over much of the Mesa area. Rainfall totals ranged from 0.04 inches to 0.51 inches, with the highest rainfall totals in south Mesa. The following table shows rainfall totals for each sampler site.

Explanations of why samples from the Broadway and Lindsay and Dobson sites were not collected and/or analyzed are provided in the table on Page 5 of this report.

Storm of September 19, 1999

SITE	RAINFALL (inches)	SAMPLES COLLECTED
SIXTH AND HORNE	0.18	NO
BROADWAY AND LINDSAY	0.43	NO
FALCON FIELD	0.12	NO
HORNE AND GRANDVIEW	0.18	NO
DOBSON	0.37	NO

Storm of September 23, 1999

This storm event produced rainfall over much of the Mesa area. Rainfall totals ranged from 0.04 inches to 0.85 inches, with the highest rainfall totals in north Mesa. The following table shows rainfall totals for each sampler site.

Mesa 1 equipment functioned well during the September 23 storm. A complete composite sample (eight bottles) was collected and submitted to Bolin Labs for analysis. A grab sample was not collected due to heavy traffic and inability to access the manhole for sample collection. The initial storm consisted of a sustained rainfall of 0.53 inches, which fell within the first 24 minutes of the storm. After a gap (no additional rain) of 193 minutes, 0.01 inches of rain was registered on the stormwater raingage. If these rain amounts are totaled, then the total rainfall amount is 0.54 inches and the duration is 217 minutes.

Explanations of why samples from the Broadway and Lindsay, Horne and Grandview, and Dobson sites were not collected and/or analyzed are provided in the table on Page 5 of this report.

Storm of September 23, 1999

SITE	RAINFALL (inches)	SAMPLES COLLECTED
SIXTH AND HORNE	0.54	YES
BROADWAY AND LINDSAY	0.24	NO
FALCON FIELD	0.08	NO
HORNE AND GRANDVIEW	0.85	NO
DOBSON	0.76	NO

Storm Events Not Sampled

There were several other rain events that occurred during the summer. The rainfall section provides rainfall totals for each site. Some rainfall totals appear to have been representative, but were not sampled. Below is a table that provides explanation for their not being sampled. All events with rainfall less than 0.24 inches are not included because, by definition, they are not representative.

Events with rainfall > 0.24 inches but not sampled

SITE	DATE	RAIN	REASON
SIXTH	07/14/99	0.68	Duration too short.
LINDSAY	07/14/99	0.26	Duration too short.
FALCON	07/14/99	0.45	Preceded by 0.15 inches of rainfall with a 245-minute gap.
DOBSON	07/14/99	0.46	When combined w/ rain of 7/15, rainfall total of 0.81 in. appeared to exceed 0.72 in. representative criteria.
DOBSON	08/05/99	0.25	Duration too short.
FALCON	08/10/99	0.67	Duration too short.
SIXTH	08/19/99	0.44	Duration too short.
FALCON	08/19/99	0.89	Rainfall > 0.72 inches.
GRANDVIEW	08/19/99	0.42	Duration too short.
SIXTH	08/27/99	0.26	Equipment malfunctioned; representative event w/ duration of 155 minutes.
DOBSON	08/27/99	0.28	Equipment malfunctioned; representative event w/ duration of 225 minutes.
SIXTH	08/31/99	0.24	Duration too short.
LINDSAY	08/31/99	0.69	Duration too short.
FALCON	08/31/99	0.82	Rainfall > 0.72 inches.
GRANDVIEW	08/31/99	0.29	Duration too short.
DOBSON	08/31/99	0.26	Duration too short.
SIXTH	09/14/99	0.34	Duration too short.
LINDSAY	09/14/99	0.40	Duration too short.
GRANDVIEW	09/14/99	0.24	Duration too short.
DOBSON	09/14/99	0.31	Duration too short.
LINDSAY	09/19/99	0.43	Equipment malfunctioned; representative event w/ duration of 187 minutes.
DOBSON	09/19/99	0.37	Equipment malfunctioned; representative event w/ duration of 168 minutes.
LINDSAY	09/23/99	0.24	Duration too short.
GRANDVIEW	09/23/99	0.85	Rainfall > 0.72 inches.
DOBSON	09/23/99	0.76	Rainfall > 0.72 inches; duration too short.

Maintenance Summary

This section details maintenance activities and problems during the first quarter.

Sixth and Horne – Mesa 1

The SIGMA 900 sampling equipment was calibrated on June 29, 1999. During the storm events of July 6, August 10, August 19, August 27, and August 31 samples were collected but the sample bottles overflowed. Troubleshooting at the District resulted in an inability to calibrate the sample volume. The cause of the problem has not been identified, but may be related to a faulty sensor. The SIGMA 900 sampler (Serial No. EA0597MPCO10680) was replaced with a SIGMA 800 sampler (Serial No. H019511338) which was calibrated on September 2, 1999. During all subsequent storm events, the 800 sampler appeared to operate properly. The moisture filter was changed on September 22, 1999. The 900 sampler will be shipped to American SIGMA for repair.

Broadway and Lindsay – Mesa 2

The SIGMA 800 sampling equipment was calibrated on June 23, 1999. The sampler appeared to operate properly during all summer storm events until a malfunction occurred during the September 19 storm event. The water level gauge failed to register flow, causing a representative sample to be missed. The SIGMA 800 sampler (Serial No. H019511337) was replaced with another SIGMA 800 sampler (Serial No. H07925065) which was calibrated on September 22, 1999. The moisture filter was also changed at this time. During the September 23 storm event, the pressure transducer operated properly but the computer failed to register rainfall. The raingage and tipping bucket were checked on September 23 and were determined to be functioning. The sampler operated and collected samples, but the storm duration was too short to yield a representative sample.

Falcon Field – Mesa 3

The SIGMA 800 sampling equipment (Serial No. E07925067) was calibrated on June 23, 1999. The sampler appeared to operate properly during all summer storm events. The moisture filter was changed on September 22, 1999.

Horne and Grandview – Mesa 4

The SIGMA 900 sampling equipment was calibrated on June 29, 1999. During the storm events of July 7, August 27, and August 31 samples were collected but the distributor arm missed the sample bottles. The cause of this problem has not been identified. The sampler appeared to operate properly during other summer storm events. The SIGMA 900 sampler (Serial No. EA0597MPCO10679) was replaced with a SIGMA 800 sampler (Serial No. E07925069) which was calibrated on September 2, 1999. During all subsequent storm events, the 800 sampler appeared to operate properly. The moisture filter was changed on September 22, 1999. American SIGMA technical staff recommended replacement of the distributor arm and distributor tubing on the 900 sampler. FCD staff will reinstall the 900 sampler only after the 800 sampler has collected one sample from a representative winter storm at this site.

Broadway and Dobson – Mesa 5

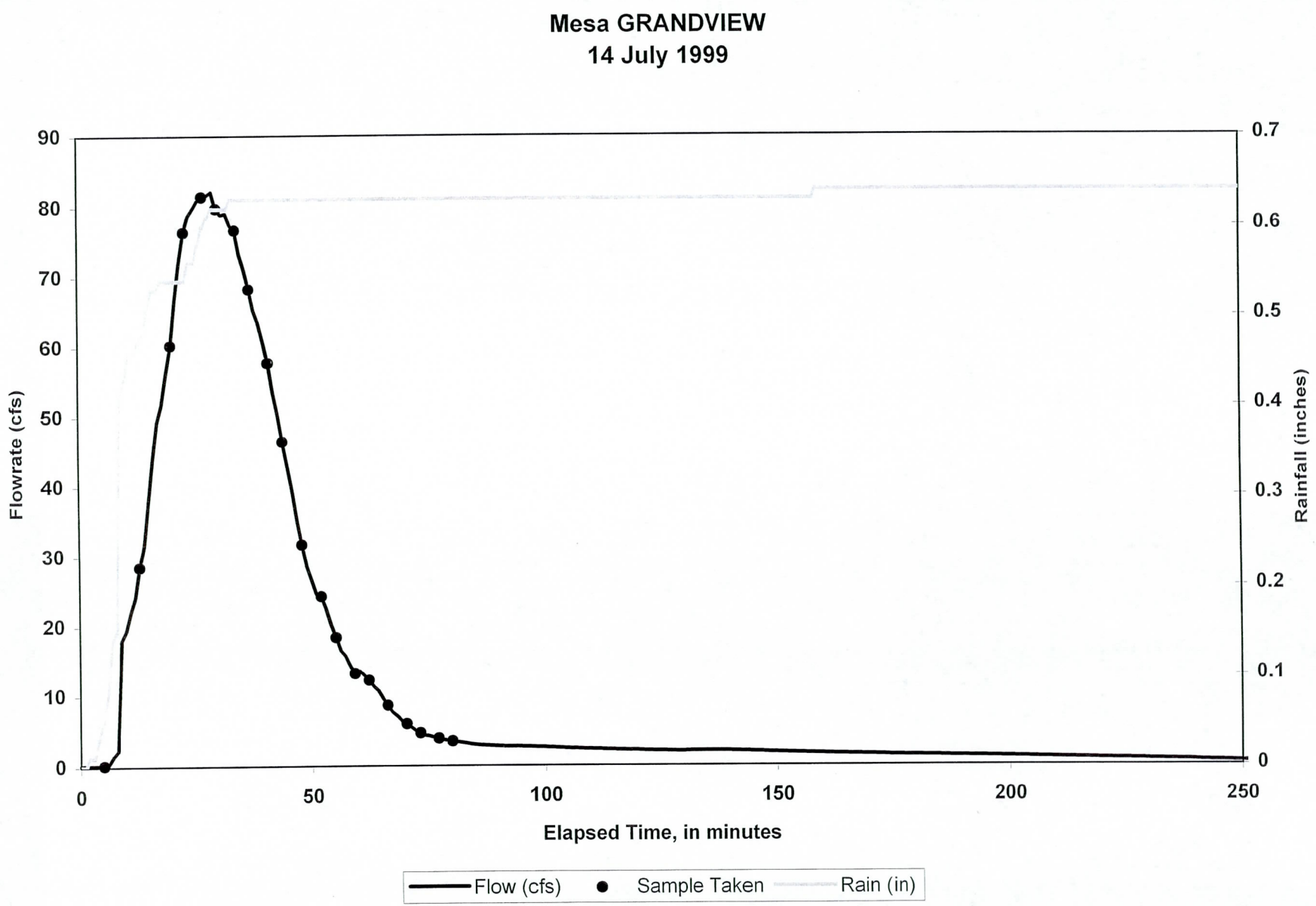
The SIGMA 800 sampling equipment (Serial No. H07925066) was calibrated on June 23, 1999. During the storm event of August 27, equipment malfunctioned, causing a representative sample to be missed. An inspection conducted after the storm event revealed the pump tubing had split. The pump tubing was replaced on August 30, and the tubing purged. The sampler appeared to be functioning well. However, during the storm event on August 31, the sampler did not pump samples, apparently due to a blockage of the intake tubing. Corrective action was taken on September 2 to clear the blockage, which consisted of plastic bags and rocks blocking the intake tubing. Subsequent to this event, the District designed custom stainless steel screens for the intake tubing strainer. These screens were designed to prevent future blockage of the intake tubing. During the storm event of September 11, the sampler operated properly. During the storm event of September 19, the sampler did not collect samples, causing a representative sample to be missed. The cause was later identified as the sampling program not being restarted. During the storm event of September 23, a keypad failure occurred. The sampler operated and collected samples, but the rainfall amount was greater than the maximum rainfall for a representative event. The keypad failure was attributed to a blown fuse, which was replaced on September 27, 1999.

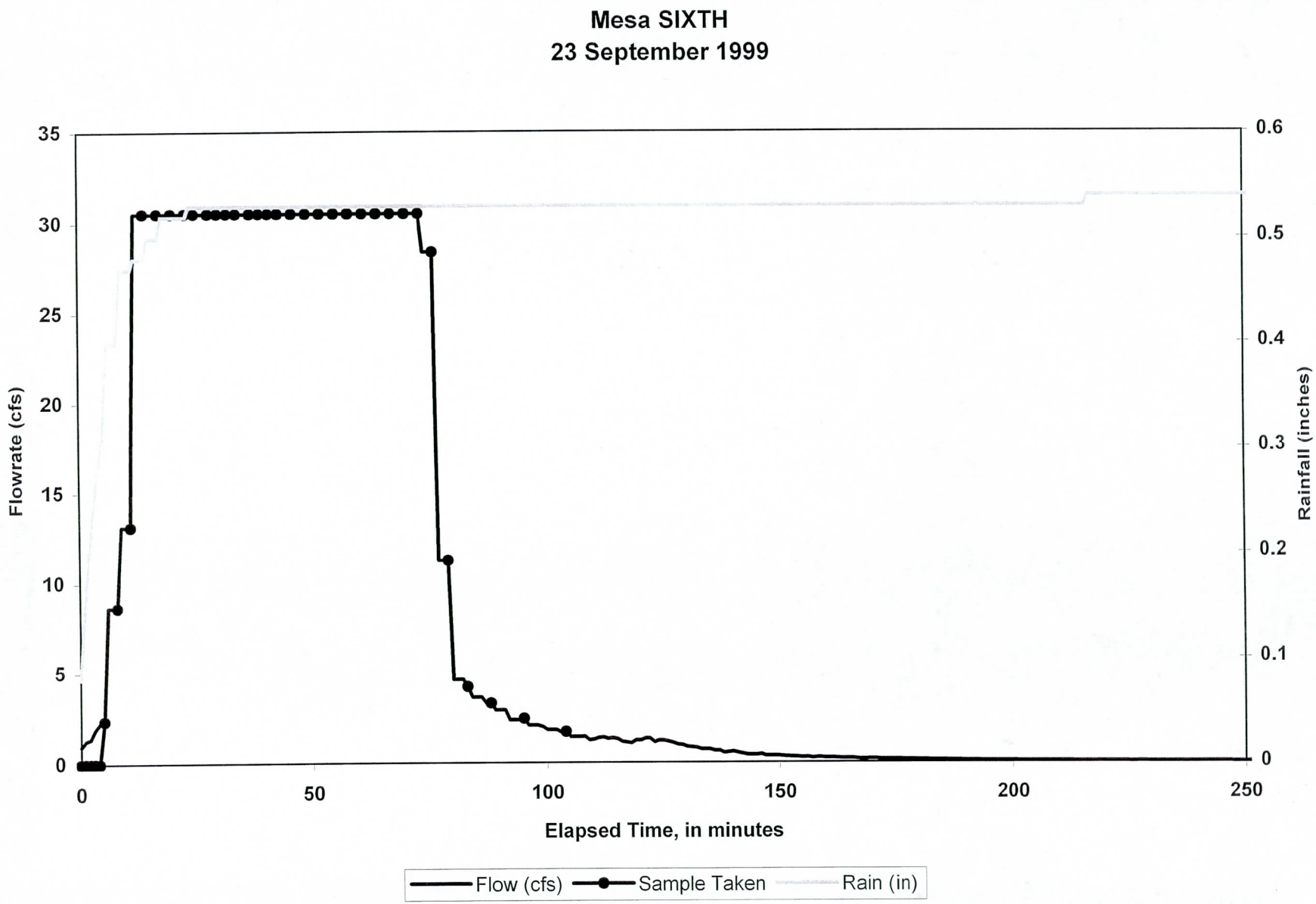
Data from Summer 1999

The remainder of this report contains data. The following data are included:

- Storm Hydrographs
- Rainfall Data from each monitoring site
- Printed tables of data from the summer. Included are data required by Mesa's NPDES permit.
- Validation Tables. These data show a validation of the data on an individual basis for each storm event. One table is included for each site for each sampled event.
- Hard copies of data.
- Copies of maintenance and storm sheets.

Storm Hydrographs


Mesa GRANDVIEW
14 July 1999
Flowrate (cfs)
Rainfall (inches)
Elapsed Time, in minutes
0
10
20
30
40
50
60
70
80
90
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0
50
100
150
200
250
Flow (cfs)
Sample Taken
Rain (in)


Mesa SIXTH
23 September 1999
Flowrate (cfs)
Rainfall (inches)
Elapsed Time, in minutes
0
5
10
15
20
25
30
35
0
0.1
0.2
0.3
0.4
0.5
0.6
0
50
100
150
200
250
Flow (cfs)
Sample Taken
Rain (in)

Rainfall Data

Gauge Rainfall

Gauge Number	Sixth (Mesa 1)
Location	Horne and Sixth Street

	July 1999	August 1999	September 1999	October 1999	November 1999	December 1999	January 2000	February 2000	March 2000	April 2000	May 2000	June 2000
1												
2												
3												
4												
5												
6	0.18											
7												
8												
9												
10		0.04										
11			0.04									
12												
13												
14	0.68		0.34									
15	0.16											
16												
17												
18												
19		0.27	0.18									
20												
21												
22												
23			0.54									
24												
25												
26												
27		0.26										
28												
29												
30												
31		0.24										
Month Total	1.02	0.81	1.10									

Gauge Rainfall

Gauge Number	Lindsay (Mesa 2)
Location	Broadway and Lindsay

	July 1999	August 1999	September 1999	October 1999	November 1999	December 1999	January 2000	February 2000	March 2000	April 2000	May 2000	June 2000
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11			0.01									
12												
13												
14	0.34		0.40									
15	0.12											
16												
17												
18		0.13										
19		0.09										
20												
21												
22												
23			0.20									
24												
25												
26												
27		0.10										
28												
29												
30												
31		0.69										
Month Total	0.46	1.01	0.61									

Gauge Rainfall

Gauge Number	Falcon Field (Mesa 3)
Location	Falcon Field (sampler gauge and ALERT gauge 4555)

	July 1999	August 1999	September 1999	October 1999	November 1999	December 1999	January 2000	February 2000	March 2000	April 2000	May 2000	June 2000
1												
2		0.67										
3												
4												
5												
6	0.12											
7												
8												
9												
10												
11												
12												
13												
14	0.60		0.23									
15	0.17											
16												
17												
18												
19			0.12									
20												
21												
22												
23		0.89	0.08									
24												
25												
26												
27		0.12										
28												
29												
30												
31		0.82										
Month Total	0.89	2.50	0.43									

Gauge Rainfall

Gauge Number	Grandview (Mesa 4)
Location	Horne and Grandview (sampler gauge and ALERT gauge 4545)

	July 1999	August 1999	September 1999	October 1999	November 1999	December 1999	January 2000	February 2000	March 2000	April 2000	May 2000	June 2000
1												
2												
3												
4												
5												
6	0.14											
7												
8												
9												
10		0.04										
11			0.02									
12												
13												
14	0.64											
15												
16												
17												
18												
19		0.45	0.18									
20												
21												
22												
23			0.85									
24												
25												
26												
27		0.14										
28		0.06										
29												
30												
31		0.29										
Month Total	0.78	0.98	1.05									

Gauge Rainfall

Gauge Number	Dobson (Mesa 5)
Location	Dobson and Broadway (sampler gauge and ALERT gauge 4535)

	July 1999	August 1999	September 1999	October 1999	November 1999	December 1999	January 2000	February 2000	March 2000	April 2000	May 2000	June 2000
1												
2												
3												
4												
5												
6	0.29											
7												
8												
9												
10												
11			0.20									
12												
13												
14	0.46		0.31									
15	0.35											
16												
17												
18												
19		0.04	0.37									
20												
21												
22			0.03									
23			0.74									
24												
25												
26												
27		0.24										
28		0.04										
29												
30												
31		0.26										
Month Total	1.10	0.58	1.65									

Data Tables

Mesa 1 - Horne and Sixth Street		
Date of Sampling	Method	9/23/99
Time		1800
Representative Storm Event		Y
Agency Collecting Sample		FCD
Agency Analyzing Sample		BOLIN
Drainage Area (acres) (DA)		193
Impervious Area (acres) (IA)		121
Land Use - Residential		193
Land Use - Commercial		0
Land Use - Industrial		0
Land Use - Undeveloped		0
Sampling Duration (minutes) (DRN)		104
Storm Duration (minutes)		217
Runoff Sampled (cubic feet) (RUN)		129,400
Total Storm Runoff (cubic feet)		133,100
Instantaneous Discharge (cfs)		30.5
Preceeding Dry Period (days) (ANT)		0
Total Storm Rainfall (inch)		0.54
Rainfall Sampled (inch) (TRN)		0.53
Maximum 5-minute rain intensity (MAX5)		3.12
Sample Temperature (deg. C)	Field	2
Effluent Temperature (deg. C)	Field	NM
pH, Effluent (standard units)	Field	NM
BOD5 (mg/l)	405.1	NA
COD High Level (mg/l)	410.4	65
Fecal Coliform (MPN/100mL)	9222C	NA
Fecal Streptococci (MPN/100mL)	9230C	NA
Total Dissolved Solids (mg/l)	2540C	53
Total Suspended Solids (mg/l)	160.2	202
TKN Nitrogen (mg/l as N)	351.3	1.66
Nitrogen Nitrate Total (mg/l as N)	CALC	0.7
Nitrogen Ammonia Total (mg/l as N)	350.2	0.95
Nitrogen Organic Total (mg/l as N)	CALC	0.71
Phosphorous Total (mg/l as P)	365.3	0.48
Phosphorous Dissolved (mg/l as P)	365.3	0.16
Oil and Grease Total Recoverable (mg/l)	413.1	NA
Hardness (mg/l)	2340B	40
Cadmium Total Recoverable (ug/l as Cd)	200.7	<5.0
Cadmium Dissolved (ug/l as Cd)	200.7	<5.0
Chromium Total Recoverable (ug/l as Cr)	200.8	9.3
Chromium Dissolved (ug/l as Cr)	200.8	0.6
Copper, Total Recoverable, (ug/l as Cu)	200.7	17
Copper, Dissolved, (ug/l as Cu)	200.7	<15
Lead, Total Recoverable, (ug/l as Pb)	3113B	7
Lead, Dissolved, (ug/l as Pb)	200.9	<5
Mercury, Total Recoverable, (ug/l as Hg)	245.1	<0.2
Mercury, Dissolved, (ug/l as Hg)	245.1	<0.2
Zinc, Total Recoverable, (ug/l as Zn)	200.7	150
Zinc, Dissolved, (ug/l as Zn)	200.7	<20
P,P' DDE, Total, (ug/l)	608	<1.0
Methylene Chloride, Total, (ug/l)	624	NA
Toluene, Total, (ug/l)	624	NA
Benzo (a) Pyrene, Total, (ug/l)	625	<5.0
Chrysene, Total, (ug/l)	625	<5.0
Fluoranthene, Total, (ug/l)	625	<5.0
Indeno (1,2,3-CD) Pyrene, Total, (ug/l)	625	<5.0
Pyrene, Total, (ug/l)	625	<5.0

Mesa 2 - Broadway and Lindsay		
Date of Sampling	Method	
Time		No Data to Report
Representative Storm Event		No Data to Report
Agency Collecting Sample		No Data to Report
Agency Analyzing Sample		No Data to Report
Drainage Area (acres) (DA)		No Data to Report
Impervious Area (acres) (IA)		No Data to Report
Land Use - Residential		No Data to Report
Land Use - Commercial		No Data to Report
Land Use - Industrial		No Data to Report
Land Use - Undeveloped		No Data to Report
Sampling Duration (minutes) (DRN)		No Data to Report
Storm Duration (minutes)		No Data to Report
Runoff Sampled (cubic feet) (RUN)		No Data to Report
Total Storm Runoff (cubic feet)		No Data to Report
Instantaneous Discharge (cfs)		No Data to Report
Preceeding Dry Period (days) (ANT)		No Data to Report
Total Storm Rainfall (inch)		No Data to Report
Rainfall Sampled (inch) (TRN)		No Data to Report
Maximum 5-minute rain intensity (MAX5)		No Data to Report
Sample Temperature (deg. C)	Field	No Data to Report
Effluent Temperature (deg. C)	Field	No Data to Report
pH, Effluent (standard units)	Field	No Data to Report
BOD5 (mg/l)	405.1	No Data to Report
COD High Level (mg/l)	410.1	No Data to Report
Fecal Coliform (MPN/100mL)	9222C	No Data to Report
Fecal Streptococci (MPN/100mL)	9230C	No Data to Report
Total Dissolved Solids (mg/l)	160.1	No Data to Report
Total Suspeded Solids (mg/l)	160.1	No Data to Report
TKN Nitrogen (mg/l as N)	351.3	No Data to Report
Nitrogen Nitrate Total (mg/l as N)	353.2	No Data to Report
Nitrogen Ammonia Total (mg/l as N)	350.3	No Data to Report
Nitrogen Organic Total (mg/l as N)	351.4	No Data to Report
Phosphorous Total (mg/l as P)	365.2	No Data to Report
Phosphorous Dissolved (mg/l as P)	365.3	No Data to Report
Oil and Grease Total Recoverable (mg/l)	413.1	No Data to Report
Hardness (mg/l)	130.2	No Data to Report
Cadmium Total Recoverable (ug/l as Cd)	213.2	No Data to Report
Cadmium Dissolved (ug/l as Cd)	213.2	No Data to Report
Chromium Total Recoverable (ug/l as Cr)	218.2	No Data to Report
Chromium Dissolved (ug/l as Cr)	218.2	No Data to Report
Copper, Total Recoverable, (ug/l as Cu)	220.2	No Data to Report
Copper, Dissolved, (ug/l as Cu)	220.2	No Data to Report
Lead, Total Recoverable, (ug/l as Pb)	239.2	No Data to Report
Lead, Dissolved, (ug/l as Pb)	239.2	No Data to Report
Mercury, Total Recoverable, (ug/l as Hg)	245.1	No Data to Report
Mercury, Dissolved, (ug/l as Hg)	245.1	No Data to Report
Zinc, Total Recoverable, (ug/l as Zn)	289.2	No Data to Report
Zinc, Dissolved, (ug/l as Zn)	289.2	No Data to Report
P,P' DDE, Total, (ug/l)	608	No Data to Report
Methylene Chloride, Total, (ug/l)	624	No Data to Report
Toluene, Total, (ug/l)	624	No Data to Report
Benzo (a) Pyrene, Total, (ug/l)	625	No Data to Report
Chrysene, Total, (ug/l)	625	No Data to Report
Fluoranthene, Total, (ug/l)	625	No Data to Report
Indeno (1,2,3-CD) Pyrene, Total, (ug/l)	625	No Data to Report
Pyrene, Total, (ug/l)	625	No Data to Report

Mesa 3 - Falcon Field		
Date of Sampling	Method	
Time		No Data to Report
Representative Storm Event		No Data to Report
Agency Collecting Sample		No Data to Report
Agency Analyzing Sample		No Data to Report
Drainage Area (acres) (DA)		No Data to Report
Impervious Area (acres) (IA)		No Data to Report
Land Use - Residential		No Data to Report
Land Use - Commercial		No Data to Report
Land Use - Industrial		No Data to Report
Land Use - Undeveloped		No Data to Report
Sampling Duration (minutes) (DRN)		No Data to Report
Storm Duration (minutes)		No Data to Report
Runoff Sampled (cubic feet) (RUN)		No Data to Report
Total Storm Runoff (cubic feet)		No Data to Report
Instantaneous Discharge (cfs)		No Data to Report
Preceeding Dry Period (days) (ANT)		No Data to Report
Total Storm Rainfall (inch)		No Data to Report
Rainfall Sampled (inch) (TRN)		No Data to Report
Maximum 5-minute rain intensity (MAX5)		No Data to Report
Sample Temperature (deg. C)	Field	No Data to Report
Effluent Temperature (deg. C)	Field	No Data to Report
pH, Effluent (standard units)	Field	No Data to Report
BOD5 (mg/l)	405.1	No Data to Report
COD High Level (mg/l)	410.1	No Data to Report
Fecal Coliform (MPN/100mL)	9222C	No Data to Report
Fecal Streptococci (MPN/100mL)	9230C	No Data to Report
Total Dissolved Solids (mg/l)	160.1	No Data to Report
Total Suspended Solids (mg/l)	160.1	No Data to Report
TKN Nitrogen (mg/l as N)	351.3	No Data to Report
Nitrogen Nitrate Total (mg/l as N)	353.2	No Data to Report
Nitrogen Ammonia Total (mg/l as N)	350.3	No Data to Report
Nitrogen Organic Total (mg/l as N)	351.4	No Data to Report
Phosphorous Total (mg/l as P)	365.2	No Data to Report
Phosphorous Dissolved (mg/l as P)	365.3	No Data to Report
Oil and Grease Total Recoverable (mg/l)	413.1	No Data to Report
Hardness (mg/l)	130.2	No Data to Report
Cadmium Total Recoverable (ug/l as Cd)	213.2	No Data to Report
Cadmium Dissolved (ug/l as Cd)	213.2	No Data to Report
Chromium Total Recoverable (ug/l as Cr)	218.2	No Data to Report
Chromium Dissolved (ug/l as Cr)	218.2	No Data to Report
Copper, Total Recoverable, (ug/l as Cu)	220.2	No Data to Report
Copper, Dissolved, (ug/l as Cu)	220.2	No Data to Report
Lead, Total Recoverable, (ug/l as Pb)	239.2	No Data to Report
Lead, Dissolved, (ug/l as Pb)	239.2	No Data to Report
Mercury, Total Recoverable, (ug/l as Hg)	245.1	No Data to Report
Mercury, Dissolved, (ug/l as Hg)	245.1	No Data to Report
Zinc, Total Recoverable, (ug/l as Zn)	289.2	No Data to Report
Zinc, Dissolved, (ug/l as Zn)	289.2	No Data to Report
P,P' DDE, Total, (ug/l)	608	No Data to Report
Methylene Chloride, Total, (ug/l)	624	No Data to Report
Toluene, Total, (ug/l)	624	No Data to Report
Benzo (a) Pyrene	625	No Data to Report
Chrysene, Total, (ug/l)	625	No Data to Report
Fluoranthene, Total, (ug/l)	625	No Data to Report
Indeno (1,2,3-CD) Pyrene, Total, (ug/l)	625	No Data to Report
Pyrene, Total, (ug/l)	625	No Data to Report

Mesa 4 - Horne and Grandview		
Date of Sampling	Method	7/14/99
Time		2000
Representative Storm Event		Y
Agency Collecting Sample		FCD
Agency Analyzing Sample		BOLIN
Drainage Area (acres) (DA)		113.1
Impervious Area (acres) (IA)		58
Land Use - Residential		100
Land Use - Commercial		0
Land Use - Industrial		0
Land Use - Undeveloped		0
Sampling Duration (minutes) (DRN)		64
Storm Duration (minutes)		157
Runoff Sampled (cubic feet) (RUN)		160,300
Total Storm Runoff (cubic feet)		183,000
Instantaneous Discharge (cfs)		82.2
Preceeding Dry Period (days) (ANT)		3
Total Storm Rainfall (inch)		0.64
Rainfall Sampled (inch) (TRN)		0.63
Maximum 5-minute rain intensity (MAX5)		4.56
Sample Temperature (deg. C)	Field	4
Effluent Temperature (deg. C)	Field	28
pH, Effluent (standard units)	Field	8
BOD5 (mg/l)	405.1	<44
COD High Level (mg/l)	410.4	160
Fecal Coliform (MPN/100mL)	9221D	13,000
Fecal Streptococci (MPN/100mL)	9230B	5,000
Total Dissolved Solids (mg/l)	2540C	199
Total Suspended Solids (mg/l)	160.2	118
TKN Nitrogen (mg/l as N)	351.3	3.42
Nitrogen Nitrate Total (mg/l as N)	CALC	0.8
Nitrogen Ammonia Total (mg/l as N)	350.2	1.31
Nitrogen Organic Total (mg/l as N)	CALC	2.11
Phosphorous Total (mg/l as P)	365.3	0.33
Phosphorous Dissolved (mg/l as P)	365.3	<0.05
Oil and Grease Total Recoverable (mg/l)	413.1	<5.0
Hardness (mg/l)	2340B	64
Cadmium Total Recoverable (ug/l as Cd)	3113B	0.7
Cadmium Dissolved (ug/l as Cd)	200.7	<5.0
Chromium Total Recoverable (ug/l as Cr)	200.7	10
Chromium Dissolved (ug/l as Cr)	200.8	3.2
Copper, Total Recoverable, (ug/l as Cu)	200.7	<15
Copper, Dissolved, (ug/l as Cu)	200.7	<15
Lead, Total Recoverable, (ug/l as Pb)	3113B	19
Lead, Dissolved, (ug/l as Pb)	200.9	<5
Mercury, Total Recoverable, (ug/l as Hg)	245.1	<0.2
Mercury, Dissolved, (ug/l as Hg)	245.1	<0.2
Zinc, Total Recoverable, (ug/l as Zn)	200.7	80
Zinc, Dissolved, (ug/l as Zn)	200.7	70
P,P' DDE, Total, (ug/l)	608	<1.0
Methylene Chloride, Total, (ug/l)	624	<50
Toluene, Total, (ug/l)	624	<20
Benzo (a) Pyrene, Total, (ug/l)	625	NA
Chrysene, Total, (ug/l)	625	<5.0
Fluoranthene, Total, (ug/l)	625	<5.0
Indeno (1,2,3-CD) Pyrene, Total, (ug/l)	625	<5.0
Pyrene, Total, (ug/l)	625	<5.0

Mesa 5 - Broadway and Dobson		
Date of Sampling	Method	
Time		No Data to Report
Representative Storm Event		No Data to Report
Agency Collecting Sample		No Data to Report
Agency Analyzing Sample		No Data to Report
Drainage Area (acres) (DA)		No Data to Report
Impervious Area (acres) (IA)		No Data to Report
Land Use - Residential		No Data to Report
Land Use - Commercial		No Data to Report
Land Use - Industrial		No Data to Report
Land Use - Undeveloped		No Data to Report
Sampling Duration (minutes) (DRN)		No Data to Report
Storm Duration (minutes)		No Data to Report
Runoff Sampled (cubic feet) (RUN)		No Data to Report
Total Storm Runoff (cubic feet)		No Data to Report
Instantaneous Discharge (cfs)		No Data to Report
Preceeding Dry Period (days) (ANT)		No Data to Report
Total Storm Rainfall (inch)		No Data to Report
Rainfall Sampled (inch) (TRN)		No Data to Report
Maximum 5-minute rain intensity (MAX5)		No Data to Report
Sample Temperature (deg. C)	Field	No Data to Report
Effluent Temperature (deg. C)	Field	No Data to Report
pH, Effluent (standard units)	Field	No Data to Report
BOD5 (mg/l)	405.1	No Data to Report
COD High Level (mg/l)	410.1	No Data to Report
Fecal Coliform (MPN/100mL)	9222C	No Data to Report
Fecal Streptococci (MPN/100mL)	9230C	No Data to Report
Total Dissolved Solids (mg/l)	160.1	No Data to Report
Total Suspended Solids (mg/l)	160.1	No Data to Report
TKN Nitrogen (mg/l as N)	351.3	No Data to Report
Nitrogen Nitrate Total (mg/l as N)	353.2	No Data to Report
Nitrogen Ammonia Total (mg/l as N)	350.3	No Data to Report
Nitrogen Organic Total (mg/l as N)	351.4	No Data to Report
Phosphorous Total (mg/l as P)	365.2	No Data to Report
Phosphorous Dissolved (mg/l as P)	365.3	No Data to Report
Oil and Grease Total Recoverable (mg/l)	413.1	No Data to Report
Hardness (mg/l)	130.2	No Data to Report
Cadmium Total Recoverable (ug/l as Cd)	213.2	No Data to Report
Cadmium Dissolved (ug/l as Cd)	213.2	No Data to Report
Chromium Total Recoverable (ug/l as Cr)	218.2	No Data to Report
Chromium Dissolved (ug/l as Cr)	218.2	No Data to Report
Copper, Total Recoverable, (ug/l as Cu)	220.2	No Data to Report
Copper, Dissolved, (ug/l as Cu)	220.2	No Data to Report
Lead, Total Recoverable, (ug/l as Pb)	239.2	No Data to Report
Lead, Dissolved, (ug/l as Pb)	239.2	No Data to Report
Mercury, Total Recoverable, (ug/l as Hg)	245.1	No Data to Report
Mercury, Dissolved, (ug/l as Hg)	245.1	No Data to Report
Zinc, Total Recoverable, (ug/l as Zn)	289.2	No Data to Report
Zinc, Dissolved, (ug/l as Zn)	289.2	No Data to Report
P,P' DDE, Total, (ug/l)	608	No Data to Report
Methylene Chloride, Total, (ug/l)	624	No Data to Report
Toluene, Total, (ug/l)	624	No Data to Report
Benzo (a) Pyrene, Total, (ug/l)	625	No Data to Report
Chrysene, Total, (ug/l)	625	No Data to Report
Fluoranthene, Total, (ug/l)	625	No Data to Report
Indeno (1,2,3-CD) Pyrene, Total, (ug/l)	625	No Data to Report
Pyrene, Total, (ug/l)	625	No Data to Report

Validation Tables

Mesa Grandview

July 14, 1999

	Method	Result	Units	Required Method Detection Limit	Flags	Date Analyzed	Allowable Holding Time	Required MS/MSD Precision (% RPD)	Actual MS/MSD Precision (%RPD)	Required Sample Duplication Precision (% RPD)	Actual Sample Duplication Precision (% RPD)	Other QA/QC Comments (out of spec)	Field Blank Detects	Comments
Sample Temperature (deg. C)		4	deg. C			7/14/99	Immediate							
Effluent Temperature (deg. C)		28	deg. C			7/14/99	Immediate							
pH, Effluent (standard units)		8.0	std. Units			7/14/99	Immediate							
BOD5 (mg/l)	405.1	<44	mg/l	1		7/15/99	48 hours			<30	n/a			
COD High Level (mg/l)	410.4	160	mg/l	1		7/26/99	28 days			<30	n/a			
Fecal Coliform (CFU/100mL)	9221D	13000	CFU/100ml	2		7/14/99	6 hours			<30	n/a			
Fecal Streptococci (CFU/100mL)	9230B	5000	CFU/100ml	2		7/14/99	6 hours			<30	n/a			
Total Dissolved Solids (mg/l)	2540C	199	mg/l	10		7/19/99	7 days			<15	n/a			
Total Suspended Solids (mg/l)	160.2	118	mg/l	10		7/19/99	7 days			<15	n/a			
TKN Nitrogen (mg/l as N)	351.3	3.42	mg/l			7/26/99	28 days				1.8			
Nitrogen Nitrate Total (mg/l as N)	calc.	0.8	mg/l			7/15/99	48 hours							
Nitrogen Ammonia Total (mg/l as N)	350.2	1.31	mg/l			7/26/99	28 days				7.6			
Nitrogen Organic Total (mg/l as N)	calc.	2.11	mg/l			7/26/99								
Phosphorous Total (mg/l as P)	365.3	0.33	mg/l	0.05		7/29/99	28 days			<15				
Phosphorous Dissolved (mg/l as P)	365.3	<0.05	mg/l			7/29/99	28 days							
Oil and Grease Total Recoverable (mg/l)	413.1	<5.0	mg/l	0.2		7/29/99	28 days	<30	n/a	<50	n/a			
Hardness (mg/l)	2340B	64	mg/l	1		8/4/99	6 months			<15	n/a			
Cadmium Total Recoverable (ug/l as Cd)	200.7	0.7	ug/l	0.2		8/6/99	6 months	<25		<35				
Cadmium Dissolved (ug/l as Cd)	200.7	<5.0	ug/l			8/4/99	6 months							
Chromium Total Recoverable (ug/l as Cr)	200.7	10	ug/l	1		8/24/99	6 months	<25		<35	0			
Chromium Dissolved (ug/l as Cr)	218.2	3.2	ug/l			9/11/99	6 months							
Copper, Total Recoverable, (ug/l as Cu)	200.7	<15	ug/l	1		8/4/99	6 months	<25		<35				
Copper, Dissolved, (ug/l as Cu)	200.7	<15	ug/l			8/4/99	6 months							
Lead, Total Recoverable, (ug/l as Pb)	3113B	19	ug/l	1		8/6/99	6 months	<25		<35				
Lead, Dissolved, (ug/l as Pb)	200.9	<5.0	ug/l			7/20/99	6 months							
Mercury, Total Recoverable, (ug/l as Hg)	245.1	<0.2	ug/l			7/23/99	6 months							
Mercury, Dissolved, (ug/l as Hg)	245.1	<0.2	ug/l			7/28/99	6 months							
Zinc, Total Recoverable, (ug/l as Zn)	200.7	80	ug/l	1		8/4/99	6 months	<25		<35				
Zinc, Dissolved, (ug/l as Zn)	200.7	70	ug/l			8/8/99	6 months							
EPA Method 608 Extraction	608					7/16/99	7 days							
P,P' DDE, Total, (ug/l)	608	<1.0	ug/l			8/7/99	40 days							
Methylene Chloride, Total, (ug/l)	624	<50	ug/l			7/28/99	14 days							
Toluene, Total, (ug/l)	624	<20	ug/l			7/28/99	14 days							
EPA Method 625 Extraction	625					7/19/99	7 days							
Benzo (a) Pyrene, Total, (ug/l)	625	<5.0	ug/l			7/27/99	40 days							
Chrysene, Total, (ug/l)	625	<5.0	ug/l			7/27/99	40 days							
Fluoranthene, Total, (ug/l)	625	<5.0	ug/l			7/27/99	40 days							
Indeno (1,2,3-CD) Pyrene, Total, (ug/l)	625	<5.0	ug/l			7/27/99	40 days							
Pyrene, Total, (ug/l)	625	<5.0	ug/l			7/27/99	40 days							

R - Rejected Data

Mesa Horne and Sixth

September 23, 1999

	Method	Result	Units	Required Method Detection Limit	Flags	Date Analyzed	Allowable Holding Time	Required MS/MSD Precision (% RPD)	Actual MS/MSD Precision (%RPD)	Required Sample Duplication Precision (% RPD)	Actual Sample Duplication Precision (% RPD)	Other QA/QC Comments (out of spec)	Field Blank Detects	Comments
Sample Temperature (deg. C)		2	deg. C			9/24/99	Immediate							
Effluent Temperature (deg. C)		NM	deg. C				Immediate							
pH, Effluent (standard units)		NM	std. Units				Immediate							
BOD5 (mg/l)	405.1	NM	mg/l	1			48 hours			<30	n/a			
COD High Level (mg/l)	410.4	65	mg/l	1		9/27/99	28 days			<30	n/a			
Fecal Coliform (CFU/100mL)	9221D	NA	CFU/100ml	2			6 hours			<30	n/a			
Fecal Streptococci (CFU/100mL)	9230B	NA	CFU/100ml	2			6 hours			<30	n/a			
Total Dissolved Solids (mg/l)	2540C	53	mg/l	10		9/29/99	7 days			<15	n/a			
Total Suspended Solids (mg/l)	160.2	202	mg/l	10		9/28/99	7 days			<15	n/a			
TKN Nitrogen (mg/l as N)	351.3	1.66	mg/l			9/30/99	28 days				7.48			
Nitrogen Nitrate Total (mg/l as N)	calc.	0.7	mg/l			9/24/99	48 hours							
Nitrogen Ammonia Total (mg/l as N)	350.2	0.95	mg/l			10/6/99	28 days				2.08			
Nitrogen Organic Total (mg/l as N)	calc.	0.71	mg/l			9/30/99								
Phosphorous Total (mg/l as P)	365.3	0.48	mg/l	0.05		10/4/99	28 days			<15				
Phosphorous Dissolved (mg/l as P)	365.3	0.16	mg/l			10/4/99	28 days							
Oil and Grease Total Recoverable (mg/l)	413.1	NA	mg/l	0.2			28 days	<30	n/a	<50	n/a			
Hardness (mg/l)	2340B	40	mg/l	1		11/11/99	6 months			<15	n/a			
Cadmium Total Recoverable (ug/l as Cd)	200.7	<5.0	ug/l	0.2		11/11/99	6 months	<25		<35				
Cadmium Dissolved (ug/l as Cd)	200.7	<5.0	ug/l			10/8/99	6 months							
Chromium Total Recoverable (ug/l as Cr)	200.8	9.3	ug/l	1		10/28/99	6 months	<25		<35				
Chromium Dissolved (ug/l as Cr)	200.8	0.6	ug/l			10/12/99	6 months							
Copper, Total Recoverable, (ug/l as Cu)	200.7	17	ug/l	1		11/11/99	6 months	<25		<35				
Copper, Dissolved, (ug/l as Cu)	200.7	<15	ug/l			10/8/99	6 months							
Lead, Total Recoverable, (ug/l as Pb)	3113B	7	ug/l	1		11/3/99	6 months	<25		<35				
Lead, Dissolved, (ug/l as Pb)	200.9	<5.0	ug/l			9/30/99	6 months							
Mercury, Total Recoverable, (ug/l as Hg)	245.1	<0.2	ug/l			10/5/99	6 months							
Mercury, Dissolved, (ug/l as Hg)	245.1	<0.2	ug/l			10/5/99	6 months							
Zinc, Total Recoverable, (ug/l as Zn)	200.7	150	ug/l	1		11/11/99	6 months	<25		<35				
Zinc, Dissolved, (ug/l as Zn)	200.7	<20	ug/l			10/8/99	6 months							
EPA Method 608 Extraction	608					9/29/99	7 days							
P,P' DDE, Total, (ug/l)	608	<1.0	ug/l			10/1/99	40 days							
Methylene Chloride, Total, (ug/l)	624	NA	ug/l				14 days							
Toluene, Total, (ug/l)	624	NA	ug/l				14 days							
EPA Method 625 Extraction	625					9/30/99	7 days							
Benzo (a) Pyrene, Total, (ug/l)	625	<5.0	ug/l			10/9/99	40 days							
Chrysene, Total, (ug/l)	625	<5.0	ug/l			10/9/99	40 days							
Fluoranthene, Total, (ug/l)	625	<5.0	ug/l			10/9/99	40 days							
Indeno (1,2,3-CD) Pyrene, Total, (ug/l)	625	<5.0	ug/l			10/9/99	40 days							
Pyrene, Total, (ug/l)	625	<5.0	ug/l			10/9/99	40 days							

R - Rejected Data

Hard Copies of Data

Data Checksheet

Site	HORNE & GRANDVIEW
Municipality	MESA
Sample Date	JULY 14, 1999

Date Received	SEPTEMBER 30, 1999

Laboratory Used	BOLIN
Laboratory Contact	STEPHANIE ARMAO
FCD Sample ID Number	MESA #4 GRAB AND COMPOSITE
Lab Sample ID Number	9907-06312-001 AND 002
Laboratory Invoice Number	057372

Initial Review Complete	✓	Date	10-04-99
Lab Contacted		Date	
Lab Review Complete		Date	
Second Review Complete		Date	
Additional Review Necessary			

Comments

Data Validation Table Complete	✓	Date	10-29-99

Data Entered Into Database	✓	Date	10-29-99

Bolin Laboratories Inc.

17631 N. 25th Avenue • Phoenix, Arizona 85023
(602) 942 8220 • FAX (602) 942 1050

Maricopa County Flood Control
Environmental Branch
2801 West Durango
Phoenix, AZ 85009
Attn: Dave Gardner

Received: 7/14/99
Reported: 9/03/99
Invoice No: 057372

Project Name: Mesa

Matrix: Storm Water
Sample No: 9907-06312-002
Sample ID: Mesa #4 - Composite

Time Sampled: 20:00
Date Sampled: 7/14/1999

PARAMETER	METHOD	RESULTS	UNITS	PQL	DATE ANALYZED
Chemical Oxygen Demand	EPA 410.4	160.	mg/L	100	7/26/99
Total Dissolved Solids	SM 2540C	199.	mg/L		7/19/99
Solids, Total Suspended	EPA 160.2	118.	mg/L		7/19/99
Nitrogen as Ammonia	EPA 350.2	1.31	mg/L	0.03	7/26/99
Organic Nitrogen	CALCULATION	2.11	mg/L		
Total Kjeldahl Nitrogen	EPA 351.3	3.42	mg/L	0.03	7/26/99
Total Phosphorous as P	EPA 365.3	0.33	mg/L	0.05	7/29/99
Total Phosphate	CALCULATION	1.0	mg/L	0.15	7/29/99
Metals Digestion for ICP	EPA 200.7				7/21/99
Metals Digestion for GFAA	SM 3030E				7/28/99
Copper	EPA 200.7	<0.015	mg/L	0.015	8/04/99
Lead	SM 3113B	0.019	mg/L	0.005	8/06/99
Mercury	EPA 245.1	<0.0002	mg/L	0.0002	7/23/99
Chromium	EPA 200.7	0.01 **	mg/L	0.01	8/24/99
Chromium, Dissolved	EPA M200.8	0.0032 ***	mg/L	0.0005	9/11/99
Cadmium, Dissolved	EPA 200.7	<0.005	mg/L	0.005	8/04/99
Copper, Dissolved	EPA 200.7	<0.015	mg/L	0.015	8/04/99
Lead, Dissolved	EPA 200.9	<0.005	mg/L	0.005	7/20/99
Mercury, Dissolved	EPA 245.1	<0.0002	mg/L	0.0002	7/28/99
4,4'-DDE	EPA 608	ND	ug/L	1.0	8/07/99
Extraction	EPA 608				7/16/99
Surrogate:	EPA 608				8/07/99
***Dibutylchlorendate	EPA 608	86	% Recovery		8/07/99
Fluoranthene	EPA 625	ND	ug/L	5.0	7/27/99
Pyrene	EPA 625	ND	ug/L	5.0	7/27/99
Benzo (a) anthracene	EPA 625	ND	ug/L	5.0	7/27/99
Chrysene	EPA 625	ND	ug/L	5.0	7/27/99
Indeno (1,2,3-cd) pyrene	EPA 625	ND	ug/L	5.0	7/27/99
Extraction	EPA 625				7/19/99
Surrogate:	EPA 625				7/27/99
***d5-Phenol	EPA 625	27.0	% Recovery		7/27/99
***2-Fluorophenol	EPA 625	34.0	% Recovery		7/27/99

Bolin Laboratories Inc.

17631 N. 25th Avenue • Phoenix, Arizona 85023
(602) 942 8220 • FAX (602) 942 1050

Matrix: Storm Water
Sample No: 9907-06312-002

Time Sampled: 20:00
Date Sampled: 7/14/1999

PARAMETER	METHOD	RESULTS	UNITS	PQL	DATE ANALYZED
***d5-Nitrobenzene	EPA 625	62.2	% Recovery		7/27/99
***2-Fluorobiphenyl	EPA 625	61.8	% Recovery		7/27/99
***2,4,6-Tribromophenol	EPA 625	91.3	% Recovery		7/27/99
***d14-Terphenyl	EPA 625	81.0	% Recovery		7/27/99
pH	EPA 150.1	7.2	Std Unit		7/15/99
Nitrogen as Nitrite	SM 4500-NO2 B	<0.1	mg/L	0.1	7/15/99
Nitrate plus Nitrite	SM 4500-NO3 F	0.8	mg/L	0.1	7/15/99
Nitrogen as Nitrate	CALCULATION	0.8	mg/L		7/15/99
Phosphorus, Dissolved	EPA 365.3	<0.05	mg/L	0.05	7/29/99
Sulfate, Dissolved	EPA 300.0	28.5	mg/L	30	7/28/99
Cadmium	SM 3113B	0.0007	mg/L	0.0002	8/06/99
Calcium	EPA 200.7	21.	mg/L	1.	8/04/99
Magnesium	EPA 200.7	3.	mg/L	1.	8/04/99
Hardness, Total (Ca & Mg)	SM 2340B	64	mg/L	7.	8/04/99
Zinc	EPA 200.7	0.08	mg/L	0.02	8/04/99
Nickel	EPA 200.7	0.02**	mg/L	0.01	8/24/99
Nickel, Dissolved	EPA 200.7	0.02**	mg/L	0.01	8/24/99
Zinc, Dissolved	EPA 200.7	0.07	mg/L	0.02	8/08/99

EPA Method 625 performed by Legend Technical Services, St.Paul MN, #AZ0557.
TKN & Ammonia analyzed by Aquatic Consulting, Tempe AZ. #AZ0003.
EPA Method 608 analyzed by Alpha Analytical. Sparks, NV. #AZ0467.
**Metals analyzed by Aquatic Consulting, Tempe AZ. #AZ0003.
***Metals analyzed by ACZ Laboratories, Steamboat Springs CO. #AZ0102.

Stephanie Armao

Authorized Signatory
ADHS License No.: AZ0004

Bolin Laboratories Inc.

17631 N. 25th Avenue • Phoenix, Arizona 85023
(602) 942 8220 • FAX (602) 942 1050

Maricopa County Flood Control
Environmental Branch
2801 West Durango
Phoenix, AZ 85009
Attn: Dave Gardner

Received: 7/14/99
Reported: 9/03/99
Invoice No: 057372

Project Name: Mesa

Matrix: Storm Water
Sample No: 9907-06312-001
Sample ID: Mesa #4 - Grab

Time Sampled: 20:00
Date Sampled: 7/14/1999

PARAMETER	METHOD	RESULTS	UNITS	PQL	DATE ANALYZED
Biochemical Oxygen Demand	EPA 405.1	<44. F	mg/L		7/15/99
Coliform, Fecal (MPN)	SM 9221D	13000	MPN/100ml	20	7/14/99
Fecal Streptococcus	SM 9230B	5000	MPN/100ml	20	7/14/99
Oil & Grease	EPA 413.1	<5.0	mg/L	5.0	7/29/99
Dichloromethane	EPA 624	ND	ug/L	50	7/28/99
Toluene	EPA 624	ND	ug/L	20	7/28/99
Surrogates:	EPA 624				7/28/99
***Pentafluorobenzene	EPA 624	88	% Recovery		7/28/99
***1,2-dichloroethane-d4	EPA 624	82	% Recovery		7/28/99
***4-bromofluorobenzene	EPA 624	72	% Recovery		7/28/99
***1,2-dichlorobenzene-d4	EPA 624	101	% Recovery		7/28/99
Temperature, Field		28.	Degrees C		7/14/99
pH, Field		8.0	Std Unit		7/14/99

F = The oxygen depletion for the BOD seed was outside laboratory acceptance criteria. The associated GGA check standard was acceptable. Data is considered valid.

Stephanie Armao

Authorized Signatory
ADHS License No.: AZ0004

Bolin Laboratories Inc.

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(602) 942 8220 • FAX (602) 942 1050

Quality Control Data Report

Client: MCFC
Bolin Sample ID: 9907-6312-01

Analyte	Method	Date Analyzed	Spk Conc. (ppm)	MS %Rec	MSD %Rec	RPD	Blk (ppb)	ICV %Rec	CCV %Rec
BOD	EPA 405.1	7/15/99	N/A	N/A	N/A	N/A	<PQL	92	
Oil & Grease	EPA 413.1	7/29/99	N/A	N/A	N/A	N/A	<PQL	95	

MS/MSD are Matrix Spikes
ICV is Initial Calibration Verification
CCV is Continuing Calibration Verification
RPD is Relative Percent Difference
BLK is a Blank
LFB is a Laboratory Fortified Blank

Bolin Laboratories Inc.

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Quality Control Data Report

Client: MCFC
Bolin Sample ID: 9907-6312 - 002

Analyte	Method	Date Analyzed	Spk Conc. (ppm)	MS %Rec	MSD %Rec	RPD	Blk (ppb)	ICV %Rec	CCV %Rec
COD	EPA 410.4	7/26/99	74	109	108	1	<PQL	97	98
Total Suspended Solids	EPA 160.1	7/19/99	N/A	N/A	N/A	N/A	<PQL	94	99
Dissolved Sulfate	EPA 300.0	7/28/99	30	88	92	4	<PQL	100	96
Nitrate + Nitrite	SM 4500 NO3 F	7/15/99	9.52	95	94	1	<PQL	103	102
Nitrite	SM 4500 NO2B	7/15/99	9.52	109	108	1	<PQL	107	106
Total Dissolved Solids	SM 2540C	7/19/99	N/A	N/A	N/A	N/A	<PQL	94	104
Total Phosphorous	EPA 365.3	7/29/99	0.13	112	119	7? 6	<PQL	110	103
Dissolved Phosphorous	EPA 365.2	7/29/99	0.26	96	96	0	<PQL	110	107

MS/MSD are Matrix Spikes
ICV is Initial Calibration Verification
CCV is Continuing Calibration Verification
RPD is Relative Percent Difference
BLK is a Blank
LFB is a Laboratory Fortified Blank

Bolin Laboratories Inc.

17631 N. 25th Avenue • Phoenix, Arizona 85023
(602) 942 8220 • FAX (602) 942 1050

Quality Control Data Report

Client: MCFC
Bolin Sample ID: 9907-6312 -04&07

Analyte	Method	Date Analyzed	Spk Conc. (ppm)	MS %Rec	MSD %Rec	RPD	Blk (ppb)	ICV %Rec	CCV %Rec
BOD	EPA 405.1	7/15/99	N/A	N/A	N/A	N/A	<PQL	92	
Oil & Grease	EPA 413.1	7/29/99	N/A	N/A	N/A	N/A	<PQL	95	

MS/MSD are Matrix Spikes

ICV is Initial Calibration Verification

CCV is Continuing Calibration Verification

RPD is Relative Percent Difference

BLK is a Blank

LFB is a Laboratory Fortified Blank

Bolin Laboratories Inc.

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Quality Control Data Report

Client: MCFC
Bolin Sample ID: 9907-6312 - 05

Analyte	Method	Date Analyzed	Spk Conc. (ppm)	MS %Rec	MSD %Rec	RPD	Blk (ppb)	ICV %Rec	CCV %Rec
COD	EPA 410.4	7/26/99	74	109	108	1	<PQL	97	98
Total Suspended Solids	EPA 160.1	7/20/99	N/A	N/A	N/A	N/A	<PQL	96	103
Dissolved Sulfate	EPA 300.0	7/28/99	30	88	92	4	<PQL	100	96
Nitrate + Nitrite	SM 4500 NO3 F	7/15/99	9.52	95	94	1	<PQL	103	102
Nitrite	SM 4500 NO2B	7/15/99	9.52	109	108	1	<PQL	107	106
Total Dissolved Solids	SM 2540C	7/19/99	N/A	N/A	N/A	N/A	<PQL	94	104
Total Phosphorous	EPA 365.3	7/29/99	0.13	112	119	?? 6	<PQL	110	103
Dissolved Phosphorous	EPA 365.2	7/29/99	0.26	96	96	0	<PQL	110	107

MS/MSD are Matrix Spikes
ICV is Initial Calibration Verification
CCV is Continuing Calibration Verification
RPD is Relative Percent Difference
BLK is a Blank
LFB is a Laboratory Fortified Blank

Bolin Laboratories Inc.

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Quality Control Data Report

Client: MCFC
Bolin Sample ID: 9907-6312 - 08

Analyte	Method	Date Analyzed	Spk Conc. (ppm)	MS %Rec	MSD %Rec	RPD	Blk (ppb)	ICV %Rec	CCV %Rec
COD	EPA 410.4	7/26/99	74	109	108	1	<PQL	97	98
Total Suspended Solids	EPA 160.1	7/20/99	N/A	N/A	N/A	N/A	<PQL	96	103
Dissolved Sulfate	EPA 300.0	7/28/99	30	88	92	4	<PQL	100	96
Nitrate + Nitrite	SM 4500 NO3 F	7/15/99	9.52	95	94	1	<PQL	103	102
Nitrite	SM 4500 NO2B	7/15/99	9.52	109	108	1	<PQL	107	106
Total Dissolved Solids	SM 2540C	7/19/99	N/A	N/A	N/A	N/A	<PQL	94	104
Total Phosphorous	EPA 365.3	7/29/99	0.13	112	119	7 6	<PQL	110	103
Dissolved Phosphorous	EPA 365.2	7/29/99	0.26	96	96	0	<PQL	110	107

MS/MSD are Matrix Spikes

ICV is Initial Calibration Verification

CCV is Continuing Calibration Verification

RPD is Relative Percent Difference

BLK is a Blank

LFB is a Laboratory Fortified Blank

Bolin Laboratories Inc.

17631 N. 25th Avenue • Phoenix, Arizona 85023
(602) 942 8220 • FAX (602) 942 1050

Quality Control Data Report

Client: Maricopa Flood Control District
Bolin Sample ID: 9907-06312-002, 005, 008 (Dissolved)

Analyte	Method	Date Analyzed	Spk Conc. (ppm)	MS %Rec	MSD %Rec	Blk (ppm)	ICV %Rec	CCV %Rec
Copper	EPA 200.7	8/4/99	1	99	102	<PQL	97	105
Zinc	EPA 200.7	8/7/99	1	99	97	<PQL	103	98
Lead	EPA 200.9/SM 3113B	7/20/99	0.020	100	100	<PQL	105	100
Mercury	EPA 245.1	7/28/99	0.005	116	116	<PQL	98	98

MI Matrix Interference
ICV Initial Calibration Verification
CCV Continuing Calibration Verification
MS is Matrix Spike
MSD is a Matrix Spike Duplicate.
RPD is Relative Percent Difference
BLK is a Blank

Bolin Laboratories Inc.

17631 N. 25th Avenue • Phoenix, Arizona 85023
(602) 942 8220 • FAX (602) 942 1050

Quality Control Data Report

Bolin Sample ID: 9907-6312-(1,4,7)

Analyte	Method	Date Analyzed	Spk Conc. (ppb)	BLK MS %Rec	BLK MSD %Rec	RPD	BLK (ppb)	CCV %Rec
Chloromethane	EPA 624	7/28/99	10	106	109	3	<PQL	96
Vinyl Chloride	EPA 624	7/28/99	10	108	107	1	<PQL	97
Bromomethane	EPA 624	7/28/99	10	200	198	1	<PQL	168
Chloroethane	EPA 624	7/28/99	10	113	112	1	<PQL	100
Trichlorofluoromethane	EPA 624	7/28/99	10	105	101	4	<PQL	92
1,1-Dichloroethylene	EPA 624	7/28/99	10	105	104	1	<PQL	107
Dichloromethane	EPA 624	7/28/99	10	108	106	2	<PQL	98
trans 1,2-DCE	EPA 624	7/28/99	10	105	103	2	<PQL	104
1,1-Dichloroethane	EPA 624	7/28/99	10	105	102	3	<PQL	98
Chloroform	EPA 624	7/28/99	10	103	100	3	<PQL	100
1,1,1-Trichloroethane	EPA 624	7/28/99	10	102	100	2	<PQL	96
Carbon tetrachloride	EPA 624	7/28/99	10	102	100	2	<PQL	96
Benzene	EPA 624	7/28/99	10	106	105	1	<PQL	101
1,2-Dichloroethane	EPA 624	7/28/99	10	106	100	6	<PQL	95
Trichloroethylene	EPA 624	7/28/99	10	107	106	1	<PQL	95
1,2-Dichloropropane	EPA 624	7/28/99	10	107	104	3	<PQL	100
Bromodichloromethane	EPA 624	7/28/99	10	104	101	3	<PQL	100
2-Chloroethylvinyl ether	EPA 624	7/28/99	10	93	94	1	<PQL	103
cis 1,3-Dichloropropene	EPA 624	7/28/99	10	99	98	1	<PQL	89
Toluene	EPA 624	7/28/99	10	104	104	0	<PQL	100
trans 1,3-Dichloropropene	EPA 624	7/28/99	10	106	102	4	<PQL	97
1,1,2-Trichloroethane	EPA 624	7/28/99	10	106	101	5	<PQL	100
Tetrachloroethylene	EPA 624	7/28/99	10	105	102	3	<PQL	108
Dibromochloromethane	EPA 624	7/28/99	10	106	102	4	<PQL	104
Chlorobenzene	EPA 624	7/28/99	10	107	102	5	<PQL	99
Ethylbenzene	EPA 624	7/28/99	10	115	110	4	<PQL	102
1,3-Dichlorobenzene	EPA 624	7/28/99	10	109	103	6	<PQL	97
1,4-Dichlorobenzene	EPA 624	7/28/99	10	107	102	5	<PQL	95
Bromoform	EPA 624	7/28/99	10	100	104	4	<PQL	118
1,1,2,2-Tetrachloroethane	EPA 624	7/28/99	10	100	100	0	<PQL	104
1,2-Dichlorobenzene	EPA 624	7/28/99	10	105	105	0	<PQL	103

CCV = Continuing Calibration Verification.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.

RPD = Relative Percent Difference.
BLK = Blank.
BLK-MS is a Blank Spike

Bolin Laboratories Inc.

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Quality Control Data Report

Bolin Sample ID's: 9907-6106-001; 9907-6109-001; 9907-6132-001; 9907-6133-001
9907-6153-001,003,006; 9907-6312-002,005,008

Analyte	Method	Date Analyzed	Spk Conc. (ppm)	MS %Rec	MSD %Rec	Blk (ppm)	ICV %Rec	CCV %Rec
Barium	EPA 200.7	8/4/99	1	98	100	<PQL	103	105
Boron	EPA 200.7	8/4/99	1	94	98	<PQL	104	102
Copper	EPA 200.7	8/4/99	1	96	98	<PQL	102	102
Magnesium	EPA 200.7	8/4/99	30	93	96	<PQL	99	102
Silver	EPA 200.7	8/4/99	0.5	112	113	<PQL	104	103

NOTES:

Sample in bold listed above has been spiked for quality control purposes.
MI = Matrix Interference
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
MS = Matrix Spike
MSD = Matrix Spike Duplicate.
BLK = Blank

Bolin Laboratories Inc.

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Quality Control Data Report

Analysis Date: 8/6/99

Bolin Sample ID's: 9907-6312-002,005,008; 9907-6337-002,004,005; 9907-6366-001; **9907-6107-**

Analyte	Method	Spk Conc. (ppm)	MS %Rec	MSD %Rec	Blk (ppm)	ICV %Rec	CCV %Rec
Cadmium	EPA 200.9/SM 3113B	0.002	110	110	<PQL	105	110
Arsenic	EPA 200.9/SM 3113B	0.020	110	105	<PQL	100	105
Lead	EPA 200.9/SM 3113B	0.020	105	105	<PQL	100	110
Selenium	EPA 200.9/SM 3113B	0.020	95	100	<PQL	100	95

NOTES:

Sample in bold listed above has been spiked for quality control purposes.
MI = Matrix Interference
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
MS = Matrix Spike
MSD = Matrix Spike Duplicate.
BLK = Blank

Bolin Laboratories Inc.

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(602) 942 8220 • FAX (602) 942 1050

Quality Control Data Report

Analysis Date: 7/23/99

Bolin Sample ID's: **9907-06324-002**, 9907-06307-001, 9907-06310-001, 9907-06310-002, 9907-06312-002, 9907-05797-001, 9907-06319-001 (TCLP), 9907-06312-005 (TCLP), 9907-06312-008 (TCLP)

Analyte	Method	Spk Conc. (ppm)	MS %Rec	MSD %Rec	Blk (ppm)	ICV %Rec	CCV %Rec
Mercury	245.1/EPA 74	0.005	102	102	<PQL	98	96

NOTES:

Sample in bold listed above has been spiked for quality control purposes.
MI = Matrix Interference
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
MS = Matrix Spike
MSD = Matrix Spike Duplicate.
RPD = Relative Percent Difference

QC Report

QC Parameter	Sample Result	ICP Sample Result	QCS % Rec	Duplicate Result	Duplicate RPD	Spike Result	Spike % Rec
Batch ID: CR-D-628 QC ID: BE08510		Samples: BE08505 BE08506 BE08507 BE08508 BE08509 BE08510					
Chromium, Dissolved	<0.01						
Batch ID: CR-T-629 QC ID: BE08510		Samples: BE08505 BE08506 BE08507 BE08508 BE08509 BE08510					
Chromium, Total	0.02		106.	0.02	0.00	5.26	105
Batch ID: NI-D-630 QC ID: BE08510		Samples: BE08505 BE08506 BE08507 BE08508 BE08509 BE08510					
Nickel, Dissolved	0.02						
Batch ID: NI-T-631 QC ID: BE08510		Samples: BE08505 BE08506 BE08507 BE08508 BE08509 BE08510					
Nickel, Total	0.03		114.	0.03	0.00	5.61	112

AQUATIC CONSULTING & TESTING, INC.

1525 W. University Drive, Suite 106
P.O. Box 1510
Tempe, Arizona 85281
Phone: (602) 921-8044 • FAX: (602) 921-0049

Lic. No. AZ0003

QUALITY CONTROL REPORT

PARAMETER:	NH_3	UNITS:	mg/L
METHOD NO.:	EPA 350.2	ANALYST:	SLM
ANALYSIS DATE:	07/26/99	PREPARED BY:	CJC

QUALITY CONTROL SAMPLE

Theoretical Value	Analytical Value	% Recovery
1.00	0.95	95

DUPLICATE SAMPLE

Lab I.D.	Result 1	Result 2	% RPD
BE-07692	1.36	1.26	7.6
BE-07701	0.17	0.17	0.0

SPIKED SAMPLE

Lab I.D.	Sample Result	Spike Result	Amount Spiked	% Recovery
BE-07692	1.31	6.06	5.00	95
BE-07701	0.17	1.24	1.00	107

Reagent Blank = < 0.03

File No. NH3-7-26.xls

AQUATIC CONSULTING & TESTING, INC.

1525 W. University Drive, Suite 106
P.O. Box 1510
Tempe, Arizona 85281
Phone: (602) 921-8044 • FAX: (602) 921-0049

Lic. No. AZ0003

QUALITY CONTROL REPORT

PARAMETER:	TKN	UNITS:	mg/L
METHOD NO.:	EPA 351.3	ANALYST:	SLM
ANALYSIS DATE:	07/26/99	PREPARED BY:	CJC

QUALITY CONTROL SAMPLE

Theoretical Value	Analytical Value	% Recovery
1.00	1.03	103

DUPLICATE SAMPLE

Lab I.D.	Result 1	Result 2	% RPD
BE-07683	4.40	4.32	1.8
BE-07703	3.55	3.68	3.6

SPIKED SAMPLE

Lab I.D.	Sample Result	Spike Result	Amount Spiked	% Recovery
BE-07683	4.36	8.91	5.00	91
BE-07703	3.61	8.43	5.00	96

Reagent Blank = < 0.03

File No. TKN-7-26.xls

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21
Sparks, Nevada 89431-5778
(775) 355-1044
FAX: 775-355-0406
LAB: 1-800-283-1183

Las Vegas, NV • (702) 198-3312 Sacramento, CA • (916) 366-9089 Wichita, KS • (316) 722-5890
info@alpha-analytical.com

8-13-99; 2:33PM;ALPHA ANALYTICAL Bolin Labs ;17753550406 # 7/ 30

EPA Method 608/8081A
QC Summary

Batch: 990805
Date: 8/8/99

Initials: US
Instrument ID: GC/ECD#2D

Analyte	LRB		LCS BLL99080542-26A PEST			LCSD BLL99080542-27A PEST			Precision	MS BLL99080542-29A (6482-1)			Accuracy	Comments
	Conc. µg/L	R.L. µg/L	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	RPD %	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Range of Acceptability*	
gamma-BHC	ND	0.05	5.0	3.928	79	5.0	4.037	81	2.7	5.0	3.541	71	32-127	
Aldrin	ND	0.05	5.0	3.949	79	5.0	4.007	80	1.4	5.0	3.414	68	42-122	
Heptachlor epoxide	ND	0.05	5.0	4.182	84	5.0	4.316	86	3.1	5.0	3.514	70	37-142	
Dieldrin	ND	0.10	5.0	4.028	81	5.0	4.139	83	2.7	5.0	3.332	67	36-146	
Endrin	ND	0.10	5.0	4.099	82	5.0	4.240	85	3.4	5.0	3.652	73	30-147	
4,4'-DDT	ND	0.10	5.0	3.753	75	5.0	3.848	77	2.5	5.0	3.516	70	25-160	

* DQOS are derived from EPA Methods 608

Endrin Breakdown: 10%
DDT Breakdown: 13%

Surrogate Recovery
DBC Limits: 35-135%

AAI ID	DBC % Rec.		AAI ID	DBC % Rec.		AAI ID	DBC % Rec.	
MBLK BLL99080542-25A	112							
LCS BLL99080542-26A PEST	134							
MS BLL99080542-29A (6482-1)	111							
LCSD BLL99080542-27A PEST	136							
SAMP BLL99080542-30A (6482-1)	77							
SAMP BLL99080542-31A (6496-2)	71							
SAMP BLL99080542-32A (6547-1)	58							

DO: Diluted out

Received Time Aug. 13. 2:30PM

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info@alphaanalytical.com

EPA Method 608/8081A
Calibration Factor / Continuing Calibration

Batch: 990805
Date: 8/8/99

Initials: _____
Instrument ID: GC/ECD#2D

Analyte	Initial Calibration: Calibration Factors (Conc./Area) 0.0025 d53820	0.005 d53830	0.01 d53830	0.02 d53850	0.05 d53860	0.1 d53870	0.2 d53880	Mean	RSD* %	Coefficient of Determination	Continuing Calibration Verification: 8081 CCV 0.1NG/UL Conc. µg/L	Rec. Amt. µg/L	Rec. %	8081 CCV 0.02NG/UL Conc. µg/L	Rec. Amt. µg/L	Rec. %	Accuracy Range of Acceptability
Hexachlorobenzene	3.62E-08	3.84E-08	4.22E-08	4.69E-08	5.80E-08	6.78E-08	8.30E-08	5.34E-08	32.1		0.1	0.101	101	0.02	0.020	100	85-115%
alpha-BHC	4.24E-08	4.18E-08	4.08E-08	4.04E-08	4.65E-08	5.21E-08	6.22E-08	4.68E-08	17.2		0.1	0.100	100	0.02	0.019	97	85-115%
gamma-BHC	4.10E-08	4.09E-08	4.12E-08	4.36E-08	5.10E-08	5.75E-08	6.82E-08	4.91E-08	21.4		0.1	0.091	91	0.02	0.019	93	85-115%
Heptachlor	3.61E-08	3.70E-08	3.84E-08	4.26E-08	5.12E-08	5.82E-08	7.03E-08	4.77E-08	27.0		0.1	0.100	100	0.02	0.019	95	85-115%
Aldrin	4.37E-08	4.46E-08	4.46E-08	4.71E-08	5.48E-08	6.24E-08	7.45E-08	5.31E-08	22.0		0.1	0.099	99	0.02	0.019	93	85-115%
beta-BHC	6.63E-08	7.07E-08	7.46E-08	8.20E-08	9.80E-08	1.12E-07	1.34E-07	9.12E-08	27.4		0.1	0.095	95	0.02	0.018	91	85-115%
delta-BHC	6.56E-08	6.39E-08	6.22E-08	6.54E-08	7.29E-08	7.98E-08	9.37E-08	7.19E-08	15.8		0.1	0.098	98	0.02	0.018	92	85-115%
Heptachlor epoxide	4.80E-08	4.69E-08	4.69E-08	5.19E-08	6.06E-08	6.84E-08	8.23E-08	5.79E-08	23.3		0.1	0.097	97	0.02	0.018	92	85-115%
Endosulfan I	5.01E-08	5.12E-08	5.16E-08	5.62E-08	6.52E-08	7.39E-08	8.81E-08	6.23E-08	23.0		0.1	0.096	96	0.02	0.017	87	85-115%
gamma-Chlordane	4.69E-08	4.72E-08	4.86E-08	5.22E-08	6.08E-08	6.87E-08	8.16E-08	5.80E-08	22.7		0.1	0.095	95	0.02	0.017	87	85-115%
alpha-Chlordane	4.57E-08	4.68E-08	4.84E-08	5.31E-08	6.25E-08	7.12E-08	8.51E-08	5.90E-08	25.1		0.1	0.095	95	0.02	0.017	85	85-115%
4,4'-DDE	5.62E-08	5.48E-08	5.39E-08	5.67E-08	6.47E-08	7.29E-08	8.66E-08	6.37E-08	19.1		0.1	0.095	95	0.02	0.017	84	85-115%
Dieldrin	5.41E-08	5.46E-08	5.43E-08	5.68E-08	6.43E-08	7.13E-08	8.34E-08	6.27E-08	17.8		0.1	0.095	95	0.02	0.017	84	85-115%
Endrin	6.46E-08	6.67E-08	6.57E-08	7.09E-08	7.90E-08	9.00E-08	1.06E-07	7.76E-08	20.1		0.1	0.101	101	0.02	0.017	84	85-115%
4,4'-DDD	7.01E-08	7.10E-08	6.98E-08	7.04E-08	8.00E-08	8.91E-08	1.04E-07	7.93E-08	16.6		0.1	0.096	96	0.02	0.017	85	85-115%
Endosulfan II	5.89E-08	6.29E-08	6.39E-08	6.91E-08	7.88E-08	8.76E-08	1.02E-07	7.47E-08	20.8		0.1	0.092	92	0.02	0.017	85	85-115%
4,4'-DDT	9.02E-08	9.02E-08	9.00E-08	9.81E-08	1.07E-07	1.15E-07	1.30E-07	1.03E-07	14.9		0.1	0.085	85	0.02	0.016	79	85-115%
Endrin Aldehyde	9.18E-08	7.96E-08	8.06E-08	8.04E-08	8.87E-08	9.48E-08	1.07E-07	8.90E-08	11.3		0.1	0.087	87	0.02	0.017	83	85-115%
Methoxychlor	1.26E-07	1.28E-07	1.34E-07	1.50E-07	1.67E-07	1.81E-07	2.24E-07	1.59E-07	22.2		0.1	0.094	94	0.02	0.017	85	85-115%
Endosulfan Sulfate	1.02E-07	1.09E-07	1.12E-07	1.18E-07	1.32E-07	1.47E-07	1.61E-07	1.26E-07	17.3		0.1	0.086	86	0.02	0.018	88	85-115%
Endrin Ketone	8.70E-08	8.55E-08	8.43E-08	8.69E-08	9.67E-08	1.03E-07	1.17E-07	9.44E-08	13.0		0.1	0.087	87	0.02	0.016	81	85-115%
Permethion I	9.08E-08	9.43E-08	9.89E-08	1.09E-07	1.31E-07	1.51E-07	1.81E-07	1.22E-07	27.6		0.1	0.855	86	0.02	0.181	90	85-115%
Permethion II	2.01E-07	2.09E-07	2.16E-07	2.29E-07	2.63E-07	2.94E-07	3.44E-07	2.51E-07	21.1		0.1	0.827	83	0.02	0.176	88	85-115%
							Average %RSD		20.8		Average Recovery %		94	Average Recovery %		88	85-115%

Method 608
Initial Calibration Criteria
Prepare a calibration curve using a minimum of three calibration points. Alternatively, if the RSD <10%, linearity through the origin and quantitation using the Average Response Factor may be used.
Calibration Verification Criteria
A Calibration Verification Standard must be analyzed daily. The CVS is acceptable if the response of each analyte is within 15% of its true value.

Method 8081
Initial Calibration Criteria
*If the RSD of an analyte is <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may be used.
If the RSD for one or more analytes exceeds 20%, but the average RSD of all analytes is still <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may still be used
If the average RSD of all analytes exceeds 20%, linearity through the origin may not be used. The use of a linear regression not forced through zero may be used if the coefficient of determination >= 0.99.
Alternatively, a calibration curve may be prepared. A second order (quadratic) calibration curve must have a minimum of six calibration points. The curve cannot be forced through the origin or used as a calibration point.
The coefficient of determination of an acceptable calibration curve must be >= 0.99.
Calibration Verification Criteria
The CVS is acceptable if the response of each analyte is within 15% of its true value.
If this criteria is exceeded for one or more analytes, but the average response of all analytes is within 15% of their true values, the CVS is acceptable.

Calibration Type: 7 point Quadratic

8-13-99; 2:33PM;ALPHA ANALYTICAL 8011 Labs ;17/5355406 # 8/ 30
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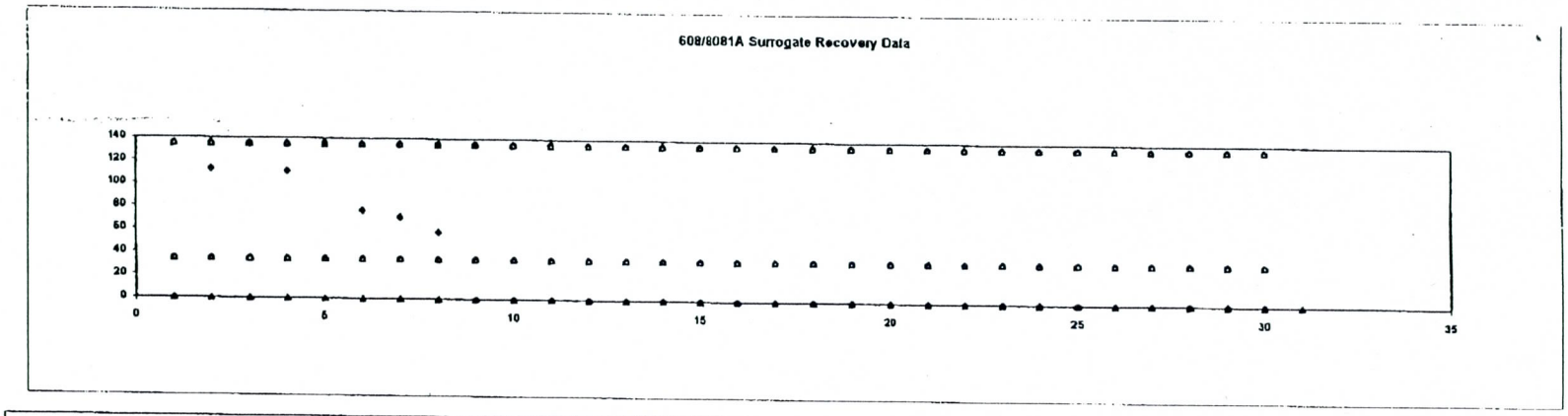
EPA Method 608/8081A
Surrogate Recovery Chart / Retention Time Windows

Batch: 990805
Date: 8/8/99

Initials:
Instrument ID: GC/ECD#2D



Analyte	0.0025 d53820	0.005 d53830	0.01 d53830	0.02 d53850	0.05 d53860	0.1 d53870	0.2 d53880	LCS d54130	MS d54340	CCV d54220	CCV d54210	Mean RT	Standard Deviation*	Retention Time Window (Mean RT +/- (3 x Std. Dev.)) From	To
	Retention Time Window Data														
Hexachlorobenzene	6.71	6.71	6.70	6.71	6.70	6.70	6.70			6.71	6.71	6.706	0.005	6.69	6.72
alpha-BHC	7.73	7.73	7.73	7.73	7.72	7.72	7.73	7.71	7.70	7.73	7.72	7.723	0.010	7.69	7.75
gamma-BHC	8.61	8.61	8.61	8.61	8.61	8.61	8.61	8.59	8.59	8.61	8.61	8.606	0.008	8.58	8.63
Heptachlor	9.01	9.01	9.01	9.01	9.01	9.01	9.01	8.99	8.99	9.01	9.01	9.006	0.008	8.98	9.03
Aldrin	9.55	9.55	9.55	9.55	9.55	9.55	9.55	9.53	9.53	9.55	9.55	9.546	0.008	9.52	9.57
beta-BHC	10.24	10.24	10.24	10.24	10.23	10.23	10.23	10.22	10.21	10.23	10.23	10.231	0.009	10.20	10.26
delta-BHC	10.69	10.68	10.69	10.68	10.68	10.68	10.68	10.67	10.66	10.68	10.68	10.679	0.008	10.65	10.70
Heptachlor epoxide	11.03	11.03	11.03	11.03	11.03	11.03	11.03	11.01	11.00	11.03	11.02	11.025	0.010	10.99	11.06
Endosulfan I	11.54	11.54	11.54	11.54	11.54	11.54	11.54	11.52	11.52	11.54	11.54	11.536	0.008	11.51	11.56
gamma-Chlordane	11.66	11.66	11.66	11.66	11.66	11.66	11.66			11.66	11.65	11.659	0.003	11.65	11.67
alpha-Chlordane	11.81	11.81	11.81	11.81	11.81	11.81	11.81			11.81	11.81	11.810	0.000	11.81	11.81
4,4'-DDE	11.96	11.96	11.96	11.96	11.95	11.95	11.96			11.95	11.95	11.956	0.005	11.94	11.97
Dieldrin	12.27	12.27	12.27	12.27	12.27	12.27	12.27	12.25	12.25	12.27	12.27	12.266	0.008	12.24	12.29
Endrin	12.68	12.67	12.68	12.67	12.67	12.67	12.67	12.65	12.65	12.67	12.67	12.668	0.010	12.64	12.70
4,4'-DDD	13.49	13.49	13.49	13.49	13.49	13.49	13.49	13.47	13.46	13.49	13.49	13.485	0.010	13.45	13.52
Endosulfan II	13.63	13.62	13.62	13.62	13.62	13.62	13.62	13.60	13.60	13.62	13.62	13.617	0.009	13.59	13.64
4,4'-DDT	13.80	13.80	13.80	13.80	13.79	13.79	13.79	13.77	13.77	13.79	13.79	13.790	0.011	13.76	13.82
Endrin Aldehyde	14.43	14.43	14.43	14.43	14.42	14.42	14.42	14.40	14.40	14.42	14.42	14.420	0.011	14.39	14.45
Methoxychlor	15.01	15.01	15.01	15.01	15.01	15.01	15.01	14.98	14.97	15.01	15.01	15.004	0.014	14.96	15.05
Endosulfan Sulfate	15.02	15.03	15.03	15.03	15.03	15.03	15.02	15.00	14.99	15.02	15.02	15.020	0.013	14.98	15.06
Endrin Ketone	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.73	15.73	15.75	15.75	15.748	0.008	15.72	15.77
Permethion I	16.43	16.43	16.43	16.43	16.43	16.43	16.43			16.43	16.43	16.430	0.000	16.43	16.43
Permethion I	16.67	16.67	16.67	16.67	16.67	16.67	16.67			16.67	16.67	16.670	0.000	16.67	16.67

8-13-99; 2:39PM;ALPHA ANALYTICAL BOLIN LABS ;1775355040 6 # 9/ 30
Received Time Aug. 13. 2:30PM

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Batch: 980805
Date: 8/8/99

Initials: d
Instrument ID: GC/ECD#2D

Analyte	Initial Calibration: Calibration Factors (Conc./Area) 0.025 d53930	0.05 d53940	0.1 d53940	0.25 d53960	0.5 d53970	1.0 d53980	1.5 d53990	2.5 d54000	Mean	RSD* %	Coefficient of Determination	Continuing Calibration Verification: 18/60 CCV 0.1NG/UL Conc µg/L	Rec. Amt. µg/L	Rec %	18/60 CCV 1.0NG/UL Conc. µg/L	Rec. Amt. µg/L	Rec. %	
1016-1	1.31E-06	1.73E-06	1.93E-06	2.13E-06	2.49E-06	3.07E-06	3.43E-06	4.00E-06	2.30E-06	32.6		0.1	0.097	97	1.0	1.021	102	
1016-2	5.31E-07	7.18E-07	9.57E-07	1.14E-06	1.37E-06	1.73E-06	1.98E-06	2.35E-06	1.20E-06	43.7		0.1	0.093	93	1.0	1.022	102	Accuracy
1016-3	2.11E-06	2.76E-06	3.31E-06	3.59E-06	4.02E-06	4.69E-06	5.14E-06	5.82E-06	3.68E-06	28.9		0.1	0.095	95	1.0	1.011	101	Range of
1016-4	1.35E-06	1.82E-06	2.27E-06	2.52E-06	2.99E-06	3.59E-06	4.03E-06	5.82E-06	2.85E-06	35.9		0.1	0.093	93	1.0	1.011	101	Acceptability
1016-5	1.72E-06	2.41E-06	3.30E-06	3.42E-06	4.20E-06	4.90E-06	5.65E-06	6.12E-06	3.64E-06	37.0		0.1	0.088	88	1.0	1.024	102	85-115%
1016-6	3.16E-07	4.34E-07	5.18E-07	6.14E-07	7.48E-07	9.73E-07	1.08E-06	1.26E-06	6.69E-07	42.0		0.1	0.097	97	1.0	0.999	100	85-115%
1016-7	5.80E-07	8.32E-07	1.03E-06	1.20E-06	1.45E-06	1.78E-06	2.02E-06	2.36E-06	1.27E-06	40.5		0.1	0.095	95	1.0	1.005	100	85-115%
1016-8	8.55E-07	1.18E-06	1.39E-06	1.53E-06	1.81E-06	2.18E-06	2.40E-06	2.75E-06	1.62E-06	33.6		0.1	0.093	93	1.0	0.998	100	85-115%
1016-9	6.83E-07	9.19E-07	1.09E-06	1.22E-06	1.49E-06	1.81E-06	2.04E-06	2.35E-06	1.32E-06	36.7		0.1	0.090	90	1.0	1.000	100	85-115%
1016-10	7.21E-07	1.01E-06	1.14E-06	1.28E-06	1.64E-06	1.82E-06	2.04E-06	2.32E-06	1.38E-06	34.1		0.1	0.092	92	1.0	0.985	98	85-115%
1260-1	5.95E-07	8.13E-07	9.09E-07	1.05E-06	1.26E-06	1.56E-06	1.75E-06	2.01E-06	1.13E-06	36.5		0.1	0.090	90	1.0	0.950	95	85-115%
1260-2	1.09E-06	1.65E-06	1.70E-06	1.90E-06	2.28E-06	2.77E-06	1.55E-06	1.77E-06	1.85E-06	29.3		0.1	0.088	88	1.0	0.951	95	85-115%
1260-3	1.07E-06	1.44E-06	1.65E-06	1.78E-06	2.14E-06	2.61E-06	2.90E-06	3.24E-06	1.84E-06	33.5		0.1	0.085	85	1.0	0.947	95	85-115%
1260-4	3.56E-07	5.05E-07	6.78E-07	6.82E-07	7.85E-07	9.61E-07	1.05E-06	1.20E-06	7.04E-07	36.6		0.1	0.088	88	1.0	0.933	93	85-115%
1260-5	9.97E-07	1.31E-06	1.49E-06	1.65E-06	1.99E-06	2.41E-06	2.65E-06	3.00E-06	1.78E-06	33.5		0.1	0.083	83	1.0	0.911	91	85-115%
1260-6	1.03E-06	1.58E-06	1.97E-06	2.59E-06	2.76E-06	3.33E-06	3.61E-06	4.05E-06	2.41E-06	38.9		0.1	0.083	83	1.0	0.896	90	85-115%
1260-7	8.41E-07	1.11E-06	1.25E-06	1.38E-06	1.56E-06	1.88E-06	2.04E-06	2.26E-06	1.44E-06	28.4		0.1	0.085	85	1.0	0.890	89	85-115%
1260-8	1.15E-06	1.54E-06	2.88E-06	1.92E-06	3.59E-06	4.28E-06	4.64E-06	5.14E-06	2.86E-06	47.8		0.1	0.117	117	1.0	0.977	98	85-115%
1260-9	4.83E-07	6.15E-07	7.29E-07	8.03E-07	8.20E-07	1.10E-06	1.19E-06	1.30E-06	8.34E-07	30.6		0.1	0.095	95	1.0	0.951	95	85-115%
1260-10	6.74E-07	6.88E-07	9.42E-07	1.09E-06	1.18E-06	1.41E-06	1.52E-06	1.63E-06	1.07E-06	30.6		0.1	0.075	75	1.0	1.161	116	85-115%
							Average %RSD			35.5		Average Recovery %		91	Average Recovery %		98	85-115%

Method 608

Initial Calibration Criteria

Prepare a calibration curve using a minimum of three calibration points. Alternatively, if the RSD <10%, linearity through the origin and quantitation using the Average Response Factor may be used.

Calibration Verification Criteria

A Calibration Verification Standard must be analyzed daily. The CVS is acceptable if the response of each analyte is within 15% of its true value.

Method 8082

If the RSD of an analyte is <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may be used.
If the RSD for one or more analytes exceeds 20%, but the average RSD of all analytes is still <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may still be used
If the average RSD of all analytes exceeds 20%, linearity through the origin may not be used. The use of a linear regression not forced through zero may be used if the coefficient of determination >= 0.99.
Alternatively, a calibration curve may be prepared. A second order (quadratic) calibration curve must have a minimum of six calibration points. The curve cannot be forced through the origin or used as a calibration point.
The coefficient of determination of an acceptable calibration curve must be >= 0.99.

Calibration Verification Criteria

A Calibration Verification Standard must be analyzed at the beginning of each 12 hour shift. The CVS is acceptable if the recovery is within 15% of the theoretical value.
If this criteria is exceeded for one or more analytes, but the average response of all analytes is within 15% of their true values, the CVS is acceptable.

Calibration Type:
8 point Quadratic

EPA Method 8082

8-13-99; 4:39PM;ALPHA ANALYTICAL 775 355 0406 BOIN LABS # 11/ 30
Received Time Aug. 13. 2:30PM

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EPA Method 608/8081A
QC Summary

85

Batch: 990805
Date: 8/8/99

Initials: _____
Instrument ID: GC/ECD#2D

Analyte	LRB		LCS BLL99080542-21A PEST			LCSD BLL99080542-22A PEST			Precision	0			Accuracy	Comments
	Conc. µg/L	R.L. µg/L	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	RPD %	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Range of Acceptability*	
gamma-BHC	ND	0.05	5.0	3.552	71	5.0	3.764	75	5.8	1.0	0.000	0	32-127	
Aldrin	ND	0.05	5.0	3.540	71	5.0	3.638	73	2.7	1.0	0.000	0	42-122	
Heptachlor epoxide	ND	0.05	5.0	3.702	74	5.0	3.959	79	6.7	1.0	0.000	0	37-142	
Dieldrin	ND	0.10	5.0	3.591	72	5.0	3.741	75	4.1	1.0	0.000	0	36-146	
Endrin	ND	0.10	5.0	3.639	73	5.0	3.856	77	5.8	1.0	0.000	0	30-147	
4,4'-DDT	ND	0.10	5.0	3.147	63	5.0	3.428	69	8.8	1.0	0.000	0	25-160	

* DQOS are derived from EPA Methods 608

Endrin Breakdown: 10%
DDT Breakdown: 13%

Surrogate Recovery
DBC Limits: 35-135%

AAI ID	DBC % Rec.		AAI ID	DBC % Rec.		AAI ID	DBC % Rec	
MBLK BLL99080542-20A	103							
LCS BLL99080542-21A PEST	117							
LCSD BLL99080542-22A PEST	117							
SAMP BLL99080542-24A (6379-1)	106							

DO: Diluted out

Received Time Aug. 13. 2:30PM

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8-13-99; 4:33PM;ALPHA ANALYTICAL BOLIN LABS ;17753550406 # 14/ 30

EPA Method 608/8081A
Calibration Factor / Continuing Calibration

Batch: 990805
Date: 8/8/99

Initials:
Instrument ID: GC/ECD#20

Analyte	Initial Calibration: Calibration Factors (Conc./Area) 0.0025 d53820	0.005 d53830	0.01 d53830	0.02 d53850	0.05 d53860	0.1 d53870	0.2 d53880	Mean	RSD* %	Coefficient of Determination
Hexachlorobenzene	3.62E-08	3.94E-08	4.22E-08	4.69E-08	5.80E-08	8.78E-08	8.30E-08	5.34E-08	32.1	
alpha-BHC	4.24E-08	4.18E-08	4.08E-08	4.04E-08	4.65E-08	5.21E-08	6.22E-08	4.66E-08	17.2	
gamma-BHC	4.10E-08	4.09E-08	4.12E-08	4.36E-08	5.10E-08	5.75E-08	6.82E-08	4.91E-08	21.4	
Heptachlor	3.61E-08	3.70E-08	3.84E-08	4.26E-08	5.12E-08	5.82E-08	7.03E-08	4.77E-08	27.0	
Aldrin	4.37E-08	4.46E-08	4.46E-08	4.71E-08	5.48E-08	6.24E-08	7.45E-08	5.31E-08	22.0	
beta-BHC	6.63E-08	7.07E-08	7.46E-08	8.20E-08	9.80E-08	1.12E-07	1.34E-07	9.12E-08	27.4	
delta-BHC	6.58E-08	6.39E-08	6.22E-08	6.54E-08	7.29E-08	7.98E-08	9.37E-08	7.19E-08	15.8	
Heptachlor epoxide	4.80E-08	4.69E-08	4.69E-08	5.19E-08	6.06E-08	6.84E-08	8.23E-08	5.79E-08	23.3	
Endosulfan I	5.01E-08	5.12E-08	5.16E-08	5.62E-08	6.52E-08	7.39E-08	8.81E-08	6.23E-08	23.0	
gamma-Chlordane	4.69E-08	4.72E-08	4.86E-08	5.22E-08	6.08E-08	6.87E-08	8.16E-08	5.80E-08	22.7	
alpha-Chlordane	4.57E-08	4.68E-08	4.84E-08	5.31E-08	6.25E-08	7.12E-08	8.51E-08	5.90E-08	25.1	
4,4'-DDE	5.62E-08	5.48E-08	5.39E-08	5.67E-08	6.47E-08	7.29E-08	8.66E-08	6.37E-08	19.1	
Dieldrin	5.41E-08	5.46E-08	5.43E-08	5.68E-08	6.43E-08	7.13E-08	8.34E-08	6.27E-08	17.8	
Endrin	6.46E-08	6.67E-08	6.57E-08	7.09E-08	7.90E-08	9.00E-08	1.06E-07	7.76E-08	20.1	
4,4'-DDD	7.01E-08	7.10E-08	6.98E-08	7.04E-08	8.00E-08	8.91E-08	1.04E-07	7.93E-08	16.6	
Endosulfan II	5.89E-08	6.29E-08	6.39E-08	6.91E-08	7.88E-08	8.76E-08	1.02E-07	7.47E-08	20.8	
4,4'-DDT	9.02E-08	9.02E-08	9.00E-08	9.81E-08	1.07E-07	1.15E-07	1.30E-07	1.03E-07	14.9	
Endrin Aldehyde	9.18E-08	7.96E-08	8.06E-08	8.04E-08	8.87E-08	9.48E-08	1.07E-07	8.90E-08	11.3	
Methoxychlor	1.26E-07	1.28E-07	1.34E-07	1.50E-07	1.67E-07	1.81E-07	2.24E-07	1.59E-07	22.2	
Endosulfan Sulfate	1.02E-07	1.09E-07	1.12E-07	1.18E-07	1.32E-07	1.47E-07	1.61E-07	1.26E-07	17.3	
Endrin Ketone	8.70E-08	8.55E-08	8.43E-08	8.69E-08	9.67E-08	1.03E-07	1.17E-07	9.44E-08	13.0	
Permethion I	9.09E-08	9.43E-08	9.89E-08	1.09E-07	1.31E-07	1.51E-07	1.81E-07	1.22E-07	27.6	
Permethion II	2.01E-07	2.09E-07	2.16E-07	2.29E-07	2.63E-07	2.94E-07	3.44E-07	2.51E-07	21.1	
							Average %RSD		20.8	

Continuing Calibration Verification: 8081 CCV 0.1NG/UL Conc. µg/L	Rec. Amt µg/L	Rec. %	8081 CCV 0.02NG/UL Conc µg/L	Rec. Amt µg/L	Rec %	Accuracy Range of Acceptability
0.1	0.101	101	0.02	0.020	100	85-115%
0.1	0.100	100	0.02	0.019	97	85-115%
0.1	0.091	91	0.02	0.019	93	85-115%
0.1	0.100	100	0.02	0.019	95	85-115%
0.1	0.099	99	0.02	0.019	93	85-115%
0.1	0.095	95	0.02	0.018	91	85-115%
0.1	0.098	98	0.02	0.018	92	85-115%
0.1	0.097	97	0.02	0.018	92	85-115%
0.1	0.096	96	0.02	0.017	87	85-115%
0.1	0.095	95	0.02	0.017	87	85-115%
0.1	0.095	95	0.02	0.017	85	85-115%
0.1	0.095	95	0.02	0.017	84	85-115%
0.1	0.095	95	0.02	0.017	84	85-115%
0.1	0.101	101	0.02	0.017	84	85-115%
0.1	0.096	96	0.02	0.017	85	85-115%
0.1	0.092	92	0.02	0.017	85	85-115%
0.1	0.085	85	0.02	0.016	79	85-115%
0.1	0.087	87	0.02	0.017	83	85-115%
0.1	0.094	94	0.02	0.017	85	85-115%
0.1	0.086	86	0.02	0.018	88	85-115%
0.1	0.087	87	0.02	0.016	81	85-115%
0.1	0.855	86	0.02	0.181	90	85-115%
0.1	0.827	83	0.02	0.176	88	85-115%
Average Recovery %		94	Average Recovery %		88	85-115%

Method 608
Initial Calibration Criteria
Prepare a calibration curve using a minimum of three calibration points. Alternatively, if the RSD <10%, linearity through the origin and quantitation using the Average Response Factor may be used.
Calibration Verification Criteria
A Calibration Verification Standard must be analyzed daily. The CVS is acceptable if the response of each analyte is within 15% of its true value.

Method 8081
Initial Calibration Criteria
*If the RSD of an analyte is <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may be used.
If the RSD for one or more analytes exceeds 20%, but the average RSD of all analytes is still <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may still be used
If the average RSD of all analytes exceeds 20%, linearity through the origin may not be used. The use of a linear regression not forced through zero may be used if the coefficient of determination >= 0.99.
Alternatively, a calibration curve may be prepared. A second order (quadratic) calibration curve must have a minimum of six calibration points. The curve cannot be forced through the origin or used as a calibration point.
The coefficient of determination of an acceptable calibration curve must be >= 0.99.
Calibration Verification Criteria
The CVS is acceptable if the response of each analyte is within 15% of its true value.
If this criteria is exceeded for one or more analytes, but the average response of all analytes is within 15% of their true values, the CVS is acceptable.

Calibration Type: 7 point Quadratic

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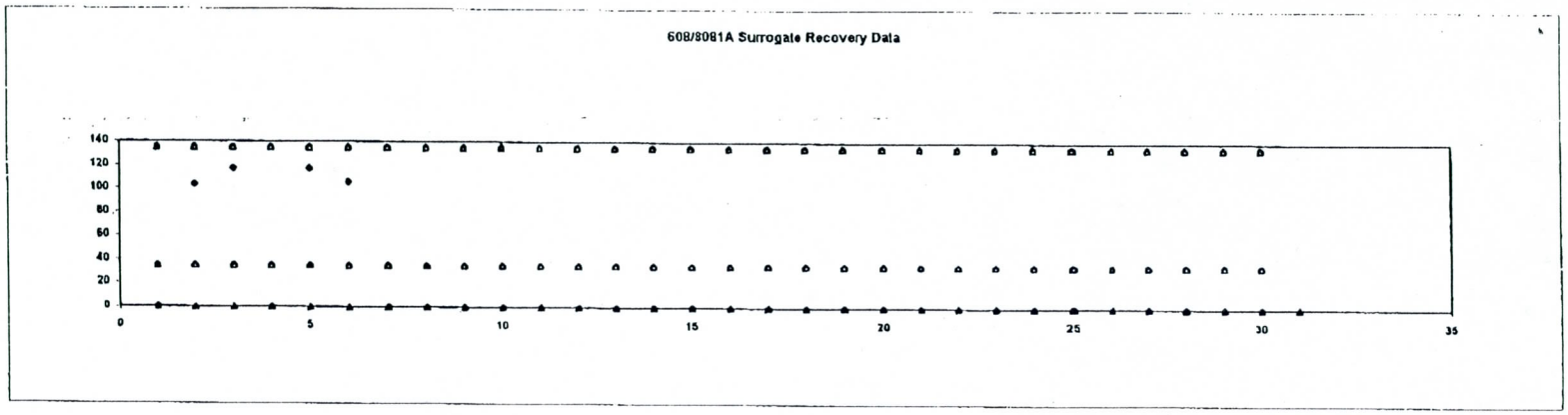
EPA Method 608/8081A
Surrogate Recovery Chart / Retention Time Windows

Batch: 990805
Date: 8/8/99

Initials: US
Instrument ID: GC/ECD#2D



Analyte	Retention Time Window Data													Retention Time Window (Mean RT +/- (3 x Std. Dev.))	
	0.0025 d53820	0.005 d53830	0.01 d53830	0.02 d53850	0.05 d53860	0.1 d53870	0.2 d53880	LCS d54080	MS d54320	CCV d54220	CCV d54210	Mean RT	Standard Deviation*	From	To
Hexachlorobenzene	6.71	6.71	6.70	6.71	6.70	6.70	6.70			6.71	6.71	6.706	0.005	6.69	6.72
alpha-BHC	7.73	7.73	7.73	7.73	7.72	7.72	7.73	7.71		7.73	7.72	7.726	0.007	7.70	7.75
gamma-BHC	8.61	8.61	8.61	8.61	8.61	8.61	8.61	8.60		8.61	8.61	8.609	0.003	8.60	8.62
Heptachlor	9.01	9.01	9.01	9.01	9.01	9.01	9.01	8.99		9.01	9.01	9.008	0.006	8.99	9.03
Aldrin	9.55	9.56	9.55	9.55	9.56	9.55	9.55	9.54		9.55	9.55	9.549	0.003	9.54	9.56
beta-BHC	10.24	10.24	10.24	10.24	10.23	10.23	10.23	10.22		10.23	10.23	10.233	0.007	10.21	10.25
delta-BHC	10.69	10.68	10.69	10.68	10.88	10.68	10.68	10.67		10.68	10.68	10.681	0.006	10.68	10.70
Heptachlor epoxide	11.03	11.03	11.03	11.03	11.03	11.03	11.03	11.01		11.03	11.02	11.027	0.007	11.01	11.05
Endosulfan I	11.54	11.54	11.54	11.54	11.54	11.54	11.54	11.53		11.54	11.54	11.539	0.003	11.53	11.55
gamma-Chlordane	11.66	11.66	11.66	11.66	11.86	11.66	11.66			11.66	11.65	11.659	0.003	11.65	11.67
alpha-Chlordane	11.81	11.81	11.81	11.81	11.81	11.81	11.81			11.81	11.81	11.810	0.000	11.81	11.81
4,4'-DDE	11.96	11.96	11.96	11.96	11.95	11.95	11.96			11.95	11.95	11.956	0.005	11.94	11.97
Dieldrin	12.27	12.27	12.27	12.27	12.27	12.27	12.27	12.26		12.27	12.27	12.269	0.003	12.26	12.28
Endrin	12.68	12.67	12.68	12.67	12.67	12.67	12.67	12.66		12.67	12.67	12.671	0.006	12.65	12.69
4,4'-DDD	13.49	13.49	13.49	13.49	13.49	13.49	13.49	13.47		13.49	13.49	13.488	0.006	13.47	13.51
Endosulfan II	13.63	13.62	13.62	13.62	13.62	13.62	13.62	13.61		13.62	13.62	13.620	0.005	13.61	13.63
4,4'-DDT	13.80	13.80	13.80	13.80	13.79	13.79	13.79	13.78		13.79	13.79	13.793	0.007	13.77	13.81
Endrin Aldehyde	14.43	14.43	14.43	14.43	14.42	14.42	14.42	14.41		14.42	14.42	14.423	0.007	14.40	14.44
Methoxychlor	15.01	15.01	15.01	15.01	15.01	15.01	15.01	14.98		15.01	15.01	15.007	0.009	14.98	15.04
Endosulfan Sulfate	15.02	15.03	15.03	15.03	15.03	15.03	15.02	15.01		15.02	15.02	15.024	0.007	15.00	15.04
Endrin Ketone	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.74		15.75	15.75	15.749	0.003	15.74	15.76
Permethion I	16.43	16.43	16.43	16.43	16.43	16.43	16.43			16.43	16.43	16.430	0.000	16.43	16.43
Permethion I	16.67	16.67	16.67	16.67	16.67	16.67	16.67			16.67	16.67	16.670	0.000	16.67	16.67

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EPA Method 8082
QC Summary

Batch: 990805
Date: 8/8/99

Initials: SP
Instrument ID: GC/ECD#2D

Analyte	LRB Conc. µg/L	LRB R.L. µg/L	LCS BLL99080542-23A PCB Spike Amt. µg/L	LCS Rec. Amt. µg/L	LCS Rec. %	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Precision RPD %	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Accuracy Range of Acceptability*	Comments
1016-1	ND	1.00	10.0	8.268	83	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-2	ND	1.00	10.0	9.128	91	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-3	ND	1.00	10.0	9.161	92	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-4	ND	1.00	10.0	8.851	89	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-5	ND	1.00	10.0	11.431	114	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-6	ND	1.00	10.0	9.388	94	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-7	ND	1.00	10.0	10.005	100	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-8	ND	1.00	10.0	9.501	95	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-9	ND	1.00	10.0	9.630	96	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-10	ND	1.00	10.0	8.216	82	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-1	ND	1.00	10.0	10.291	103	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-2	ND	1.00	10.0	10.164	102	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-3	ND	1.00	10.0	13.258	133	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-4	ND	1.00	10.0	9.440	94	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-5	ND	1.00	10.0	11.327	113	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-6	ND	1.00	10.0	11.360	114	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-7	ND	1.00	10.0	9.292	93	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-8	ND	1.00	10.0	8.628	86	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-9	ND	1.00	10.0	10.145	101	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-10	ND	1.00	10.0	11.686	117	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	

* DQO'S are derived from EPA Methods 8082 (QA Acceptance Criteria)
*** DQO'S are derived from laboratory data.

Surrogate Recovery
DBC Limits: 35-135%

AAI ID	DBC % Rec.		AAI ID	DBC % Rec.		AAI ID	DBC % Rec.	
MBLK BLL99080542-20A	102							
LCS BLL99080542-23A PCB	89							
SAMP BLL99080542-24A (6379-1)	107							

DO; Diluted out

EPA Method 8082

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Batch: 990805
Date: 8/8/99

Initials:
Instrument ID: GC/ECD#2D

Analyte	Initial Calibration: Calibration Factors (Conc./Area) 0.025 d53930	0.05 d53940	0.1 d53940	0.25 d53960	0.5 d53970	1.0 d53980	1.5 d53990	2.5 d54000	Mean	RSD* %	Coefficient of Determination	Continuing Calibration Verification: 16/60 CCV 0.1NG/UL Conc. µg/L	Rec. Amt. µg/L	Rec. %	16/60 CCV 1.0NG/UL Conc. µg/L	Rec. Amt. µg/L	Rec %	
1016-1	1.31E-06	1.73E-06	1.93E-06	2.13E-06	2.49E-06	3.07E-06	3.43E-06	4.00E-06	2.30E-06	32.6		0.1	0.097	97	1.0	1.021	102	
1016-2	6.31E-07	7.19E-07	8.67E-07	1.14E-06	1.37E-06	1.73E-06	1.98E-06	2.36E-06	1.20E-06	43.7		0.1	0.093	93	1.0	1.022	102	Accuracy
1016-3	2.11E-06	2.78E-06	3.31E-06	3.59E-06	4.02E-06	4.69E-06	5.14E-06	5.82E-06	3.88E-06	28.9		0.1	0.095	95	1.0	1.011	101	Range of
1016-4	1.35E-06	1.82E-06	2.27E-06	2.52E-06	2.89E-06	3.58E-06	4.03E-06	5.82E-06	2.85E-06	35.9		0.1	0.093	93	1.0	1.011	101	Acceptability
1016-5	1.72E-06	2.41E-06	3.30E-06	3.42E-06	4.20E-06	4.90E-06	5.55E-06	6.12E-06	3.84E-06	37.0		0.1	0.088	88	1.0	1.024	102	85-115%
1016-6	3.18E-07	4.34E-07	5.18E-07	6.14E-07	7.48E-07	9.73E-07	1.08E-06	1.26E-06	6.69E-07	42.0		0.1	0.097	97	1.0	0.989	100	85-115%
1016-7	5.80E-07	8.32E-07	1.03E-06	1.20E-06	1.45E-06	1.78E-06	2.02E-06	2.38E-06	1.27E-06	40.5		0.1	0.095	95	1.0	1.005	100	85-115%
1016-8	8.55E-07	1.18E-06	1.38E-06	1.53E-06	1.81E-06	2.16E-06	2.40E-06	2.75E-06	1.62E-06	33.8		0.1	0.093	93	1.0	0.996	100	85-115%
1016-9	6.63E-07	9.19E-07	1.09E-06	1.22E-06	1.49E-06	1.81E-06	2.04E-06	2.35E-06	1.32E-06	36.7		0.1	0.090	90	1.0	1.000	100	85-115%
1016-10	7.21E-07	1.01E-06	1.14E-06	1.28E-06	1.54E-06	1.82E-06	2.04E-06	2.32E-06	1.36E-06	34.1		0.1	0.092	92	1.0	0.985	98	85-115%
1260-1	5.95E-07	8.13E-07	9.09E-07	1.05E-06	1.26E-06	1.58E-06	1.75E-06	2.01E-06	1.13E-06	38.5		0.1	0.090	90	1.0	0.950	95	85-115%
1260-2	1.09E-06	1.65E-06	1.70E-06	1.90E-06	2.28E-06	2.77E-06	1.56E-06	1.77E-06	1.85E-06	29.3		0.1	0.088	88	1.0	0.951	95	85-115%
1260-3	1.07E-06	1.44E-06	1.65E-06	1.78E-06	2.14E-06	2.61E-06	2.90E-06	3.24E-06	1.94E-06	33.5		0.1	0.095	95	1.0	0.847	85	85-115%
1260-4	3.56E-07	5.05E-07	5.78E-07	6.92E-07	7.85E-07	9.61E-07	1.06E-06	1.20E-06	7.04E-07	35.8		0.1	0.086	86	1.0	0.833	83	85-115%
1260-5	9.97E-07	1.31E-06	1.49E-06	1.65E-06	1.99E-06	2.41E-06	2.65E-06	3.00E-06	1.78E-06	35.5		0.1	0.083	83	1.0	0.811	81	85-115%
1260-6	1.03E-06	1.58E-06	1.87E-06	2.59E-06	2.76E-06	3.33E-06	3.61E-06	4.05E-06	2.41E-06	38.8		0.1	0.083	83	1.0	0.898	90	85-115%
1260-7	8.41E-07	1.11E-06	1.25E-06	1.38E-06	1.56E-06	1.88E-06	2.04E-06	2.28E-06	1.44E-06	29.4		0.1	0.085	85	1.0	0.890	89	85-115%
1260-8	1.15E-06	1.56E-06	2.88E-06	1.82E-06	3.59E-06	4.28E-06	4.64E-06	5.14E-06	2.86E-06	47.8		0.1	0.117	117	1.0	0.877	88	85-115%
1260-9	4.83E-07	6.15E-07	7.29E-07	8.03E-07	9.20E-07	1.10E-06	1.19E-06	1.30E-06	8.34E-07	30.5		0.1	0.095	95	1.0	0.951	95	85-115%
1260-10	6.74E-07	8.88E-07	9.42E-07	1.09E-06	1.18E-06	1.41E-06	1.52E-06	1.63E-06	1.07E-06	30.6		0.1	0.075	75	1.0	1.161	116	85-115%
							Average %RSD			35.5		Average Recovery %		91	Average Recovery %		98	85-115%

Method 608
Initial Calibration Criteria
Prepare a calibration curve using a minimum of three calibration points. Alternatively, if the RSD <10%, linearity through the origin and quantitation using the Average Response Factor may be used.
Calibration Verification Criteria
A Calibration Verification Standard must be analyzed daily. The CVS is acceptable if the response of each analyte is within 15% of its true value.

Method 8082
If the RSD of an analyte is <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may be used.
If the RSD for one or more analytes exceeds 20%, but the average RSD of all analytes is still <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may still be used
If the average RSD of all analytes exceeds 20%, linearity through the origin may not be used. The use of a linear regression not forced through zero may be used if the coefficient of determination >= 0.99.
Alternatively, a calibration curve may be prepared. A second order (quadratic) calibration curve must have a minimum of six calibration points. The curve cannot be forced through the origin or used as a calibration point.
The coefficient of determination of an acceptable calibration curve must be >= 0.99.
Calibration Verification Criteria
A Calibration Verification Standard must be analyzed at the beginning of each 12 hour shift. The CVS is acceptable if the recovery is within 15% of the theoretical value.
If this criteria is exceeded for one or more analytes, but the average response of all analytes is within 15% of their true values, the CVS is acceptable.

Calibration Type:
8 point Quadratic

EPA Method 8082

Received Time Aug. 13. 2:30PM

Alpha Analytical, Inc.
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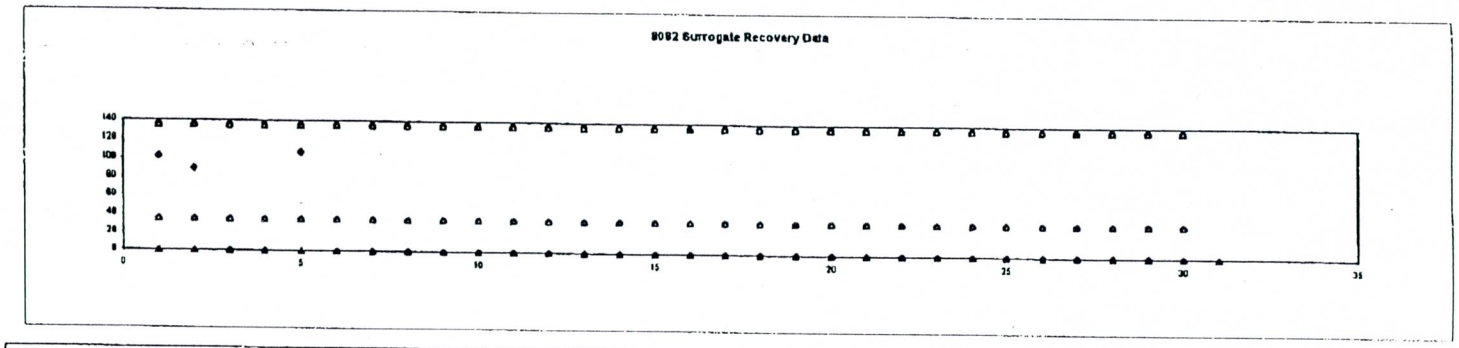
EPA Method 8082

Surrogate Recovery Chart / Retention Time Windows

Batch: 990805
Date: 8/8/99

Initials: sf
Instrument ID: GC/ECD#2D



Analyte	0.025 d53930	0.05 d53940	0.1 d53940	0.25 d53960	0.5 d53970	1.0 d53980	1.5 d53990	2.5 d54000	LCS d54110	MS	CCV d54240	CCV d54250	Mean RT	Standard Deviation*	Retention Time Window (Mean RT +/- 3 x Std. Dev.) From	To
	Retention Time Window Data															
1016-1	6.93	6.93	6.93	6.93	6.92	6.92	6.92	6.92	6.92		6.93	6.93	6.925	0.005	6.91	6.94
1016-2	7.83	7.82	7.82	7.82	7.82	7.82	7.82	7.82	7.82		7.83	7.83	7.823	0.006	7.81	7.84
1016-3	8.25	8.25	8.25	8.25	8.24	8.24	8.24	8.24	8.24		8.26	8.26	8.246	0.007	8.23	8.27
1016-4	8.36	8.36	8.35	8.36	8.35	8.35	8.35	8.35	8.35		8.36	8.36	8.355	0.006	8.34	8.37
1016-5	8.62	8.62	8.62	8.62	8.61	8.61	8.62	8.61	8.61		8.63	8.63	8.618	0.008	8.60	8.64
1016-6	8.79	8.79	8.79	8.79	8.78	8.78	8.79	8.78	8.78		8.79	8.79	8.785	0.006	8.77	8.80
1016-7	9.09	9.08	9.08	9.08	9.08	9.08	9.08	9.08	9.08		9.09	9.09	9.083	0.005	9.07	9.10
1016-8	9.30	9.30	9.29	9.30	9.29	9.29	9.29	9.29	9.29		9.30	9.30	9.295	0.005	9.28	9.31
1016-9	10.06	10.06	10.05	10.06	10.05	10.06	10.05	10.05	10.05		10.06	10.06	10.055	0.005	10.04	10.07
1016-10	10.28	10.26	10.26	10.26	10.25	10.26	10.25	10.26	10.26		10.27	10.26	10.258	0.007	10.24	10.28
1260-1	12.48	12.46	12.46	12.46	12.45	12.45	12.46	12.46	12.45		12.47	12.46	12.458	0.007	12.44	12.48
1260-2	12.89	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88		12.89	12.89	12.883	0.005	12.87	12.90
1260-3	13.12	13.12	13.12	13.12	13.12	13.12	13.11	13.11	13.11		13.13	13.12	13.118	0.006	13.10	13.14
1260-4	13.55	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54		13.56	13.56	13.543	0.005	13.53	13.56
1260-5	13.69	13.69	13.68	13.68	13.68	13.68	13.68	13.68	13.68		13.69	13.69	13.684	0.005	13.67	13.70
1260-6	13.76	13.76	13.76	13.77	13.76	13.76	13.76	13.76	13.76		13.77	13.77	13.763	0.005	13.75	13.78
1260-7	14.26	14.26	14.26	14.25	14.25	14.26	14.25	14.25	14.26		14.26	14.28	14.254	0.006	14.24	14.27
1260-8	14.35	14.35	14.35	14.35	14.35	14.35	14.36	14.35	14.35		14.36	14.36	14.352	0.004	14.34	14.36
1260-9	14.77	14.77	14.77	14.77	14.77	14.77	14.77	14.77	14.77		14.78	14.78	14.772	0.004	14.76	14.78
1260-10	15.44	15.44	15.43	15.44	15.43	15.43	15.43	15.43	15.43		15.44	15.44	15.435	0.005	15.42	15.45

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EPA Method 608/8081A
QC Summary

Batch: 990805
Date: 8/7/99

Initials: GL
Instrument ID: GC/ECD#2D

Analyte	LRB		LCS BLL99080542-09A PEST			LCSD BLL99080542-10A PEST			Precision	MS BLL99080542-12MS (6358-1)			Accuracy	Comments
	Conc. µg/L	R.L. µg/L	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	RPD %	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Range of Acceptability*	
gamma-BHC	ND	0.05	5.0	4.183	84	5.0	4.275	85	2.2	5.0	3.106	62	32-127	
Aldrin	ND	0.05	5.0	4.266	85	5.0	4.398	88	3.0	5.0	3.303	66	42-122	
Heptachlor epoxide	ND	0.05	5.0	4.410	88	5.0	4.653	93	5.4	5.0	3.375	68	37-142	
Dieldrin	ND	0.10	5.0	4.393	88	5.0	4.601	92	4.8	5.0	3.621	72	36-146	
Endrin	ND	0.10	5.0	5.133	103	5.0	5.522	110	7.3	5.0	4.676	94	30-147	
4,4'-DDT	ND	0.10	5.0	3.182	64	5.0	3.410	68	6.9	5.0	2.744	55	25-160	

* DQOS are derived from EPA Methods 608

Endrin Breakdown: 6%
DDT Breakdown: 10%

Surrogate Recovery
DBC Limits: 35-135%

AAI ID	DBC % Rec.		AAI ID	DBC % Rec.		AAI ID	DBC % Rec.	
MBLK BLL99080542-01A	103		SAMP BLL99080542-18A (6337-5)	73				
LCS BLL99080542-09A PEST	124		SAMP BLL99080542-18A (6358-1)	87				
MS BLL99080542-12MS (6358-1)	10							
LCSD BLL99080542-10A PEST	129							
SAMP BLL99080542-13A (6312-2)	86							
SAMP BLL99080542-14A (6312-5)	40							
SAMP BLL99080542-15A (6312-8)	67							
SAMP BLL99080542-16A (6337-2)	50							
SAMP BLL99080542-17A (6337-4)	76							

DO: Diluted out

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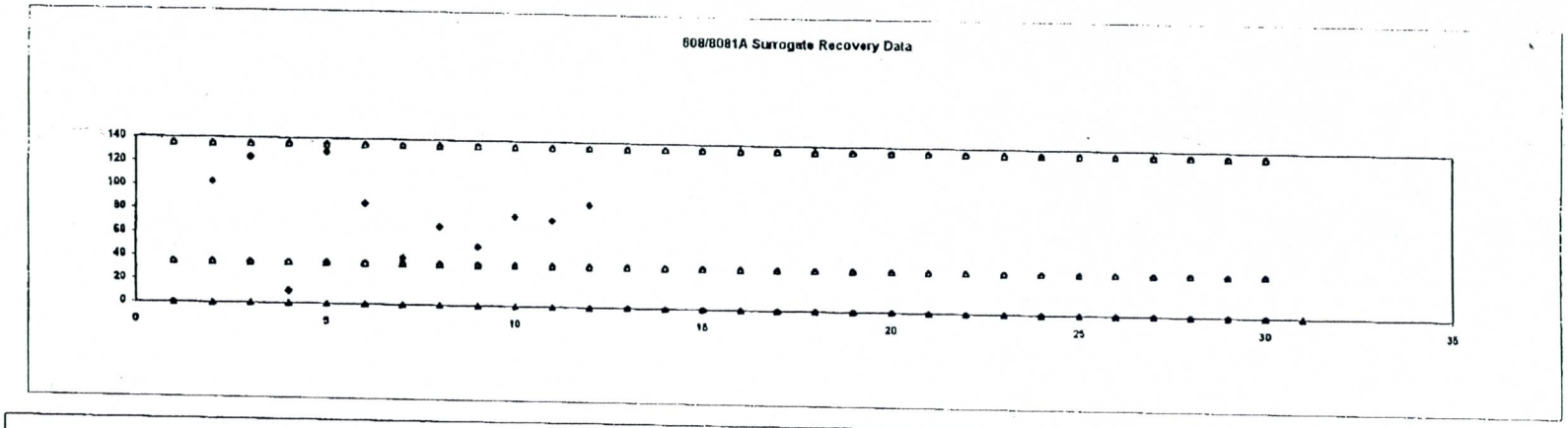
Cy

EPA Method 608/8081A
Surrogate Recovery Chart / Retention Time Windows

Batch: 990805
Date: 8/7/99

Initials: BB
Instrument ID: GC/ECD#2D



Analyte	Retention Time Window Data													Retention Time Window (Mean RT +/- (3 x Std. Dev.))	
	0.0025 d53270	0.005 d53280	0.01 d53280	0.02 d53300	0.05 d53310	0.1 d53320	0.2 d53330	LCS d53530	MS d54290	CCV d53780	CCV d53770	Mean RT	Standard Deviation*	From	To
Hexachlorobenzene	6.72	6.72	6.72	6.71	6.72	6.72	6.72			6.71	6.71	6.717	0.005	6.70	6.73
alpha-BHC	7.75	7.74	7.75	7.74	7.74	7.74	7.74	7.72	7.71	7.73	7.73	7.735	0.012	7.70	7.77
gamma-BHC	8.63	8.63	8.63	8.63	8.63	8.63	8.63	8.61	8.61	8.61	8.62	8.624	0.009	8.60	8.65
Heptachlor	9.03	9.03	9.03	9.03	9.03	9.03	9.03	9.00	9.00	9.01	9.01	9.021	0.013	8.98	9.06
Aldrin	9.57	9.57	9.58	9.57	9.57	9.57	9.57	9.55	9.56	9.56	9.56	9.565	0.009	9.54	9.59
beta-BHC	10.26	10.26	10.26	10.25	10.25	10.25	10.25	10.23	10.23	10.24	10.24	10.247	0.011	10.21	10.28
delta-BHC	10.71	10.70	10.71	10.70	10.70	10.70	10.70	10.67	10.67	10.69	10.69	10.695	0.014	10.65	10.74
Heptachlor epoxide	11.05	11.05	11.05	11.05	11.05	11.05	11.05	11.02	11.01	11.03	11.03	11.040	0.015	11.00	11.08
Endosulfan I	11.57	11.57	11.57	11.57	11.57	11.57	11.57	11.53	11.53	11.55	11.55	11.559	0.016	11.51	11.61
gamma-Chlordane	11.68	11.68	11.69	11.68	11.68	11.68	11.68			11.66	11.66	11.677	0.010	11.65	11.71
alpha-Chlordane	11.83	11.83	11.83	11.83	11.83	11.83	11.83			11.81	11.81	11.826	0.009	11.80	11.85
4,4'-DDE	11.98	11.98	11.99	11.98	11.98	11.98	11.98			11.96	11.96	11.977	0.010	11.05	12.01
Dieldrin	12.30	12.30	12.30	12.30	12.30	12.29	12.29	12.27	12.26	12.28	12.28	12.288	0.014	12.25	12.33
Endrin	12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.67	12.67	12.68	12.68	12.691	0.013	12.65	12.73
4,4'-DDD	13.51	13.51	13.51	13.61	13.51	13.51	13.51	13.48	13.47	13.49	13.49	13.500	0.015	13.46	13.54
Endosulfan II	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.61	13.61	13.63	13.63	13.639	0.016	13.59	13.69
4,4'-DDT	13.83	13.83	13.83	13.82	13.82	13.82	13.82	13.79	13.78	13.80	13.80	13.813	0.017	13.76	13.86
Endrin Aldehyde	14.45	14.45	14.45	14.45	14.45	14.45	14.45	14.41	14.41	14.43	14.43	14.439	0.016	14.39	14.49
Methoxychlor	15.04	15.04	15.04	15.04	15.04	15.03	15.03	14.99	14.99	15.01	15.01	15.024	0.020	14.96	15.08
Endosulfan Sulfate	15.05	15.05	15.05	15.05	15.05	15.05	15.05	15.01	15.01	15.03	15.03	15.039	0.016	14.99	15.09
Endrin Ketone	15.78	15.78	15.78	15.78	15.77	15.77	15.77	15.74	15.74	15.75	15.75	15.765	0.018	15.72	15.81
Permethion I	16.47	16.47	16.47	16.47	16.47	16.47	16.47			16.43	16.44	16.462	0.016	16.42	16.51
Permethion I	16.71	16.71	16.71	16.71	16.71	16.71	16.71			16.67	16.68	16.702	0.016	16.68	16.75

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EPA Method 608/8081A
Calibration Factor / Continuing Calibration

Batch: 990805
Date: 8/7/99

Initials: BY
Instrument ID: GC/ECD#2D

Analyte	Initial Calibration: Calibration Factors (Conc./Area) 0.0025 d53270	0.005 d53280	0.01 d53280	0.02 d53300	0.05 d53310	0.1 d53320	0.2 d53330	Mean	RSD* %	Coefficient of Determination
Hexachlorobenzene	3.65E-08	4.01E-08	4.40E-08	4.95E-08	6.03E-08	7.04E-08	8.41E-08	5.50E-08	31.8	
alpha-BHC	4.34E-08	4.44E-08	4.42E-08	4.38E-08	4.93E-08	5.46E-08	6.35E-08	4.90E-08	15.5	
gamma-BHC	4.40E-08	4.34E-08	4.50E-08	4.70E-08	5.40E-08	6.03E-08	6.98E-08	5.19E-08	19.3	
Heptachlor	3.93E-08	4.00E-08	4.23E-08	4.55E-08	5.31E-08	6.01E-08	7.08E-08	5.02E-08	23.6	
Aldrin	4.81E-08	4.82E-08	4.95E-08	5.16E-08	5.88E-08	6.57E-08	7.65E-08	5.69E-08	18.0	
beta-BHC	7.21E-08	7.67E-08	8.27E-08	9.01E-08	1.06E-07	1.20E-07	1.41E-07	9.84E-08	25.6	
delta-BHC	6.48E-08	6.55E-08	6.58E-08	6.36E-08	7.14E-08	7.96E-08	8.91E-08	7.14E-08	13.4	
Heptachlor epoxide	5.05E-08	5.11E-08	5.28E-08	5.57E-08	6.48E-08	7.33E-08	8.55E-08	6.20E-08	21.5	
Endosulfan I	5.59E-08	5.69E-08	5.93E-08	6.33E-08	7.15E-08	7.95E-08	9.15E-08	6.83E-08	19.5	
gamma-Chlordane	5.18E-08	5.27E-08	5.51E-08	5.92E-08	6.73E-08	7.47E-08	8.59E-08	6.38E-08	20.0	
alpha-Chlordane	5.15E-08	5.26E-08	5.54E-08	6.00E-08	6.91E-08	7.72E-08	8.92E-08	6.50E-08	21.8	
4,4'-DDE	6.38E-08	6.16E-08	6.22E-08	6.42E-08	7.10E-08	7.82E-08	8.96E-08	7.01E-08	14.8	
Dieldrin	6.18E-08	6.13E-08	6.24E-08	6.45E-08	7.12E-08	7.74E-08	8.69E-08	6.93E-08	14.0	
Endrin	8.46E-08	8.71E-08	8.53E-08	8.98E-08	1.01E-07	1.13E-07	1.26E-07	9.81E-08	16.2	
4,4'-DDD	8.69E-08	8.70E-08	8.77E-08	8.89E-08	9.68E-08	1.04E-07	1.17E-07	9.54E-08	11.9	
Endosulfan II	6.50E-08	6.94E-08	7.21E-08	7.75E-08	8.70E-08	9.52E-08	1.07E-07	8.19E-08	18.6	
4,4'-DDT	8.49E-08	8.54E-08	8.71E-08	8.87E-08	9.83E-08	1.06E-07	1.17E-07	9.53E-08	12.8	
Endrin Aldehyde	7.48E-08	7.73E-08	7.94E-08	8.22E-08	8.99E-08	9.58E-08	1.06E-07	8.65E-08	13.1	
Methoxychlor	1.12E-07	1.23E-07	1.23E-07	1.40E-07	1.58E-07	1.76E-07	2.10E-07	1.49E-07	23.6	
Endosulfan Sulfate	1.07E-07	1.05E-07	1.19E-07	1.21E-07	1.38E-07	1.46E-07	1.55E-07	1.27E-07	15.2	
Endrin Ketone	8.78E-08	8.64E-08	8.76E-08	9.13E-08	1.00E-07	1.07E-07	1.19E-07	9.71E-08	12.7	
Permethion I	8.60E-08	8.99E-08	9.82E-08	1.10E-07	1.29E-07	1.45E-07	1.69E-07	1.18E-07	26.2	
Permethion II	1.92E-07	1.99E-07	2.12E-07	2.30E-07	2.64E-07	2.90E-07	3.31E-07	2.46E-07	21.1	
							Average %RSD		18.7	

Continuing Calibration Verification: 8081 CCV 0.1NG/UL Conc. µg/L	Rec. Amt. µg/L	Rec. %	8081 CCV 0.02NG/UL Conc. µg/L	Rec. Amt µg/L	Rec. %	Accuracy Range of Acceptability
0.1	0.101	101	0.02	0.022	109	85-115%
0.1	0.104	104	0.02	0.022	110	85-115%
0.1	0.104	104	0.02	0.022	111	85-115%
0.1	0.102	102	0.02	0.022	109	85-115%
0.1	0.104	104	0.02	0.022	111	85-115%
0.1	0.105	105	0.02	0.022	111	85-115%
0.1	0.099	99	0.02	0.021	107	85-115%
0.1	0.105	105	0.02	0.023	113	85-115%
0.1	0.106	106	0.02	0.023	113	85-115%
0.1	0.107	107	0.02	0.023	113	85-115%
0.1	0.107	107	0.02	0.023	114	85-115%
0.1	0.106	106	0.02	0.022	112	85-115%
0.1	0.108	108	0.02	0.023	113	85-115%
0.1	0.145	145	0.02	0.030	148	85-115%
0.1	0.116	116	0.02	0.025	123	85-115%
0.1	0.106	106	0.02	0.022	112	85-115%
0.1	0.089	89	0.02	0.019	94	85-115%
0.1	0.090	90	0.02	0.018	92	85-115%
0.1	0.090	90	0.02	0.017	87	85-115%
0.1	0.097	97	0.02	0.022	109	85-115%
0.1	0.095	95	0.02	0.020	98	85-115%
0.1	0.987	99	0.02	0.194	97	85-115%
0.1	0.814	81	0.02	0.198	99	85-115%
Average Recovery %		103	Average Recovery %		109	85-115%

Method 608
Initial Calibration Criteria
Prepare a calibration curve using a minimum of three calibration points. Alternatively, if the RSD <10%, linearity through the origin and quantitation using the Average Response Factor may be used.
Calibration Verification Criteria
A Calibration Verification Standard must be analyzed daily. The CVS is acceptable if the response of each analyte is within 15% of its true value.

Method 8081
Initial Calibration Criteria
*If the RSD of an analyte is <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may be used.
If the RSD for one or more analytes exceeds 20%, but the average RSD of all analytes is still <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may still be used.
If the average RSD of all analytes exceeds 20%, linearity through the origin may not be used. The use of a linear regression not forced through zero may be used if the coefficient of determination >= 0.99.
Alternatively, a calibration curve may be prepared. A second order (quadratic) calibration curve must have a minimum of six calibration points. The curve cannot be forced through the origin or used as a calibration point.
The coefficient of determination of an acceptable calibration curve must be >= 0.99.
Calibration Verification Criteria
The CVS is acceptable if the response of each analyte is within 15% of its true value.
If this criteria is exceeded for one or more analytes, but the average response of all analytes is within 15% of their true values, the CVS is acceptable.

Calibration Type: 7 point Quadratic

Received Time Aug. 13. 2:30PM

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EPA Method 8082
QC Summary

Batch: 990805
Date: 8/7/99

Initials: cd
Instrument ID: GC/ECD#2D

Analyte	LRB Conc. µg/L	LRB R.L. µg/L	LCS BLL99080542-11A PCB Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Precision RPD %	0 Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Accuracy Range of Acceptability*	Comments
1016-1	ND	1.00	10.0	9.609	96	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-2	ND	1.00	10.0	9.627	96	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-3	ND	1.00	10.0	9.620	96	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-4	ND	1.00	10.0	9.837	99	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-5	ND	1.00	10.0	12.233	122	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-6	ND	1.00	10.0	10.454	105	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-7	ND	1.00	10.0	10.476	105	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-8	ND	1.00	10.0	11.583	116	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-9	ND	1.00	10.0	9.356	94	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-10	ND	1.00	10.0	9.796	98	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-1	ND	1.00	10.0	11.113	111	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-2	ND	1.00	10.0	10.393	104	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-3	ND	1.00	10.0	13.286	133	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-4	ND	1.00	10.0	10.131	101	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-5	ND	1.00	10.0	11.887	119	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-6	ND	1.00	10.0	10.326	103	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-7	ND	1.00	10.0	10.844	108	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-8	ND	1.00	10.0	11.401	114	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-9	ND	1.00	10.0	10.432	104	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-10	ND	1.00	10.0	10.094	101	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	

* DQO'S are derived from EPA Methods 8082 (QA Acceptance Criteria)
*** DQO'S are derived from laboratory data.

Surrogate Recovery
DBC Limits: 35-135%

AAI ID	DBC % Rec.		AAI ID	DBC % Rec.		AAI ID	DBC % Rec.	
MBLK BLL99080542-08A	97		SAMP BLL99080542-19A (6358-1)	89				
LCS BLL99080542-11A PCB	89							
SAMP BLL99080542-13A (6312-2)	88							
SAMP BLL99080542-14A (6312-5)	41							
SAMP BLL99080542-15A (6312-8)	71							
SAMP BLL99080542-16A (6337-2)	50							
SAMP BLL99080542-17A (6337-4)	89							
SAMP BLL99080542-18A (6337-5)	73							

DO: Diluted out

Received Time Aug. 13. 2:30PM

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Batch: 990806
Date: 8/7/99

Initials: BP
Instrument ID: GC/ECD#2D

Analyte	Initial Calibration: Calibration Factors (Conc./Area) 0.025 d53380	0.05 d53390	0.1 d53390	0.25 d53410	0.5 d53420	1.0 d53430	1.5 d53440	2.5 d53450	Mean	RSD* %	Coefficient of Determination	Continuing Calibration Verification: 16/90 CCV 0.1NG/UL Conc. µg/L	Rec. Amt. µg/L	Rec. %	16/90 CCV 1.0NG/UL Conc. µg/L	Rec. Amt. µg/L	Rec. %	
1016-1	1.38E-06	1.76E-06	1.97E-06	2.20E-06	2.59E-06	3.16E-06	3.48E-06	4.05E-06	2.38E-06	32.1		0.1	0.097	97	1.0	1.031	103	
1016-2	5.58E-07	9.67E-07	1.01E-06	1.19E-06	1.40E-06	1.80E-06	2.00E-06	2.39E-06	1.26E-06	40.7		0.1	0.099	99	1.0	1.023	102	Accuracy
1016-3	2.21E-06	3.22E-06	3.54E-06	3.74E-06	4.13E-06	4.92E-06	5.24E-06	5.96E-06	3.88E-06	26.7		0.1	0.097	97	1.0	1.034	103	Range of
1016-4	1.43E-06	2.14E-06	2.43E-06	2.68E-06	3.00E-06	3.76E-06	4.11E-06	5.98E-06	2.79E-06	33.2		0.1	0.097	97	1.0	1.036	104	Acceptability
1016-5	1.83E-06	2.85E-06	3.51E-06	3.60E-06	4.13E-06	5.17E-06	5.61E-06	6.24E-06	3.82E-06	34.1		0.1	0.088	88	1.0	1.040	104	85-115%
1016-6	3.42E-07	4.69E-07	5.49E-07	6.44E-07	7.72E-07	1.00E-06	1.09E-06	1.28E-06	8.96E-07	38.7		0.1	0.103	103	1.0	1.008	101	85-115%
1016-7	6.33E-07	9.22E-07	1.10E-06	1.27E-06	1.48E-06	1.87E-06	2.06E-06	2.41E-06	1.33E-06	38.1		0.1	0.100	100	1.0	1.045	105	85-115%
1016-8	9.34E-07	1.31E-06	1.49E-06	1.63E-06	1.84E-06	2.28E-06	2.46E-06	2.83E-06	1.71E-06	31.4		0.1	0.099	99	1.0	1.049	105	85-115%
1016-9	7.39E-07	9.96E-07	1.17E-06	1.32E-06	1.52E-06	1.91E-06	2.09E-06	2.43E-06	1.39E-06	34.9		0.1	0.102	102	1.0	1.059	106	85-115%
1016-10	8.48E-07	1.12E-06	1.28E-06	1.38E-06	1.58E-06	1.95E-06	2.11E-06	2.42E-06	1.46E-06	30.7		0.1	0.103	103	1.0	1.073	107	85-115%
1260-1	6.38E-07	8.54E-07	9.90E-07	1.14E-06	1.34E-06	1.66E-06	1.81E-06	2.09E-06	1.20E-06	35.4		0.1	0.103	103	1.0	1.087	107	85-115%
1260-2	1.25E-06	1.59E-06	1.82E-06	2.07E-06	2.45E-06	2.92E-06	1.60E-06	1.81E-06	1.98E-06	29.3		0.1	0.097	97	1.0	1.054	105	85-115%
1260-3	1.18E-06	1.52E-06	1.74E-06	1.91E-06	2.22E-06	2.71E-06	2.99E-06	3.38E-06	2.04E-06	31.7		0.1	0.095	95	1.0	1.041	104	85-115%
1260-4	4.17E-07	5.81E-07	6.41E-07	7.43E-07	8.56E-07	1.03E-06	1.11E-06	1.25E-06	7.65E-07	32.8		0.1	0.108	108	1.0	1.064	106	85-115%
1260-5	1.16E-06	1.43E-06	1.62E-06	1.78E-06	2.04E-06	2.50E-06	2.83E-06	3.20E-06	1.91E-06	31.2		0.1	0.097	97	1.0	1.032	103	85-115%
1260-6	1.14E-06	1.84E-06	2.28E-06	2.69E-06	3.16E-06	3.76E-06	3.63E-06	4.05E-06	2.64E-06	36.4		0.1	0.120	120	1.0	1.074	107	85-115%
1260-7	9.66E-07	1.21E-06	1.38E-06	1.51E-06	1.70E-06	1.99E-06	2.12E-06	2.35E-06	1.56E-06	26.5		0.1	0.101	101	1.0	1.055	105	85-115%
1260-8	2.09E-06	2.92E-06	2.85E-06	3.20E-06	3.67E-06	4.30E-06	4.82E-06	5.33E-06	3.41E-06	27.3		0.1	0.092	92	1.0	0.992	99	85-115%
1260-9	6.47E-07	7.09E-07	7.83E-07	8.65E-07	9.71E-07	1.13E-06	1.20E-06	1.28E-06	9.87E-07	26.0		0.1	0.101	101	1.0	1.044	104	85-115%
1260-10	7.31E-07	9.44E-07	1.03E-06	1.16E-06	1.22E-06	1.39E-06	1.52E-06	1.72E-06	1.14E-06	23.4		0.1	0.093	93	1.0	0.942	94	85-115%
							Average %RSD			32.1		Average Recovery %		100	Average Recovery %		104	85-115%

Method 608
Initial Calibration Criteria
Prepare a calibration curve using a minimum of three calibration points. Alternatively, if the RSD <10%, linearity through the origin and quantitation using the Average Response Factor may be used.
Calibration Verification Criteria
A Calibration Verification Standard must be analyzed daily. The CVS is acceptable if the response of each analyte is within 15% of its true value.

Method 8082
If the RSD of an analyte is <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may be used.
If the RSD for one or more analytes exceeds 20%, but the average RSD of all analytes is still <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may still be used
If the average RSD of all analytes exceeds 20%, linearity through the origin may not be used. The use of a linear regression not forced through zero may be used if the coefficient of determination >= 0.99.
Alternatively, a calibration curve may be prepared. A second order (quadratic) calibration curve must have a minimum of six calibration points. The curve cannot be forced through the origin or used as a calibration point.
The coefficient of determination of an acceptable calibration curve must be >= 0.99.
Calibration Verification Criteria
A Calibration Verification Standard must be analyzed at the beginning of each 12 hour shift. The CVS is acceptable if the recovery is within 15% of the theoretical value.
If this criteria is exceeded for one or more analytes, but the average response of all analytes is within 15% of their true values, the CVS is acceptable.

Calibration Type:
8 point Quadratic

EPA Method 8082

Received Time Aug. 13. 2:30PM

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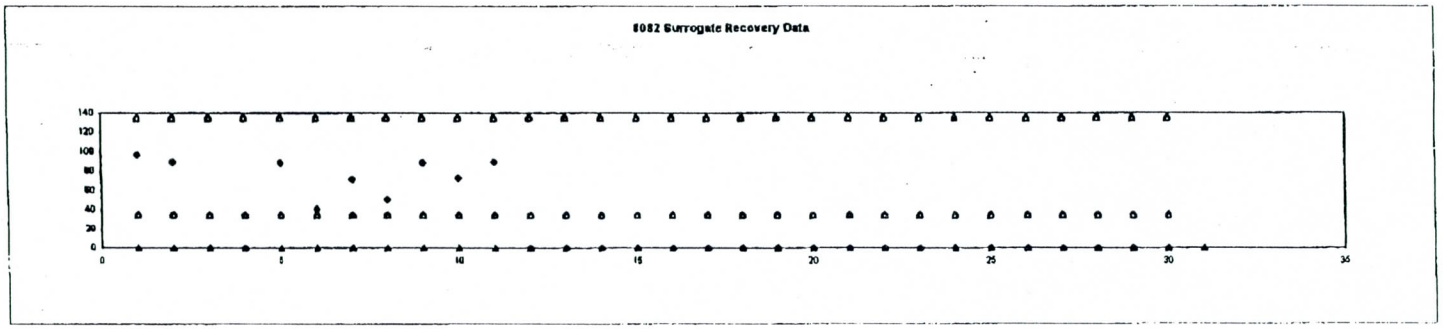
EPA Method 8082

Surrogate Recovery Chart / Retention Time Windows

Batch: 990805
Date: 8/7/99

Initials:
Instrument ID: GC/ECD#2D



Analyte	0.025 d53380	0.05 d53390	0.1 d53390	0.25 d53410	0.5 d53420	1.0 d53430	1.5 d53440	2.5 d53450	LCS d53680	MS	CCV d53800	CCV d53810	Mean RT	Standard Deviation*	Retention Time Window (Mean RT +/- (3 x Std. Dev.)) From	To
	Retention Time Window Data															
1016-1	6.96	6.95	6.95	6.96	6.96	6.96	6.96	6.95	6.94		6.93	6.93	6.945	0.008	6.92	6.97
1016-2	7.85	7.85	7.85	7.85	7.85	7.85	7.86	7.85	7.83		7.83	7.83	7.845	0.009	7.82	7.87
1016-3	8.28	8.28	8.28	8.28	8.28	8.28	8.27	8.27	8.26		8.26	8.26	8.272	0.011	8.24	8.30
1016-4	8.38	8.38	8.38	8.38	8.38	8.38	8.38	8.38	8.36		8.36	8.38	8.375	0.009	8.36	8.40
1016-5	8.64	8.66	8.65	8.64	8.64	8.64	8.64	8.64	8.63		8.63	8.63	8.639	0.007	8.62	8.66
1016-6	8.81	8.81	8.81	8.81	8.81	8.81	8.81	8.81	8.80		8.79	8.79	8.805	0.008	8.78	8.83
1016-7	9.11	9.11	9.11	9.11	9.11	9.11	9.11	9.11	9.09		9.09	9.09	9.106	0.009	9.08	9.13
1016-8	9.32	9.33	9.32	9.32	9.32	9.32	9.32	9.32	9.30		9.30	9.30	9.315	0.010	9.28	9.35
1016-9	10.09	10.09	10.09	10.08	10.08	10.08	10.08	10.08	10.07		10.07	10.06	10.079	0.009	10.05	10.11
1016-10	10.29	10.29	10.29	10.29	10.29	10.28	10.28	10.28	10.27		10.27	10.26	10.281	0.010	10.25	10.31
1260-1	12.48	12.49	12.49	12.48	12.49	12.49	12.49	12.49	12.47		12.47	12.47	12.485	0.009	12.46	12.51
1260-2	12.92	12.91	12.92	12.91	12.91	12.91	12.91	12.91	12.90		12.89	12.89	12.908	0.011	12.88	12.94
1260-3	13.16	13.16	13.16	13.15	13.16	13.15	13.16	13.15	13.13		13.13	13.13	13.146	0.011	13.11	13.18
1260-4	13.58	13.68	13.68	13.58	13.58	13.67	13.67	13.67	13.56		13.56	13.55	13.570	0.012	13.53	13.61
1260-5	13.72	13.72	13.72	13.72	13.72	13.72	13.71	13.71	13.70		13.70	13.69	13.712	0.011	13.68	13.74
1260-6	13.79	13.80	13.80	13.80	13.80	13.80	13.79	13.79	13.78		13.77	13.77	13.790	0.012	13.75	13.83
1260-7	14.29	14.29	14.29	14.29	14.29	14.28	14.28	14.28	14.27		14.26	14.26	14.281	0.012	14.24	14.32
1260-8	14.39	14.39	14.39	14.39	14.38	14.38	14.38	14.38	14.37		14.36	14.36	14.379	0.011	14.35	14.41
1260-9	14.81	14.81	14.81	14.81	14.81	14.80	14.80	14.80	14.79		14.78	14.78	14.800	0.012	14.76	14.84
1260-10	15.47	15.47	15.47	15.47	15.47	15.47	15.47	15.47	15.46		15.46	15.44	15.464	0.011	15.43	15.50

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EPA Method 608/8081A
QC Summary

Batch: 99080
Date: 8/7/99

Initials: BP
Instrument ID: GC/ECD#2D

Analyte	LRB		LCS BLL99080542-02A PEST			LCSD BLL99080542-03A PEST			Precision	0			Accuracy	Comments
	Conc. µg/L	R.L. µg/L	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	RPD %	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Range of Acceptability*	
gamma-BHC	ND	0.05	5.0	4.465	89	5.0	4.285	86	4.1	1.0	0.000	0	32-127	
Aldrin	ND	0.05	5.0	4.499	90	5.0	4.356	87	3.2	1.0	0.000	0	42-122	
Heptachlor epoxide	ND	0.05	5.0	4.647	93	5.0	4.572	91	1.6	1.0	0.000	0	37-142	
Dieldrin	ND	0.10	5.0	4.456	89	5.0	4.502	90	1.0	1.0	0.000	0	36-146	
Endrin	ND	0.10	5.0	5.244	105	5.0	5.217	104	0.5	1.0	0.000	0	30-147	
4,4'-DDT	ND	0.10	5.0	3.320	66	5.0	3.275	66	1.3	1.0	0.000	0	25-160	

* DQOS are derived from EPA Methods 608

Endrin Breakdown: 18%
DDT Breakdown: 5%

Surrogate Recovery
DBC Limits: 35-135%

AAI ID	DBC % Rec.		AAI ID	DBC % Rec.		AAI ID	DBC % Rec.	
MBLK BLL99080542-01A	103							
LCS BLL99080542-02A PEST	120							
LCSD BLL99080542-03A PEST	123							
SAMP BLL99080542-05A (6244-1)	151 *							
SAMP BLL99080542-06A (6248-1)	66							
SAMP BLL99080542-07A (6307-1)	98							

DO: Diluted out

* DBC surrogate recovery was 93% on the "C" detector.

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EPA Method 608/8081A
Calibration Factor / Continuing Calibration

Batch: 99080 δ
Date: 8/7/99

Initials: SP
Instrument ID: GC/ECD#2D

Analyte	Initial Calibration: Calibration Factors (Conc./Area) 0.0025 d53270	0.005 d53280	0.01 d53280	0.02 d53300	0.05 d53310	0.1 d53320	0.2 d53330	Mean	RSD* %	Coefficient of Determination
Hexachlorobenzene	3.65E-08	4.01E-08	4.40E-08	4.95E-08	6.03E-08	7.04E-08	8.41E-08	5.50E-08	31.8	
alpha-BHC	4.34E-08	4.44E-08	4.42E-08	4.38E-08	4.93E-08	5.46E-08	6.35E-08	4.90E-08	15.5	
gamma-BHC	4.40E-08	4.34E-08	4.50E-08	4.70E-08	5.40E-08	6.03E-08	6.98E-08	5.19E-08	19.3	
Heptachlor	3.93E-08	4.00E-08	4.23E-08	4.55E-08	5.31E-08	6.01E-08	7.08E-08	5.02E-08	23.6	
Aldrin	4.81E-08	4.82E-08	4.95E-08	5.16E-08	5.88E-08	6.57E-08	7.65E-08	5.69E-08	19.0	
beta-BHC	7.21E-08	7.67E-08	8.27E-08	9.01E-08	1.06E-07	1.20E-07	1.41E-07	9.84E-08	25.6	
delta-BHC	6.48E-08	6.55E-08	6.58E-08	6.36E-08	7.14E-08	7.96E-08	8.91E-08	7.14E-08	13.4	
Heptachlor epoxide	5.05E-08	5.11E-08	5.28E-08	5.57E-08	6.48E-08	7.33E-08	8.55E-08	6.20E-08	21.5	
Endosulfan I	5.59E-08	5.69E-08	5.93E-08	6.33E-08	7.15E-08	7.95E-08	9.15E-08	6.83E-08	19.5	
gamma-Chlordane	5.18E-08	5.27E-08	5.51E-08	5.92E-08	6.73E-08	7.47E-08	8.59E-08	6.38E-08	20.0	
alpha-Chlordane	5.15E-08	5.26E-08	5.54E-08	6.00E-08	6.91E-08	7.72E-08	8.92E-08	6.50E-08	21.8	
4,4'-DDE	6.38E-08	6.16E-08	6.22E-08	6.42E-08	7.10E-08	7.82E-08	8.96E-08	7.01E-08	14.9	
Dieldrin	6.18E-08	6.13E-08	6.24E-08	6.45E-08	7.12E-08	7.74E-08	8.69E-08	6.93E-08	14.0	
Endrin	8.46E-08	8.71E-08	8.53E-08	8.98E-08	1.01E-07	1.13E-07	1.26E-07	9.81E-08	16.2	
4,4'-DDD	8.69E-08	8.70E-08	8.77E-08	8.69E-08	9.68E-08	1.04E-07	1.17E-07	9.54E-08	11.9	
Endosulfan II	6.50E-08	6.94E-08	7.21E-08	7.75E-08	8.70E-08	9.52E-08	1.07E-07	8.19E-08	18.6	
4,4'-DDT	8.49E-08	8.54E-08	8.71E-08	8.87E-08	9.83E-08	1.06E-07	1.17E-07	9.53E-08	12.8	
Endrin Aldehyde	7.48E-08	7.73E-08	7.94E-08	8.22E-08	8.99E-08	9.58E-08	1.06E-07	8.65E-08	13.1	
Methoxychlor	1.12E-07	1.23E-07	1.23E-07	1.40E-07	1.58E-07	1.76E-07	2.10E-07	1.49E-07	23.6	
Endosulfan Sulfate	1.07E-07	1.05E-07	1.19E-07	1.21E-07	1.38E-07	1.46E-07	1.55E-07	1.27E-07	15.2	
Endrin Ketone	8.78E-08	8.64E-08	8.76E-08	9.13E-08	1.00E-07	1.07E-07	1.19E-07	9.71E-08	12.7	
Permethion I	8.60E-08	8.99E-08	9.82E-08	1.10E-07	1.29E-07	1.45E-07	1.69E-07	1.18E-07	26.2	
Permethion II	1.92E-07	1.99E-07	2.12E-07	2.30E-07	2.64E-07	2.90E-07	3.31E-07	2.46E-07	21.1	
							Average %RSD		18.7	

Continuing Calibration Verification: 8081 CCV 0.1NG/UL Conc. µg/L	Rec. Amt. µg/L	Rec. %	8081 CCV 0.02NG/UL Conc. µg/L	Rec. Amt. µg/L	Rec. %	Accuracy Range of Acceptability
0.1	0.100	100	0.02	0.021	105	85-115%
0.1	0.101	101	0.02	0.021	104	85-115%
0.1	0.102	102	0.02	0.021	105	85-115%
0.1	0.102	102	0.02	0.021	105	85-115%
0.1	0.103	103	0.02	0.021	105	85-115%
0.1	0.102	102	0.02	0.021	105	85-115%
0.1	0.093	93	0.02	0.019	94	85-115%
0.1	0.103	103	0.02	0.021	106	85-115%
0.1	0.104	104	0.02	0.021	106	85-115%
0.1	0.104	104	0.02	0.021	107	85-115%
0.1	0.103	103	0.02	0.021	107	85-115%
0.1	0.104	104	0.02	0.021	107	85-115%
0.1	0.105	105	0.02	0.021	107	85-115%
0.1	0.145	145	0.02	0.029	145	85-115%
0.1	0.108	108	0.02	0.022	111	85-115%
0.1	0.103	103	0.02	0.021	106	85-115%
0.1	0.095	95	0.02	0.019	97	85-115%
0.1	0.091	91	0.02	0.018	92	85-115%
0.1	0.100	100	0.02	0.018	90	85-115%
0.1	0.102	102	0.02	0.023	114	85-115%
0.1	0.093	93	0.02	0.019	93	85-115%
0.1	1.100	110	0.02	0.203	101	85-115%
0.1	0.830	83	0.02	0.202	101	85-115%
Average Recovery %		102	Average Recovery %		105	85-115%

Method 608
Initial Calibration Criteria
Prepare a calibration curve using a minimum of three calibration points. Alternatively, if the RSD <10%, linearity through the origin and quantitation using the Average Response Factor may be used.
Calibration Verification Criteria
A Calibration Verification Standard must be analyzed daily. The CVS is acceptable if the response of each analyte is within 15% of its true value.

Method 8081
Initial Calibration Criteria
*If the RSD of an analyte is <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may be used.
If the RSD for one or more analytes exceeds 20%, but the average RSD of all analytes is still <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may still be used
If the average RSD of all analytes exceeds 20%, linearity through the origin may not be used. The use of a linear regression not forced through zero may be used if the coefficient of determination >= 0.99.
Alternatively, a calibration curve may be prepared. A second order (quadratic) calibration curve must have a minimum of six calibration points. The curve cannot be forced through the origin or used as a calibration point.
The coefficient of determination of an acceptable calibration curve must be >= 0.99
Calibration Verification Criteria
The CVS is acceptable if the response of each analyte is within 15% of its true value.
If this criteria is exceeded for one or more analytes, but the average response of all analytes is within 15% of their true values, the CVS is acceptable.

Calibration Type: 7 point Quadratic

Received Time Aug. 13. 2:30PM

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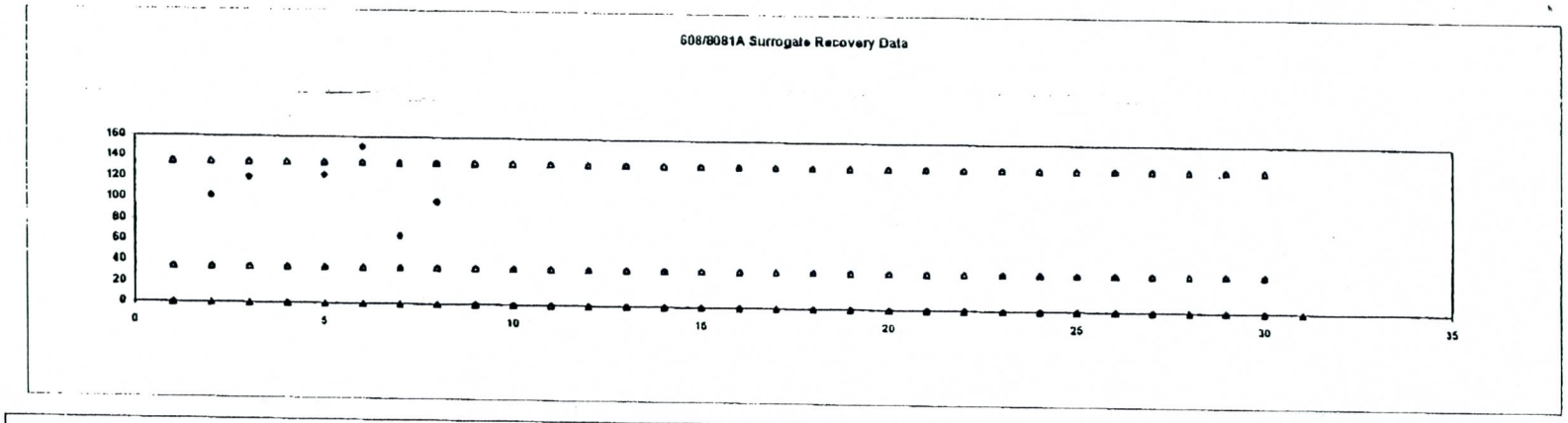
EPA Method 608/8081A
Surrogate Recovery Chart / Retention Time Windows

Batch: 990805
Date: 8/7/99

Initials: XO
Instrument ID: GC/ECD#2D



Analyte	0.0025 d53270	0.005 d53280	0.01 d53280	0.02 d53300	0.05 d53310	0.1 d53320	0.2 d53330	LCS d53530	MS d54270	CCV d53610	CCV d53800	Mean RT	Standard Deviation*	Retention Time Window (Mean RT +/- (3 x Std. Dev.)) From	To
	Retention Time Window Data														
Hexachlorobenzene	6.72	6.72	6.72	6.71	6.72	6.72	6.72			6.71	6.71	6.717	0.005	6.70	6.73
alpha-BHC	7.75	7.74	7.75	7.74	7.74	7.74	7.74	7.73		7.73	7.73	7.739	0.007	7.72	7.76
gamma-BHC	8.63	8.63	8.63	8.63	8.63	8.63	8.63	8.61		8.62	8.62	8.626	0.007	8.61	8.65
Heptachlor	9.03	9.03	9.03	9.03	9.03	9.03	9.03	9.01		9.01	9.02	9.025	0.008	9.00	9.05
Aldrin	9.57	9.57	9.58	9.57	9.57	9.57	9.57	9.56		9.56	9.57	9.568	0.008	9.54	9.59
beta-BHC	10.26	10.26	10.26	10.26	10.26	10.25	10.25	10.24		10.25	10.25	10.252	0.006	10.23	10.27
delta-BHC	10.71	10.70	10.71	10.70	10.70	10.70	10.70	10.68		10.69	10.69	10.699	0.007	10.68	10.72
Heptachlor epoxide	11.05	11.05	11.05	11.05	11.05	11.05	11.05	11.03		11.03	11.03	11.044	0.010	11.02	11.07
Endosulfan I	11.57	11.57	11.57	11.57	11.57	11.57	11.57	11.54		11.55	11.55	11.563	0.012	11.53	11.60
gamma-Chlordane	11.68	11.68	11.68	11.68	11.68	11.68	11.68			11.67	11.67	11.679	0.008	11.66	11.70
alpha-Chlordane	11.83	11.83	11.83	11.83	11.83	11.83	11.83			11.82	11.82	11.828	0.004	11.81	11.84
4,4'-DDE	11.98	11.98	11.99	11.98	11.98	11.98	11.98			11.97	11.97	11.979	0.006	11.96	12.00
Dieldrin	12.30	12.30	12.30	12.30	12.30	12.29	12.29	12.27		12.28	12.29	12.292	0.010	12.26	12.32
Endrin	12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.67		12.69	12.69	12.695	0.010	12.67	12.72
4,4'-DDD	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.49		13.49	13.50	13.505	0.008	13.48	13.53
Endosulfan II	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.62		13.63	13.63	13.643	0.012	13.61	13.68
4,4'-DDT	13.83	13.83	13.83	13.82	13.82	13.82	13.82	13.79		13.81	13.81	13.818	0.012	13.78	13.85
Endrin Aldehyde	14.45	14.45	14.45	14.45	14.45	14.45	14.45	14.43		14.43	14.44	14.445	0.008	14.42	14.47
Methoxychlor	15.04	15.04	15.04	15.04	15.04	15.03	15.03	15.00		15.01	15.02	15.029	0.014	14.99	15.07
Endosulfan Sulfate	15.06	15.05	15.05	15.05	15.05	15.05	15.05	15.03		15.03	15.03	15.044	0.010	15.02	15.07
Endrin Ketone	15.78	15.78	15.78	15.78	15.78	15.77	15.77	15.76		15.76	15.77	15.771	0.010	15.74	15.80
Permethion I	16.47	16.47	16.47	16.47	16.47	16.47	16.47			16.46	16.45	16.466	0.009	16.44	16.49
Permethion I	16.71	16.71	16.71	16.71	16.71	16.71	16.71			16.69	16.69	16.706	0.009	16.68	16.73

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EPA Method 8082
QC Summary

Batch: 990805
Date: 8/7/99

Initials: A
Instrument ID: GC/ECD#2D

Analyte	LRB		LCS BLL99080542-04A PCB						Precision	0			Accuracy	Comments
	Conc. µg/L	R.L. µg/L	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	RPD %	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Range of Acceptability*	
1016-1	ND	1.00	10.0	9.593	86	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-2	ND	1.00	10.0	9.891	99	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-3	ND	1.00	10.0	9.417	94	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-4	ND	1.00	10.0	9.613	96	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-5	ND	1.00	10.0	11.470	115	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-6	ND	1.00	10.0	10.374	104	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-7	ND	1.00	10.0	10.163	102	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-8	ND	1.00	10.0	11.243	112	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-9	ND	1.00	10.0	10.397	104	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-10	ND	1.00	10.0	9.261	93	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-1	ND	1.00	10.0	10.741	107	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-2	ND	1.00	10.0	10.437	104	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-3	ND	1.00	10.0	13.020	130	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-4	ND	1.00	10.0	10.103	101	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-5	ND	1.00	10.0	11.647	116	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-6	ND	1.00	10.0	9.753	98	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-7	ND	1.00	10.0	10.748	107	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-8	ND	1.00	10.0	11.418	114	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-9	ND	1.00	10.0	10.538	105	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-10	ND	1.00	10.0	10.810	108	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	

* DQO'S are derived from EPA Methods 8082 (QA Acceptance Criteria)
*** DQO'S are derived from laboratory data.

Surrogate Recovery
DBC Limits: 35-135%

AAI ID	DBC % Rec.		AAI ID	DBC % Rec.		AAI ID	DBC % Rec.	
MBLK BLL99080542-01A	102							
LCS BLL99080542-04A PCB	90							
SAMP BLL99080542-05A (6244-1)	177 *							
SAMP BLL99080542-06A (6248-1)	65							
SAMP BLL99080542-07A (6307-1)	102							

DQ: Diluted out

* DBC SURROGATE RECOVERY WAS 93% ON THE "C" DETECTOR.

Received Time Aug. 13. 2:30PM

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Batch: 990805
Date: 8/7/99

Initials: 08
Instrument ID: GC/ECD#2D

Analyte	Initial Calibration: Calibration Factors (Conc./Area) 0.025 d53380	0.05 d53390	0.1 d53390	0.25 d53410	0.5 d53420	1.0 d53430	1.5 d53440	2.5 d53450	Mean	RSD* %	Coefficient of Determination	Continuing Calibration Verification: 18/60 CCV 0.1NG/UL Conc. µg/L	Rec. Amt. µg/L	Rec. %	18/60 CCV 1.0NG/UL Conc. µg/L	Rec. Amt. µg/L	Rec. %	
1016-1	1.38E-06	1.76E-06	1.97E-06	2.20E-06	2.59E-06	3.16E-06	3.48E-06	4.05E-06	2.36E-06	32.1		0.1	0.096	96	1.0	1.007	101	
1016-2	5.58E-07	8.67E-07	1.01E-06	1.16E-06	1.40E-06	1.80E-06	2.00E-06	2.36E-06	1.26E-06	40.7		0.1	0.093	93	1.0	1.017	102	Accuracy
1016-3	2.21E-06	3.22E-06	3.54E-06	3.74E-06	4.13E-06	4.92E-06	5.24E-06	5.96E-06	3.86E-06	28.7		0.1	0.092	92	1.0	1.007	101	Range of
1016-4	1.43E-06	2.14E-06	2.43E-06	2.68E-06	3.00E-06	3.75E-06	4.11E-06	5.06E-06	2.79E-06	33.2		0.1	0.094	94	1.0	1.034	103	Acceptability
1016-5	1.83E-06	2.85E-06	3.51E-06	3.60E-06	4.13E-06	5.17E-06	5.61E-06	6.24E-06	3.82E-06	34.1		0.1	0.085	85	1.0	1.027	103	85-115%
1016-6	3.42E-07	4.69E-07	6.49E-07	6.44E-07	7.72E-07	1.00E-06	1.09E-06	1.28E-06	6.96E-07	39.7		0.1	0.099	99	1.0	0.991	99	85-115%
1016-7	6.33E-07	9.22E-07	1.10E-06	1.27E-06	1.46E-06	1.87E-06	2.06E-06	2.41E-06	1.33E-06	38.1		0.1	0.097	97	1.0	1.027	103	85-115%
1016-8	9.34E-07	1.31E-06	1.49E-06	1.63E-06	1.84E-06	2.28E-06	2.46E-06	2.83E-06	1.71E-06	31.4		0.1	0.098	98	1.0	1.027	103	85-115%
1016-9	7.39E-07	9.96E-07	1.17E-06	1.32E-06	1.52E-06	1.91E-06	2.09E-06	2.43E-06	1.39E-06	34.9		0.1	0.094	94	1.0	1.024	102	85-115%
1016-10	8.48E-07	1.12E-06	1.26E-06	1.36E-06	1.66E-06	1.85E-06	2.11E-06	2.42E-06	1.46E-06	30.7		0.1	0.089	89	1.0	1.040	104	85-115%
1260-1	6.36E-07	8.54E-07	9.90E-07	1.14E-06	1.34E-06	1.86E-06	1.81E-06	2.09E-06	1.20E-06	35.4		0.1	0.089	89	1.0	1.023	102	85-115%
1260-2	1.25E-06	1.59E-06	1.82E-06	2.07E-06	2.45E-06	2.92E-06	1.60E-06	1.81E-06	1.96E-06	29.3		0.1	0.097	97	1.0	1.018	102	85-115%
1260-3	1.18E-06	1.52E-06	1.74E-06	1.91E-06	2.22E-06	2.71E-06	2.86E-06	3.38E-06	2.04E-06	31.7		0.1	0.095	95	1.0	1.011	101	85-115%
1260-4	4.17E-07	5.81E-07	6.41E-07	7.43E-07	8.58E-07	1.03E-06	1.11E-06	1.26E-06	7.65E-07	32.6		0.1	0.104	104	1.0	1.021	102	85-115%
1260-5	1.15E-06	1.43E-06	1.82E-06	1.79E-06	2.04E-06	2.60E-06	2.83E-06	3.20E-06	1.91E-06	31.2		0.1	0.097	97	1.0	1.044	104	85-115%
1260-6	1.14E-06	1.84E-06	2.26E-06	2.68E-06	3.15E-06	3.76E-06	3.63E-06	4.05E-06	2.64E-06	36.4		0.1	0.102	102	1.0	0.953	95	85-115%
1260-7	9.66E-07	1.21E-06	1.39E-06	1.51E-06	1.70E-06	1.99E-06	2.12E-06	2.35E-06	1.58E-06	26.5		0.1	0.102	102	1.0	0.998	100	85-115%
1260-8	2.09E-06	2.82E-06	2.95E-06	3.20E-06	3.67E-06	4.30E-06	4.92E-06	5.33E-06	3.41E-06	27.3		0.1	0.089	89	1.0	1.029	103	85-115%
1260-9	5.47E-07	7.09E-07	7.93E-07	8.65E-07	9.71E-07	1.13E-06	1.20E-06	1.28E-06	8.87E-07	28.0		0.1	0.099	99	1.0	1.001	100	85-115%
1260-10	7.31E-07	9.44E-07	1.03E-06	1.18E-06	1.22E-06	1.39E-06	1.52E-06	1.72E-06	1.14E-06	23.4		0.1	0.093	93	1.0	0.948	95	85-115%
							Average %RSD			32.1		Average Recovery %		98	Average Recovery %		101	85-115%

Method 608

Initial Calibration Criteria

Prepare a calibration curve using a minimum of three calibration points. Alternatively, if the RSD <10%, linearity through the origin and quantitation using the Average Response Factor may be used.

Calibration Verification Criteria

A Calibration Verification Standard must be analyzed daily. The CVS is acceptable if the response of each analyte is within 15% of its true value.

Method 8082

If the RSD of an analyte is <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may be used.
If the RSD for one or more analytes exceeds 20%, but the average RSD of all analytes is still <=20%, a linear calibration forced through zero and quantitation using the Average Response Factor may still be used
If the average RSD of all analytes exceeds 20%, linearity through the origin may not be used. The use of a linear regression not forced through zero may be used if the coefficient of determination >= 0.99.
Alternatively, a calibration curve may be prepared. A second order (quadratic) calibration curve must have a minimum of six calibration points. The curve cannot be forced through the origin or used as a calibration point.
The coefficient of determination of an acceptable calibration curve must be >= 0.99.

Calibration Verification Criteria

A Calibration Verification Standard must be analyzed at the beginning of each 12 hour shift. The CVS is acceptable if the recovery is within 15% of the theoretical value.
If this criteria is exceeded for one or more analytes, but the average response of all analytes is within 15% of their true values, the CVS is acceptable.

Calibration Type:
8 point Quadratic

EPA Method 8082

Received Time Aug. 13. 2:30PM

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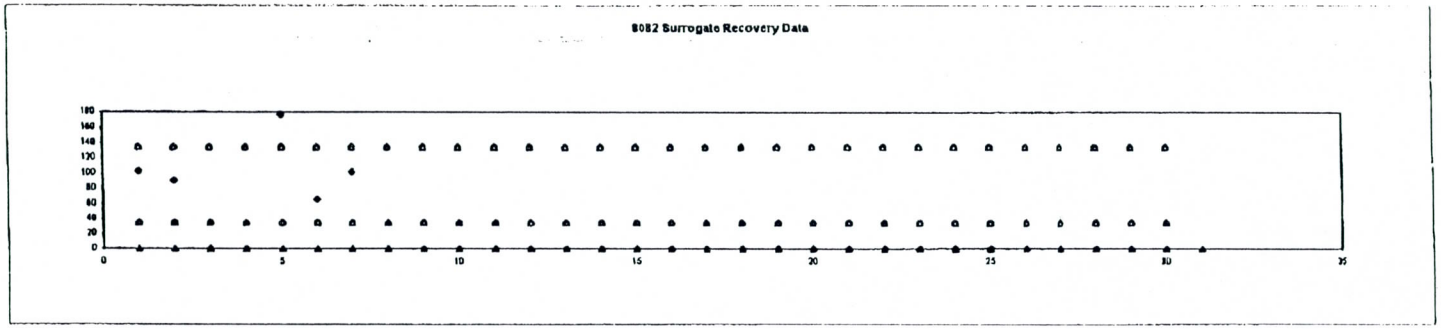
EPA Method 8082

Surrogate Recovery Chart / Retention Time Windows

Batch: 990806
Date: 8/7/99

Initials: SB
Instrument ID: GC/ECD#2D



Analyte	0.025 d63380	0.05 d63390	0.1 d63390	0.25 d63410	0.5 d63420	1.0 d63430	1.5 d63440	2.5 d63450	LCS d63560	MS	CCV d63630	CCV d63640	Mean RT	Standard Deviation*	Retention Time Window (Mean RT +/- (3 x Std. Dev.)) From	To
	Retention Time Window Data															
1016-1	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.94		6.94	6.93	6.946	0.007	6.93	6.97
1016-2	7.85	7.85	7.85	7.85	7.86	7.85	7.85	7.85	7.84		7.84	7.83	7.846	0.007	7.83	7.87
1016-3	8.28	8.28	8.28	8.28	8.28	8.28	8.27	8.27	8.27		8.26	8.26	8.274	0.008	8.25	8.30
1016-4	8.38	8.38	8.38	8.38	8.38	8.38	8.38	8.38	8.37		8.37	8.36	8.376	0.007	8.38	8.40
1016-5	8.64	8.65	8.65	8.64	8.64	8.64	8.64	8.64	8.64		8.63	8.63	8.640	0.006	8.62	8.66
1016-6	8.81	8.81	8.81	8.81	8.81	8.81	8.81	8.81	8.80		8.80	8.80	8.807	0.006	8.79	8.82
1016-7	9.11	9.11	9.11	9.11	9.11	9.11	9.11	9.11	9.10		9.10	9.09	9.108	0.007	9.09	9.13
1016-8	9.32	9.33	9.32	9.32	9.32	9.32	9.32	9.32	9.31		9.31	9.30	9.317	0.008	9.29	9.34
1016-9	10.09	10.09	10.09	10.08	10.08	10.08	10.08	10.08	10.07		10.07	10.07	10.080	0.008	10.06	10.10
1016-10	10.29	10.29	10.29	10.29	10.29	10.28	10.28	10.28	10.28		10.27	10.27	10.283	0.008	10.26	10.31
1260-1	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.48		12.47	12.47	12.485	0.008	12.46	12.51
1260-2	12.92	12.92	12.92	12.91	12.91	12.91	12.91	12.91	12.90		12.90	12.89	12.909	0.009	12.88	12.94
1260-3	13.16	13.16	13.15	13.15	13.15	13.15	13.15	13.15	13.14		13.14	13.13	13.148	0.009	13.12	13.17
1260-4	13.58	13.58	13.58	13.58	13.58	13.57	13.57	13.57	13.56		13.56	13.56	13.572	0.009	13.55	13.60
1260-5	13.72	13.72	13.72	13.72	13.72	13.72	13.71	13.71	13.71		13.70	13.70	13.714	0.008	13.69	13.74
1260-6	13.79	13.80	13.80	13.80	13.80	13.80	13.79	13.79	13.79		13.78	13.78	13.793	0.008	13.77	13.82
1260-7	14.29	14.29	14.29	14.29	14.29	14.29	14.28	14.28	14.28		14.27	14.27	14.284	0.008	14.26	14.31
1260-8	14.39	14.39	14.39	14.39	14.38	14.38	14.38	14.38	14.37		14.37	14.37	14.381	0.008	14.36	14.41
1260-9	14.81	14.81	14.81	14.81	14.81	14.80	14.80	14.80	14.79		14.79	14.79	14.802	0.009	14.78	14.83
1260-10	15.47	15.47	15.47	15.47	15.47	15.47	15.47	15.47	15.46		15.46	15.45	15.465	0.008	15.44	15.49

Received Time Aug. 13. 2:30PM

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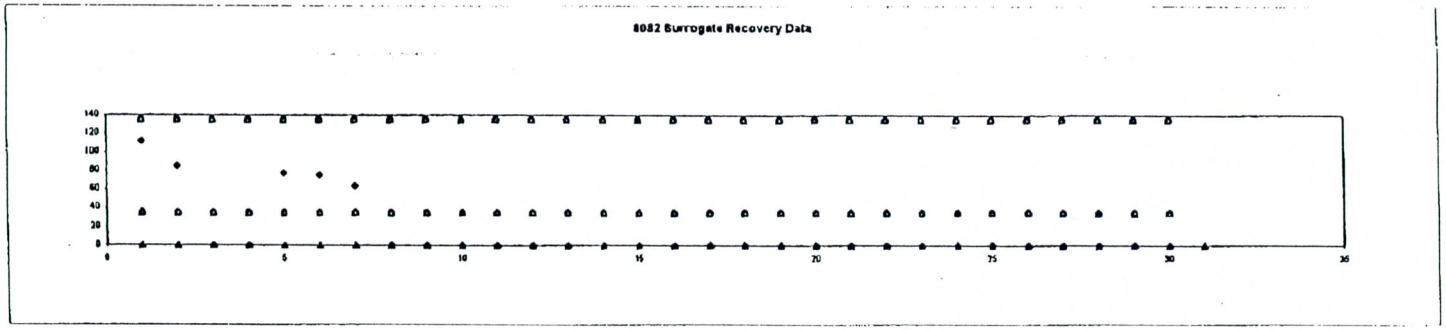
EPA Method 8082

Surrogate Recovery Chart / Retention Time Windows

Batch: 990805
Date: 8/8/99

Initials: dl
Instrument ID: GC/ECD#20



Analyte	0.025 d53830	0.05 d53940	0.1 d53940	0.25 d53960	0.5 d53970	1.0 d53980	1.5 d53890	2.5 d54000	LCS d54180	MS	CCV d54240	CCV d54260	Mean RT	Standard Deviation*	Retention Time Window (Mean RT +/- (3 x Std. Dev.)) From	To
	Retention Time Window Data															
1016-1	6.93	6.93	6.93	6.93	6.92	6.92	6.92	6.92	6.92		6.93	6.93	6.925	0.005	6.91	6.94
1016-2	7.83	7.82	7.82	7.82	7.82	7.82	7.82	7.82	7.82		7.83	7.83	7.823	0.005	7.81	7.84
1016-3	8.26	8.26	8.26	8.25	8.24	8.24	8.24	8.24	8.25		8.26	8.25	8.247	0.006	8.23	8.27
1016-4	8.36	8.36	8.36	8.36	8.35	8.35	8.35	8.35	8.35		8.36	8.36	8.356	0.005	8.34	8.37
1016-5	8.62	8.62	8.62	8.62	8.61	8.61	8.62	8.61	8.62		8.63	8.63	8.619	0.007	8.60	8.64
1016-6	8.79	8.79	8.79	8.79	8.78	8.78	8.78	8.78	8.78		8.79	8.79	8.785	0.005	8.77	8.80
1016-7	9.09	9.08	9.08	9.08	9.08	9.08	9.08	9.08	9.08		9.09	9.09	9.083	0.005	9.07	9.10
1016-8	9.30	9.30	9.29	9.30	9.29	9.29	9.29	9.29	9.29		9.30	9.30	9.296	0.005	9.28	9.31
1016-9	10.06	10.06	10.05	10.06	10.05	10.05	10.05	10.05	10.06		10.06	10.06	10.056	0.005	10.04	10.07
1016-10	10.26	10.26	10.26	10.26	10.25	10.25	10.26	10.26	10.25		10.27	10.26	10.256	0.007	10.24	10.28
1260-1	12.46	12.46	12.46	12.46	12.45	12.46	12.45	12.45	12.46		12.47	12.46	12.457	0.006	12.44	12.48
1260-2	12.89	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88		12.89	12.89	12.883	0.005	12.87	12.90
1260-3	13.12	13.12	13.12	13.12	13.12	13.12	13.11	13.11	13.12		13.13	13.12	13.119	0.005	13.10	13.14
1260-4	13.56	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54		13.55	13.55	13.543	0.006	13.53	13.66
1260-5	13.69	13.69	13.68	13.68	13.68	13.68	13.68	13.68	13.68		13.68	13.69	13.684	0.005	13.67	13.70
1260-6	13.76	13.76	13.76	13.77	13.76	13.76	13.76	13.76	13.76		13.77	13.77	13.763	0.005	13.75	13.78
1260-7	14.26	14.26	14.25	14.25	14.26	14.25	14.25	14.25	14.25		14.26	14.26	14.254	0.005	14.24	14.27
1260-8	14.36	14.36	14.35	14.35	14.36	14.36	14.35	14.35	14.36		14.36	14.36	14.352	0.004	14.34	14.36
1260-9	14.77	14.77	14.77	14.77	14.77	14.77	14.77	14.77	14.77		14.78	14.78	14.772	0.004	14.76	14.78
1260-10	15.44	15.44	15.43	15.44	15.43	15.43	15.43	15.43	15.43		15.44	15.44	15.435	0.005	15.42	15.45

Received Time Aug. 13. 2:10PM

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8-13-99; 2:33PM;ALPHA ANALYTICAL Bolin Labs ;17753550406 # 10/ 30

EPA Method 8082
QC Summary

Batch: 990805
Date: 8/8/99

Initials:
Instrument ID: GC/ECD#20

Analyte	LRB Conc. µg/L	LRB R.L. µg/L	LCS BLL99080542-28A PCB Spike Amt. µg/L	LCS Rec. Amt. µg/L	LCS Rec. %	Spike Amt. µg/L	Rec. Amt. µg/L	Rec. %	Precision RPD %	Spike Amt µg/L	Rec. Amt.	Rec. %	Accuracy Range of Acceptability*	Comments
1016-1	ND	1.00	10.0	8.585	88	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-2	ND	1.00	10.0	8.753	88	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-3	ND	1.00	10.0	7.000	70	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-4	ND	1.00	10.0	8.608	85	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-5	ND	1.00	10.0	9.973	100	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-6	ND	1.00	10.0	9.134	91	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-7	ND	1.00	10.0	9.040	90	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-8	ND	1.00	10.0	8.924	89	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-9	ND	1.00	10.0	9.730	97	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1016-10	ND	1.00	10.0	8.265	83	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-1	ND	1.00	10.0	10.422	104	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-2	ND	1.00	10.0	8.984	89	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-3	ND	1.00	10.0	12.858	129	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-4	ND	1.00	10.0	9.285	93	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-5	ND	1.00	10.0	10.257	103	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-6	ND	1.00	10.0	10.929	109	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-7	ND	1.00	10.0	11.458	115	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-8	ND	1.00	10.0	9.587	96	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-9	ND	1.00	10.0	9.723	97	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	
1260-10	ND	1.00	10.0	10.121	101	10.0	0.000	0	200.0	10.0	0.000	0	60-140%	

* DQO'S are derived from EPA Methods 8082 (QA Acceptance Criteria)
*** DQO'S are derived from laboratory data.

Surrogate Recovery
DBC Limits: 35-135%

AAI ID	DBC % Rec.		AAI ID	DBC % Rec.		AAI ID	DBC % Rec.	
MBLK BLL99080542-26A	111							
LCS BLL99080542-28A PCB	85							
SAMP BLL99080542-30A (6482-1)	77							
SAMP BLL99080542-31A (6496-2)	75							
SAMP BLL99080542-32A (6547-1)	64							

DO: Diluted out

Received Time Aug. 13. 2:30PM

Data File: /var/chem/GCMS_3.i/99207a.b/011a.d
Report Date: 27-Jul-1999 15:56

Legend Technical Services, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: 8270/625 lcsd 7/19
Level: LOW
Data Type: MS DATA
SpikeList File: water.spk
Sublist File: all.sub
Method File: /var/chem/GCMS_3.i/99207a.b/8270w207.m
Misc Info: 8270/625 lcsd 7/19

Client SDG: 99207a
Fraction: SV

Operator: SAM
SampleType: MSD
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
8 Phenol C	200	62.4	31.20	12-110
9 2-Chlorophenol	200	134	67.00	27-123
11 1,4-Dichlorobenzen	100	68.4	68.40	36-97
17 N-Nitroso-di-n-pro	100	71.1	71.10	41-116
27 1,2,4-Trichloroben	100	77.6	77.60	39-98
33 4-Chloro-3-methylp	200	135	67.50	23-97
45 Acenaphthene C	100	83.5	83.50	46-118
49 2,4-Dinitrotoluene	100	87.2	87.20	24-96
50 4-Nitrophenol P	200	80.9	40.45	10-80
63 Pentachlorophenol	200	172	86.00	9-103
71 Pyrene	100	86.4	86.40	26-127

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 4 2-Fluorophenol	200	83.5	41.75	21-100
$ 7 Phenol-d5	200	64.5	32.25	10-94
$ 20 Nitrobenzene-d5	100	74.2	74.20	35-114
$ 39 2-Fluorobiphenyl	100	74.6	74.60	43-116
$ 60 2,4,6-Tribromophen	200	186	93.00	10-123
$ 72 Terphenyl-d14	100	75.8	75.80	33-141

Data File: /var/chem/GCMS_3.i/99207a.b/010.d
Report Date: 27-Jul-1999 15:32

Legend Technical Services, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: 8270/625 lcs 7/19
Level: LOW
Data Type: MS DATA
SpikeList File: 625.spk
Sublist File: all.sub
Method File: /var/chem/GCMS_3.i/99207a.b/62599207.m
Misc Info: 8270/625 lcs 7/19

Client SDG: 99207a
Fraction: SV

Operator: SAM
SampleType: MS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6 bis(2-Chloroethyl)	100	54.2	54.20	12-158
8 Phenol C	200	58.1	29.05	5-112
9 2-Chlorophenol	200	102	51.00	12-134
10 1,3-Dichlorobenzen	100	53.4	53.40	0-172
11 1,4-Dichlorobenzen	100	52.3	52.30	20-124
12 1,2-Dichlorobenzen	100	54.3	54.30	32-129
14 bis(2-chloroisopro	100	60.0	60.00	36-166
16 Hexachloroethane	100	52.5	52.50	40-113
17 N-Nitroso-di-n-pro	100	73.6	73.60	0-230
21 Nitrobenzene	100	68.4	68.40	35-180
22 Isophorone	100	69.3	69.30	21-196
23 2-Nitrophenol C	200	139	69.50	29-182
24 2,4-Dimethylphenol	200	125	62.50	32-119
25 bis(2-Chloroethoxy	100	70.2	70.20	33-184
26 2,4-Dichlorophenol	200	131	65.50	39-135
27 1,2,4-Trichloroben	100	60.8	60.80	44-142
28 Naphthalene	100	61.9	61.90	21-133
32 Hexachlorobutadien	100	60.7	60.70	24-116
33 4-Chloro-3-methylp	200	130	65.00	22-147
37 2,4,6-Trichlorophe	200	141	70.50	37-144
42 Acenaphthylene	100	61.2	61.20	33-145
43 Dimethylphthalate	100	70.7	70.70	0-112
44 2,6-Dinitrotoluene	100	86.0	86.00	39-139
45 Acenaphthene C	100	63.9	63.90	47-145
47 2,4-Dinitrophenol	200	187	93.50	0-191
49 2,4-Dinitrotoluene	100	96.8	96.80	39-139
50 4-Nitrophenol P	200	86.2	43.10	0-132
52 Fluorene	100	71.1	71.10	59-121
53 4-Chlorophenyl-phe	100	74.2	74.20	25-158
54 Diethylphthalate	100	71.9	71.90	0-114
62 Hexachlorobenzene	100	75.3	75.30	0-152
63 Pentachlorophenol	200	167	83.50	14-176
64 Phenanthrene	100	71.1	71.10	54-120

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
65 Anthracene	100	68.2	68.20	27-133
67 Di-n-butylphthalat	100	73.6	73.60	1-118
68 Fluoranthene C	100	76.4	76.40	26-137
71 Pyrene	100	80.1	80.10	52-115
73 Butylbenzylphthala	100	83.1	83.10	0-152
74 3,3'-Dichlorobenzi	100	79.8	79.80	0-262
75 Benzo[a]anthracene	100	84.6	84.60	33-143
76 Chrysene	100	91.8	91.80	17-168
77 bis(2-Ethylhexyl)p	100	81.4	81.40	8-158
79 Di-n-octylphthalat	100	71.8	71.80	4-146
80 Benzo[b]fluoranthe	100	52.4	52.40	24-159
81 Benzo[k]fluoranthe	100	52.4	52.40	11-162
82 Benzo[a]pyrene C	100	75.9	75.90	17-163
83 Indeno[1,2,3-cd]py	100	89.4	89.40	0-171
84 Dibenz[a,h]anthrac	100	90.9	90.90	0-227
61 4-Bromophenyl-phen	100	79.9	79.90	53-127
40 2-Chloronaphthalen	100	63.0	63.00	60-118
57 4,6-Dinitro-2-meth	200	178	89.00	0-181

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 4 2-Fluorophenol	200	75.8	37.90	21-100
$ 7 Phenol-d5	200	56.7	28.35	10-94
$ 20 Nitrobenzene-d5	100	70.1	70.10	35-114
$ 39 2-Fluorobiphenyl	100	61.2	61.20	43-116
$ 60 2,4,6-Tribromophen	200	184	92.00	10-123
$ 72 Terphenyl-d14	100	80.3	80.30	33-141

Data File: /var/chem/GCMS_3.i/99207a.b/011.d
Report Date: 27-Jul-1999 15:33

Legend Technical Services, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: 8270/625 lcsd 7/19
Level: LOW
Data Type: MS DATA
SpikeList File: 625.spk
Sublist File: all.sub
Method File: /var/chem/GCMS_3.i/99207a.b/62599207.m
Misc Info: 8270/625 lcsd 7/19

Client SDG: 99207a
Fraction: SV
Operator: SAM
SampleType: MSD
Quant Type: ISTD

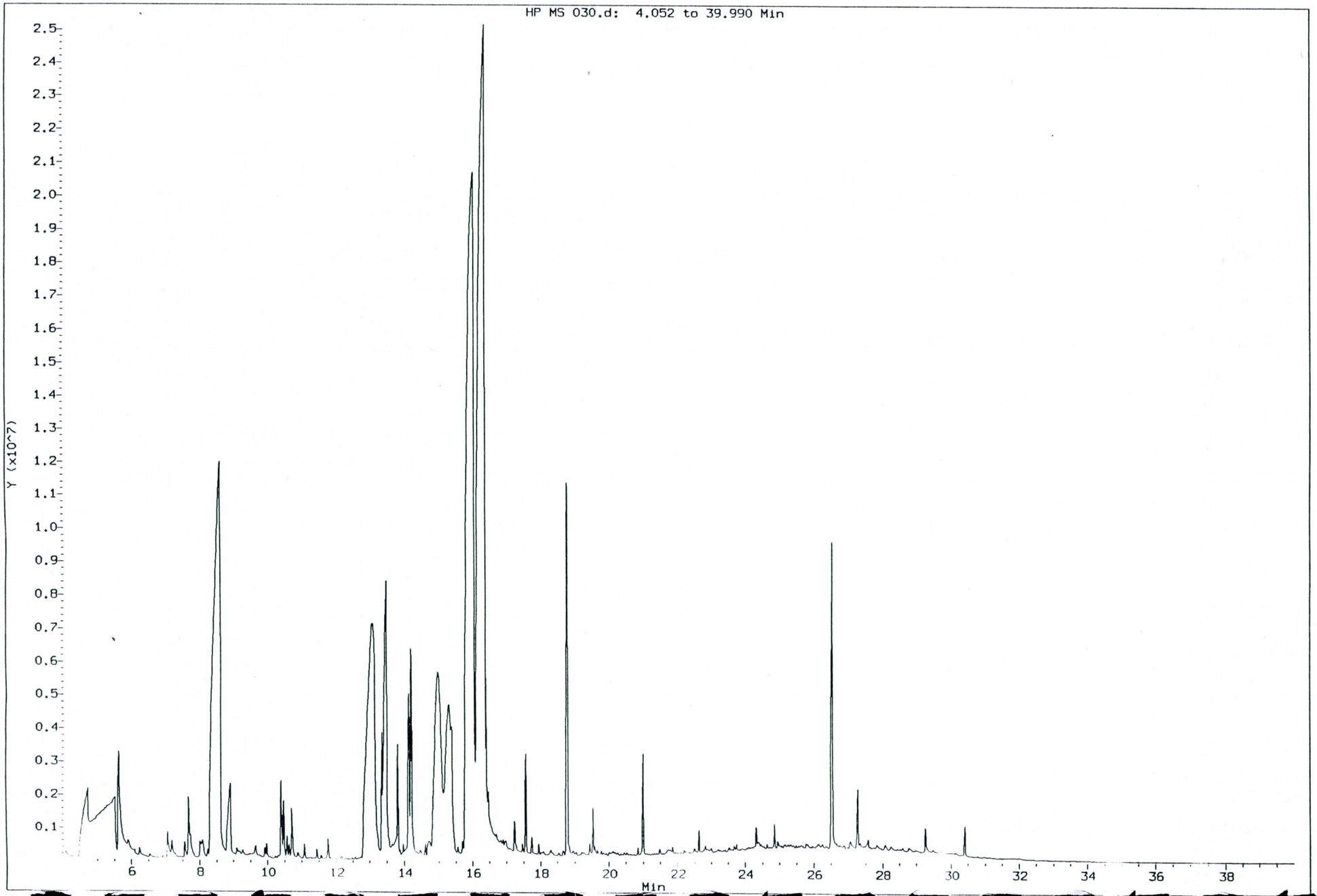
SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6 bis(2-Chloroethyl)	100	59.0	59.00	12-158
8 Phenol C	200	59.7	29.85	5-112
9 2-Chlorophenol	200	111	55.50	12-134
10 1,3-Dichlorobenzen	100	62.2	62.20	0-172
11 1,4-Dichlorobenzen	100	59.9	59.90	20-124
12 1,2-Dichlorobenzen	100	63.0	63.00	32-129
14 bis(2-chloroisopro	100	59.3	59.30	36-166
16 Hexachloroethane	100	65.8	65.80	40-113
17 N-Nitroso-di-n-pro	100	71.1	71.10	0-230
21 Nitrobenzene	100	72.0	72.00	35-180
22 Isophorone	100	56.7	56.70	21-196
23 2-Nitrophenol C	200	153	76.50	29-182
24 2,4-Dimethylphenol	200	129	64.50	32-119
25 bis(2-Chloroethoxy	100	68.1	68.10	33-184
26 2,4-Dichlorophenol	200	134	67.00	39-135
27 1,2,4-Trichloroben	100	69.2	69.20	44-142
28 Naphthalene	100	62.7	62.70	21-133
32 Hexachlorobutadien	100	72.7	72.70	24-116
33 4-Chloro-3-methylp	200	135	67.50	22-147
37 2,4,6-Trichlorophe	200	145	72.50	37-144
42 Acenaphthylene	100	63.4	63.40	33-145
43 Dimethylphthalate	100	67.7	67.70	0-112
44 2,6-Dinitrotoluene	100	88.1	88.10	39-139
45 Acenaphthene C	100	66.6	66.60	47-145
47 2,4-Dinitrophenol	200	205	102.50	0-191
49 2,4-Dinitrotoluene	100	95.0	95.00	39-139
50 4-Nitrophenol P	200	91.5	45.75	0-132
52 Fluorene	100	73.1	73.10	59-121
53 4-Chlorophenyl-phe	100	73.2	73.20	25-158
54 Diethylphthalate	100	66.0	66.00	0-114
62 Hexachlorobenzene	100	77.2	77.20	0-152
63 Pentachlorophenol	200	172	86.00	14-176
64 Phenanthrene	100	70.2	70.20	54-120

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
65 Anthracene	100	67.3	67.30	27-133
67 Di-n-butylphthalat	100	68.2	68.20	1-118
68 Fluoranthene C	100	74.9	74.90	26-137
71 Pyrene	100	76.1	76.10	52-115
73 Butylbenzylphthala	100	76.3	76.30	0-152
74 3,3'-Dichlorobenzi	100	77.9	77.90	0-262
75 Benzo[a]anthracene	100	81.4	81.40	33-143
76 Chrysene	100	88.3	88.30	17-168
77 bis(2-Ethylhexyl)p	100	72.5	72.50	8-158
79 Di-n-octylphthalat	100	66.1	66.10	4-146
80 Benzo[b]fluoranthe	100	49.0	49.00	24-159
81 Benzo[k]fluoranthe	100	49.0	49.00	11-162
82 Benzo[a]pyrene C	100	73.2	73.20	17-163
83 Indeno[1,2,3-cd]py	100	84.9	84.90	0-171
84 Dibenz[a,h]anthrac	100	86.7	86.70	0-227
61 4-Bromophenyl-phen	100	78.4	78.40	53-127
40 2-Chloronaphthalen	100	66.1	66.10	60-118
57 4,6-Dinitro-2-meth	200	187	93.50	0-181

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 4 2-Fluorophenol	200	83.5	41.75	21-100
$ 7 Phenol-d5	200	60.6	30.30	10-94
$ 20 Nitrobenzene-d5	100	74.2	74.20	35-114
$ 39 2-Fluorobiphenyl	100	63.1	63.10	43-116
$ 60 2,4,6-Tribromophen	200	186	93.00	10-123
$ 72 Terphenyl-d14	100	75.8	75.80	33-141

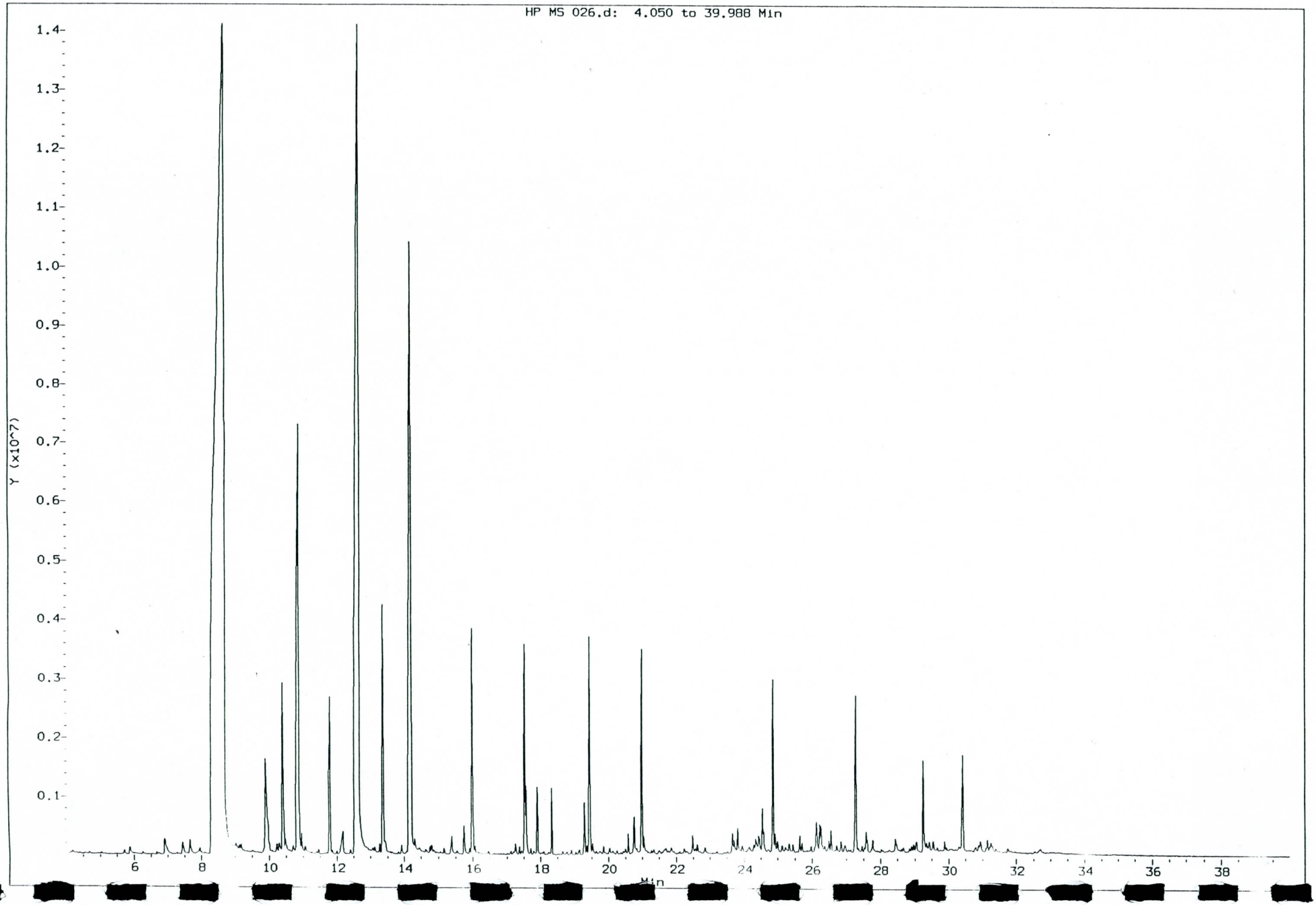
6244-1

Data File: /var/chem/GCMS_3.1/99207a.b/030.d
Injection Date: 27-JUL-1999 13:06



Data File: /var/chem/GCMS_3.1/99207a.b/026.d
Injection Date: 27-JUL-1999 09:52

6307-1



Bolin Laboratories Inc.

☐ 17631 N. 25th Ave. Phoenix AZ 85023
(602) 942-8220 • Fax(602) 942-1050

☐ 440 N. Alvernon, Suite 103, Tucson AZ 85711
(520) 327-1234 • Fax(520) 327-0518

CHAIN OF CUSTODY RECORD

Page_____ of_____

Laboratory Sample No. 9907-06312

CLIENT INFORMATION

Client Name	Address	City	State	Zip	Phone	Fax
Maricopa County	2501 W. Durango	Phoenix	AZ	85.09		

Project Name	Project Number	Contact	P.O. No.	Fax Results ☐ QC Report ☐ Special Detection Limits ☐

SAMPLE TYPE CODES

DW=Drinking Water S=Soil/Solid
WW=Wastewater T=Travel Blank
SW=Surface Water F=Food
GW=Groundwater G=Sludge
O=Other_____

TURN AROUND TIME

☐ Standard 10 - 15 Day
☐ Other_____

Laboratory Authorization Required for Rush ★ ★

REQUESTED ANALYSES

Client's Sample Identification	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance	No. of Containers	pH ✓ (Bolin Use Only)	As Attached												LAB NO.
MESA #4	7/14/99	2000		8	8			16	8.0	X												
MESA #1	7/14/99	1530		8	8			16	8.1	✓												
MESA #3	7/14/99	1500		8	8			16	9.0	X												

Comments / Special Instructions: [illegible]

SAMPLE CONDITION UPON RECEIPT

No. of Containers	54
Temperature	On Ice
Custody Seals	Y N
Seals Intact	Y N
Preserved	Y N

	RELINQUISHED BY		SAMPLES RECEIVED BY	
①	Signature [illegible]	Date 7/14/99	Signature [illegible]	Date 7/14/99
	Printed Name Albert N. Sarrato	Time 5:17	Printed Name [illegible]	Time 21:17
②	Signature	Date	Signature	Date
	Printed Name	Time	Printed Name	Time
③	Signature	Date	Signature	Date
	Printed Name	Time	Printed Name	Time

WHITE-LAB YELLOW-LAB PINK-CLIENT

Data Checksheet

Site	SIXTH AND HORNE
Municipality	MESA
Sample Date	9/23/99

Date Received	11/22/99

Laboratory Used	BOLIN
Laboratory Contact	STEPHANIE ARMAN
FCD Sample ID Number	MIC092399
Lab Sample ID Number	9909-08696-001
Laboratory Invoice Number	059145

Initial Review Complete	✓	Date	11/22/99
Lab Contacted		Date	
Lab Review Complete		Date	
Second Review Complete		Date	
Additional Review Necessary			

Comments

Data Validation Table Complete	✓	Date	11/22/99

Data Entered Into Database	✓	Date	11/22/99

Bolin Laboratories Inc.

17631 N. 25th Avenue • Phoenix, Arizona 85023
(602) 942 8220 • FAX (602) 942 1050

FLOOD CONTROL DIST
RECEIVED
NOV 26 1999
CHENG | P & PM
PIO | ADMIN | FINANCE | O & M | ENGR | PLANNING | CONTRACT | FILE
REMARKS JRC

Maricopa County Flood Control
Environmental Branch
2801 West Durango
Phoenix, AZ 85009
Attn: Julie Cox

Received: 9/24/99
Reported: 11/16/99
Invoice No: 059145

Project Name: Mesa NPDES

Matrix: Storm Water
Sample No: 9909-08696-001
Sample ID: MIC092399 (Horne & 6th) Composite

Time Sampled: 18:00
Date Sampled: 9/23/1999

PARAMETER	METHOD	RESULTS	UNITS	PQL	DATE ANALYZED
Chemical Oxygen Demand	EPA 410.4	65.	mg/L	20.	9/27/99
Total Dissolved Solids	SM 2540C	53.	mg/L		9/29/99
Solids, Total Suspended	EPA 160.2	202.	mg/L		9/28/99
Nitrogen as Ammonia	EPA 350.2	0.95	mg/L	0.03	10/06/99
Nitrogen as Nitrite	SM 4500-NO2 B	<0.1	mg/L	0.1	9/24/99
Nitrogen as Nitrate	CALC.	0.7	mg/L		9/24/99
Nitrate plus Nitrite	SM 4500-NO3 F	0.7	mg/L	0.1	9/30/99
Organic Nitrogen	CALCULATION	0.71	mg/L		9/30/99
Total Kjeldahl Nitrogen	EPA 351.3	1.66	mg/L	0.03	9/30/99
Total Phosphorous as P	EPA 365.3	0.48	mg/L	0.05	10/04/99
Total Phosphate	CALCULATION	1.5	mg/L		10/04/99
Phosphorus, Dissolved	EPA 365.3	0.16	mg/L	0.05	10/04/99
Metals Digestion for ICP	EPA 200.7				9/27/99
Metals Digestion for GFAA	SM 3030E				9/27/99
Cadmium	EPA 200.7	<0.005	mg/L	0.005	11/11/99
Copper	EPA 200.7	0.017	mg/L	0.015	11/11/99
Lead	SM 3113B	0.007	mg/L	0.005	11/03/99
Mercury	EPA 245.1	<0.0002	mg/L	0.0002	10/05/99
Zinc	EPA 200.7	0.15	mg/L	0.02	11/11/99
Filtration for Diss Metals					9/24/99
Cadmium, Dissolved	EPA 200.7	<0.005	mg/L	0.005	10/08/99
Copper, Dissolved	EPA 200.7	<0.015	mg/L	0.015	10/08/99
Lead, Dissolved	EPA 200.9	<0.005	mg/L	0.005	9/30/99
Mercury, Dissolved	EPA 245.1	<0.0002	mg/L	0.0002	10/05/99
Zinc, Dissolved	EPA 200.7	<0.02	mg/L	0.02	10/08/99
Calcium	EPA 200.7	13.	mg/L	1.	11/11/99
Magnesium	EPA 200.7	2.	mg/L	1.	11/11/99
Hardness, Total (Ca & Mg)	SM 2340B	40	mg/L	7.	11/11/99
4,4'-DDE	EPA 608	ND	ug/L	1.0	10/01/99
Extraction	EPA 608				9/29/99
Surrogate:	EPA 608				10/01/99
***Dibutylchlorendate	EPA 608	70	% Recovery		10/01/99

Bolin Laboratories Inc.

17631 N. 25th Avenue • Phoenix, Arizona 85023
(602) 942 8220 • FAX (602) 942 1050

Matrix: Storm Water
Sample No: 9909-08696-001

Time Sampled: 18:00
Date Sampled: 9/23/1999

PARAMETER	METHOD	RESULTS	UNITS	PQL	DATE ANALYZED
Benzo (a) pyrene	EPA 625	ND	ug/L	5.0	10/09/99
Chrysene	EPA 625	ND	ug/L	5.0	10/09/99
Fluoranthene	EPA 625	ND	ug/L	5.0	10/09/99
Indeno (1,2,3-cd) pyrene	EPA 625	ND	ug/L	5.0	10/09/99
Pyrene	EPA 625	ND	ug/L	5.0	10/09/99
Extraction	EPA 625				9/30/99
Surrogate:	EPA 625				10/09/99
***2-Fluorophenol	EPA 625	36.9	% Recovery		10/09/99
***d6-Phenol	EPA 625	28.8	% Recovery		10/09/99
***d5-Nitrobenzene	EPA 625	55.0	% Recovery		10/09/99
***2-Fluorobiphenyl	EPA 625	71.1	% Recovery		10/09/99
***2,4,6-Tribromophenol	EPA 625	114	% Recovery		10/09/99
***d14-Terphenyl	EPA 625	82.7	% Recovery		10/09/99
Chromium	EPA 200.8	0.0093	mg/L	0.0005	10/28/99
Chromium, Dissolved	EPA 200.8	0.0006	mg/L	0.0005	10/12/99

EPA Method 625 performed by Legend Technical Services, St.Paul MN, #AZ0557.
TKN & Ammonia analyzed by Aquatic Consulting, Tempe AZ. #AZ0003.
Total and Dissolved Chromium analyzed by ACZ Laboratories, Steamboat Springs CO, #AZ0102.

Report revised on 11/24/99 to correct the method reference for Total and Dissolved Chromium.

Stephanie Urmao

Authorized Signatory
ADHS License No.: AZ0004

Bolin Laboratories Inc.

17631 N. 25th Avenue • Phoenix, Arizona 85023
(602) 942 8220 • FAX (602) 942 1050

Quality Control Data Report

Client: MCFC
Bolin Sample ID: 9909-08696

Analyte	Method	Date Analyzed	Spk Conc. (ppm)	MS %Rec	MSD %Rec	RPD	Blk (ppb)	ICV %Rec	CCV %Rec
COD	EPA 410.4	9/27/99	200	88	92	4	<PQL	94	90
Total Suspended Solids	EPA 160.1	9/28/99	N/A	N/A	N/A	N/A	<PQL	96	94
Nitrate + Nitrite	SM 4500 NO3 F	9/30/99	9.52	90	92	2	<PQL	99	90
Nitrite	SM 4500 NO2B	9/24/99	0.1	100	100	0	<PQL	100	100
Total Dissolved Solids	SM 2540C	9/29/99	N/A	N/A	N/A	N/A	<PQL	105	104
Total Phosphorous	EPA 365.3	10/4/99	0.1	90	110	20	<PQL	93	97
Dissolved Phosphorous	EPA 365.3	10/4/99	0.1	90	110	20	<PQL	93	97

MI is Matrix Interference
MS/MSD are Matrix Spikes
ICV is Initial Calibration Verification
CCV is Continuing Calibration Verification
RPD is Relative Percent Difference
BLK is a Blank
LFB is a Laboratory Fortified Blank

Data File: /chem/GCMS_3.i/99281.b/012a.d
Report Date: 12-Oct-1999 15:50

Legend Technical Services, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: blms 9/30
Level: LOW
Data Type: MS DATA
SpikeList File: 625.spk
Sublist File: all.sub
Method File: /chem/GCMS_3.i/99281.b/625w99281.m
Misc Info: blms 9/30

Client SDG: 99281
Fraction: SV

Operator:
SampleType: MS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6 bis(2-Chloroethyl)	100	49.8	49.80	12-158
8 Phenol C	200	52.2	26.10	5-112
9 2-Chlorophenol	200	118	59.00	12-134
10 1,3-Dichlorobenzen	100	57.8	57.80	0-172
11 1,4-Dichlorobenzen	100	58.6	58.60	20-124
12 1,2-Dichlorobenzen	100	60.0	60.00	32-129
14 bis(2-chloroisopro	100	82.8	82.80	36-166
16 Hexachloroethane	100	51.8	51.80	40-113
17 N-Nitroso-di-n-pro	100	59.7	59.70	0-230
21 Nitrobenzene	100	56.3	56.30	35-180
22 Isophorone	100	60.2	60.20	21-196
23 2-Nitrophenol C	200	135	67.50	29-182
24 2,4-Dimethylphenol	200	135	67.50	32-119
25 bis(2-Chloroethoxy	100	61.9	61.90	33-184
26 2,4-Dichlorophenol	200	135	67.50	39-135
27 1,2,4-Trichloroben	100	64.5	64.50	44-142
28 Naphthalene	100	64.2	64.20	21-133
32 Hexachlorobutadien	100	62.9	62.90	24-116
33 4-Chloro-3-methylp	200	137	68.50	22-147
37 2,4,6-Trichlorophe	200	153	76.50	37-144
42 Acenaphthylene	100	70.4	70.40	33-145
43 Dimethylphthalate	100	79.2	79.20	0-112
44 2,6-Dinitrotoluene	100	77.0	77.00	39-139
45 Acenaphthene C	100	73.7	73.70	47-145
47 2,4-Dinitrophenol	200	152	76.00	0-191
49 2,4-Dinitrotoluene	100	83.9	83.90	39-139
50 4-Nitrophenol P	200	61.3	30.65	0-132
52 Fluorene	100	73.9	73.90	59-121
53 4-Chlorophenyl-phe	100	72.6	72.60	25-158
54 Diethylphthalate	100	75.6	75.60	0-114
62 Hexachlorobenzene	100	118	118.00	0-152
63 Pentachlorophenol	200	160	80.00	14-176
64 Phenanthrene	100	74.6	74.60	54-120

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
65 Anthracene	100	74.4	74.40	27-133
67 Di-n-butylphthalat	100	81.3	81.30	1-118
68 Fluoranthene C	100	79.9	79.90	26-137
71 Pyrene	100	85.2	85.20	52-115
73 Butylbenzylphthala	100	112	112.00	0-152
74 3,3'-Dichlorobenzi	100	83.3	83.30	0-262
75 Benzo[a]anthracene	100	85.0	85.00	33-143
76 Chrysene	100	83.8	83.80	17-168
77 bis(2-Ethylhexyl)p	100	100	100.00	8-158
79 Di-n-octylphthalat	100	85.1	85.10	4-146
80 Benzo[b]fluoranthe	100	82.0	82.00	24-159
81 Benzo[k]fluoranthe	100	88.8	88.80	11-162
82 Benzo[a]pyrene C	100	83.2	83.20	17-163
83 Indeno[1,2,3-cd]py	100	97.3	97.30	0-171
84 Dibenz[a,h]anthrac	100	92.1	92.10	0-227
61 4-Bromophenyl-phen	100	73.7	73.70	53-127
40 2-Chloronaphthalen	100	71.5	71.50	60-118
57 4,6-Dinitro-2-meth	200	186	93.00	0-181

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 4 2-Fluorophenol	200	78.7	39.35	~~21-100~~
$ 7 Phenol-d5	200	52.4	26.20	~~10-94~~
$ 20 Nitrobenzene-d5	100	56.9	56.90	~~35-114~~
$ 39 2-Fluorobiphenyl	100	67.8	67.80	~~43-116~~
$ 60 2,4,6-Tribromophen	200	161	80.50	~~10-123~~
$ 72 Terphenyl-d14	100	75.4	75.40	~~33-141~~

10-175

Data File: /chem/GCMS_3.i/99281.b/013a.d
Report Date: 12-Oct-1999 15:50

Legend Technical Services, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: blmsd 9/30
Level: LOW
Data Type: MS DATA
SpikeList File: 625.spk
Sublist File: all.sub
Method File: /chem/GCMS_3.i/99281.b/625w99281.m
Misc Info: blmsd 9/30

Client SDG: 99281
Fraction: SV
Operator:
SampleType: MSD
Quant Type: ISTD

SPIKE	COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6	bis(2-Chloroethyl)	100	52.5	52.50	12-158
8	Phenol C	200	55.5	27.75	5-112
9	2-Chlorophenol	200	129	64.50	12-134
10	1,3-Dichlorobenzen	100	63.2	63.20	0-172
11	1,4-Dichlorobenzen	100	64.0	64.00	20-124
12	1,2-Dichlorobenzen	100	64.9	64.90	32-129
14	bis(2-chloroisopro	100	88.0	88.00	36-166
16	Hexachloroethane	100	56.2	56.20	40-113
17	N-Nitroso-di-n-pro	100	63.1	63.10	0-230
21	Nitrobenzene	100	60.8	60.80	35-180
22	Isophorone	100	66.1	66.10	21-196
23	2-Nitrophenol C	200	152	76.00	29-182
24	2,4-Dimethylphenol	200	146	73.00	32-119
25	bis(2-Chloroethoxy	100	65.8	65.80	33-184
26	2,4-Dichlorophenol	200	146	73.00	39-135
27	1,2,4-Trichloroben	100	69.9	69.90	44-142
28	Naphthalene	100	69.7	69.70	21-133
32	Hexachlorobutadien	100	68.4	68.40	24-116
33	4-Chloro-3-methylp	200	144	72.00	22-147
37	2,4,6-Trichlorophe	200	163	81.50	37-144
42	Acenaphthylene	100	75.5	75.50	33-145
43	Dimethylphthalate	100	85.0	85.00	0-112
44	2,6-Dinitrotoluene	100	86.5	86.50	39-139
45	Acenaphthene C	100	79.2	79.20	47-145
47	2,4-Dinitrophenol	200	165	82.50	0-191
49	2,4-Dinitrotoluene	100	89.8	89.80	39-139
50	4-Nitrophenol P	200	66.9	33.45	0-132
52	Fluorene	100	79.0	79.00	59-121
53	4-Chlorophenyl-phe	100	78.2	78.20	25-158
54	Diethylphthalate	100	81.0	81.00	0-114
62	Hexachlorobenzene	100	129	129.00	0-152
63	Pentachlorophenol	200	171	85.50	14-176
64	Phenanthrene	100	79.8	79.80	54-120

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
65 Anthracene	100	77.6	77.60	27-133
67 Di-n-butylphthalat	100	84.5	84.50	1-118
68 Fluoranthene C	100	83.2	83.20	26-137
71 Pyrene	100	91.5	91.50	52-115
73 Butylbenzylphthala	100	121	121.00	0-152
74 3,3'-Dichlorobenzi	100	103	103.00	0-262
75 Benzo[a]anthracene	100	90.4	90.40	33-143
76 Chrysene	100	89.8	89.80	17-168
77 bis(2-Ethylhexyl)p	100	106	106.00	8-158
79 Di-n-octylphthalat	100	89.5	89.50	4-146
80 Benzo[b]fluoranthe	100	87.0	87.00	24-159
81 Benzo[k]fluoranthe	100	93.0	93.00	11-162
82 Benzo[a]pyrene C	100	86.4	86.40	17-163
83 Indeno[1,2,3-cd]py	100	104	104.00	0-171
84 Dibenz[a,h]anthrac	100	92.9	92.90	0-227
61 4-Bromophenyl-phen	100	78.6	78.60	53-127
40 2-Chloronaphthalen	100	76.8	76.80	60-118
57 4,6-Dinitro-2-meth	200	204	102.00	0-181

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 4 2-Fluorophenol	200	85.1	42.55	21-100
$ 7 Phenol-d5	200	55.2	27.60	10-94
$ 20 Nitrobenzene-d5	100	61.5	61.50	35-114
$ 39 2-Fluorobiphenyl	100	70.9	70.90	43-116
$ 60 2,4,6-Tribromophen	200	170	85.00	10-123
$ 72 Terphenyl-d14	100	79.8	79.80	33-141

10-175

Data File: /chem/GCMS_3.i/99281.b/018a.d
Report Date: 12-Oct-1999 15:50

Legend Technical Services, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: 8759-1 MS
Level: LOW
Data Type: MS DATA
SpikeList File: 625.spk
Sublist File: all.sub
Method File: /chem/GCMS_3.i/99281.b/625w99281.m
Misc Info: 8759-1 MS

Client SDG: 99281
Fraction: SV

Operator:
SampleType: MS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6 bis(2-Chloroethyl)	100	74.1	74.10	12-158
8 Phenol C	200	71.7	35.85	5-112
9 2-Chlorophenol	200	169	84.50	12-134
10 1,3-Dichlorobenzen	100	84.8	84.80	0-172
11 1,4-Dichlorobenzen	100	87.2	87.20	20-124
12 1,2-Dichlorobenzen	100	88.7	88.70	32-129
14 bis(2-chloroisopro	100	119	119.00	36-166
16 Hexachloroethane	100	70.9	70.90	40-113
17 N-Nitroso-di-n-pro	100	86.4	86.40	0-230
21 Nitrobenzene	100	83.8	83.80	35-180
22 Isophorone	100	90.0	90.00	21-196
23 2-Nitrophenol C	200	206	103.00	29-182
24 2,4-Dimethylphenol	200	183	91.50	32-119
25 bis(2-Chloroethoxy	100	94.0	94.00	33-184
26 2,4-Dichlorophenol	200	211	105.50	39-135
27 1,2,4-Trichloroben	100	99.2	99.20	44-142
28 Naphthalene	100	97.6	97.60	21-133
32 Hexachlorobutadien	100	96.8	96.80	24-116
33 4-Chloro-3-methylp	200	221	110.50	22-147
37 2,4,6-Trichlorophe	200	257	128.50	37-144
42 Acenaphthylene	100	118	118.00	33-145
43 Dimethylphthalate	100	148	148.00*	0-112
44 2,6-Dinitrotoluene	100	141	141.00*	39-139
45 Acenaphthene C	100	125	125.00	47-145
47 2,4-Dinitrophenol	200	305	152.50	0-191
49 2,4-Dinitrotoluene	100	178	178.00*	39-139
50 4-Nitrophenol P	200	123	61.50	0-132
52 Fluorene	100	140	140.00*	59-121
53 4-Chlorophenyl-phe	100	137	137.00	25-158
54 Diethylphthalate	100	156	156.00*	0-114
62 Hexachlorobenzene	100	216	216.00*	0-152
63 Pentachlorophenol	200	302	151.00	14-176
64 Phenanthrene	100	142	142.00*	54-120

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
65 Anthracene	100	139	139.00*	27-133
67 Di-n-butylphthalat	100	157	157.00*	1-118
68 Fluoranthene C	100	151	151.00*	26-137
71 Pyrene	100	171	171.00*	52-115
73 Butylbenzylphthala	100	228	228.00*	0-152
74 3,3'-Dichlorobenzi	100	305	305.00*	0-262
75 Benzo[a]anthracene	100	169	169.00*	33-143
76 Chrysene	100	168	168.00	17-168
77 bis(2-Ethylhexyl)p	100	205	205.00*	8-158
79 Di-n-octylphthalat	100	171	171.00*	4-146
80 Benzo[b]fluoranthe	100	172	172.00*	24-159
81 Benzo[k]fluoranthe	100	157	157.00	11-162
82 Benzo[a]pyrene C	100	169	169.00*	17-163
83 Indeno[1,2,3-cd]py	100	200	200.00*	0-171
84 Dibenz[a,h]anthrac	100	180	180.00	0-227
61 4-Bromophenyl-phen	100	135	135.00*	53-127
40 2-Chloronaphthalen	100	115	115.00	60-118
57 4,6-Dinitro-2-meth	200	380	190.00*	0-181

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 4 2-Fluorophenol	200	99.7	49.85	21-100
$ 7 Phenol-d5	200	5.71	2.85*	10-94
$ 20 Nitrobenzene-d5	100	82.0	82.00	35-114
$ 39 2-Fluorobiphenyl	100	108	108.00	43-116
$ 60 2,4,6-Tribromophen	200	310	155.00*	10-123
$ 72 Terphenyl-d14	100	150	150.00*	33-141

10-175

Data File: /chem/GCMS_3.i/99281.b/012.d
Report Date: 11-Oct-1999 16:20

Legend Technical Services, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: blms 9/30
Level: LOW
Data Type: MS DATA
SpikeList File: water.spk
Sublist File: all.sub
Method File: /chem/GCMS_3.i/99281.b/8270w99281.m
Misc Info: blms 9/30

Client SDG: 99281
Fraction: SV

Operator:
SampleType: MS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
8 Phenol C	200	52.2	26.10	12-110
9 2-Chlorophenol	200	118	59.00	27-123
11 1,4-Dichlorobenzen	100	58.6	58.60	36-97
17 N-Nitroso-di-n-pro	100	80.2	80.20	41-116
27 1,2,4-Trichloroben	100	64.5	64.50	39-98
33 4-Chloro-3-methylp	200	137	68.50	23-97
45 Acenaphthene C	100	73.7	73.70	46-118
49 2,4-Dinitrotoluene	100	83.9	83.90	24-96
50 4-Nitrophenol P	200	61.3	30.65	10-80
63 Pentachlorophenol	200	160	80.00	9-103
71 Pyrene	100	85.2	85.20	26-127

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 4 2-Fluorophenol	200	78.7	39.35	21-100
$ 7 Phenol-d5	200	52.4	26.20	10-94
$ 20 Nitrobenzene-d5	100	56.9	56.90	35-114
$ 39 2-Fluorobiphenyl	100	67.8	67.80	43-116
$ 60 2,4,6-Tribromophen	200	181	90.50	10-123
$ 72 Terphenyl-d14	100	75.4	75.40	33-141

Data File: /chem/GCMS_3.i/99281.b/013.d
Report Date: 11-Oct-1999 16:20

Legend Technical Services, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: blmsd 9/30
Level: LOW
Data Type: MS DATA
SpikeList File: water.spk
Sublist File: all.sub
Method File: /chem/GCMS_3.i/99281.b/8270w99281.m
Misc Info: blmsd 9/30

Client SDG: 99281
Fraction: SV

Operator:
SampleType: MSD
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
8 Phenol C	200	55.5	27.75	12-110
9 2-Chlorophenol	200	129	64.50	27-123
11 1,4-Dichlorobenzen	100	64.0	64.00	36-97
17 N-Nitroso-di-n-pro	100	85.2	85.20	41-116
27 1,2,4-Trichloroben	100	69.9	69.90	39-98
33 4-Chloro-3-methylp	200	144	72.00	23-97
45 Acenaphthene C	100	79.2	79.20	46-118
49 2,4-Dinitrotoluene	100	89.8	89.80	24-96
50 4-Nitrophenol P	200	66.9	33.45	10-80
63 Pentachlorophenol	200	170	85.00	9-103
71 Pyrene	100	91.5	91.50	26-127

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 4 2-Fluorophenol	200	85.1	42.55	21-100
$ 7 Phenol-d5	200	55.2	27.60	10-94
$ 20 Nitrobenzene-d5	100	61.5	61.50	35-114
$ 39 2-Fluorobiphenyl	100	70.9	70.90	43-116
$ 60 2,4,6-Tribromophen	200	197	98.50	10-123
$ 72 Terphenyl-d14	100	79.8	79.80	33-141

Data File: /chem/GCMS_3.i/99281.b/018.d
Report Date: 11-Oct-1999 17:22

Legend Technical Services, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: 8759-1 MS
Level: LOW
Data Type: MS DATA
SpikeList File: water.spk
Sublist File: all.sub
Method File: /chem/GCMS_3.i/99281.b/8270w99281.m
Misc Info: 8759-1 MS

Client SDG: 99281
Fraction: SV

Operator:
SampleType: MS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
8 Phenol C	200	71.7	35.85	12-110
9 2-Chlorophenol	200	169	84.50	27-123
11 1,4-Dichlorobenzen	100	87.2	87.20	36-97
17 N-Nitroso-di-n-pro	100	112	112.00	41-116
27 1,2,4-Trichloroben	100	99.2	99.20*	39-98
33 4-Chloro-3-methylp	200	221	110.50*	23-97
45 Acenaphthene C	100	125	125.00*	46-118
49 2,4-Dinitrotoluene	100	178	178.00*	24-96
50 4-Nitrophenol P	200	123	61.50	10-80
63 Pentachlorophenol	200	302	151.00*	9-103
71 Pyrene	100	171	171.00*	26-127

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 4 2-Fluorophenol	200	99.7	49.85	21-100
$ 7 Phenol-d5	200	5.71	2.85*	10-94
$ 20 Nitrobenzene-d5	100	82.0	82.00	35-114
$ 39 2-Fluorobiphenyl	100	108	108.00	43-116
$ 60 2,4,6-Tribromophen	200	344	172.00*	10-123
$ 72 Terphenyl-d14	100	150	150.00*	33-141

ACZ

Inorganic QC Summary

2773 Downhill Drive
Steamboat Springs, CO 80487
(800) 334-5493
Fax: (970) 879-2216

Sample Identification

ACZ Project #	L24953
Client	Bolin Laboratories
Client Project ID	99-2253-SM
Date Received	09/30/1999
Date Reported	10/25/1999

ACZ Lab ID	Client Sample ID	Sample Matrix	Date Sampled	Date Received
L24953-01	9909-08696-01	Waste Water	09/23/1999 6:00:00 PM	09/30/1999

Comments:

REPQC001.07.97.03

ACZ

2773 Downhill Drive
Steamboat Springs, CO 80487
(800) 334-5493
Fax: (970) 879-2216

Project Summary

ACZ Project #	L24953
Client	Bolin Laboratories
Client Project ID	99-2253-SM
Date Received	09/30/1999
Date Reported	10/25/1999

ACZ Lab ID: L24953-

Product Description	Method	01
Chromium, dissolved	M200.8 ICP-MS	X
Chromium, total	M200.8 ICP-MS	X

ACZ

Inorganic QC Summary

2773 Downhill Drive
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Calibration Verification - Control Samples

Cover Page

ACZ Project #	L24953
QC Report ID	QC2970-A
Client	Bolin Laboratories
Client Project ID	99-2253-SM
Date Received	09/30/1999
Date Reported	10/25/1999

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Metal Analysis

Metals - ICPMS

Dissolved Metals

Additional analytical runs may have been required as a result of matrix effects and/or instrumental problems.
Re-analysis data immediately follows initial QC data as outlined in above sequence.

REPQC001.07.97.03

ACZ

Inorganic QC Summary

2773 Downhill Drive
Steamboat Springs, CO 80487
(800) 334-5493
Fax: (970) 879-2216

Matrix Aqueous
Analysis Group Metals - ICPMS
QC Report ***Calibration Verification-Control Samples***

ACZ Project #	L24953
QC Report ID	QC2970-A
Client	Bolin Laboratories
Client Project ID	99-2253-SM
Date Received	09/30/1999
Date Reported	10/25/1999

Dissolved Metals

Method M200.8 ICP-MS

Element	ACZ ID	QC Type	PCN / SCN#	Analysis Date	Concentration (mg/L)				Control Limits,%		Q
					True	Found	Q	Rec (%)	Lower	Upper	
Chromium	WG89696QCS	QCS	MS990920-9	10/12/1999 4:21:00 PM	0.05	0.0523		104.6	90	110	
Chromium	WG89696ICS2	ICS	MS990920-1	10/12/1999 5:36:00 PM	0.1	0.100		100.3	90	110	
Chromium	WG89696ICS3	ICS	MS990920-1	10/12/1999 7:01:00 PM	0.1	0.100		100.4	90	110	

ACZ	Client
✓	

ACZ

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Steamboat Springs, CO 80487
(800) 334-5493
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Calibration Verification - Blanks

Cover Page

ACZ Project #	*L24953*
QC Report ID	*QC2970-A*
Client	*Bolin Laboratories*
Client Project ID	*99-2253-SM*
Date Received	*09/30/1999*
Date Reported	*10/25/1999*

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Metal Analysis

Metals - ICPMS

Dissolved Metals

Additional analytical runs may have been required as a result of matrix effects and/or instrumental problems.
Re-analysis data immediately follows initial QC data as outlined in above sequence.

ACZ

Inorganic QC Summary

2773 Downhill Drive
Steamboat Springs, CO 80487
(800) 334-5493
Fax: (970) 879-2216

Matrix Aqueous
Analysis Group Metals - ICPMS
QC Report ***Calibration Verification-Blanks***

ACZ Project #	L24953
QC Report ID	QC2970-A
Client	Bolin Laboratories
Client Project ID	99-2253-SM
Date Received	09/30/1999
Date Reported	10/25/1999

Dissolved Metals

Method M200.8 ICP-MS

Element	ACZ ID	QC Type	Analysis Date	Concentration			Control Limits		Units	Q
				MDL	Found	Q	Lower	Upper		
Chromium	WG89696ICB1	ICB	10/12/1999 4:14:00 P	0.00005		U	-0.00011	0.00011	mg/L	
Chromium	WG89696ICB2	ICB	10/12/1999 5:44:00 P	0.00005		U	-0.00011	0.00011	mg/L	
Chromium	WG89696ICB3	ICB	10/12/1999 7:08:00 P	0.00005		U	-0.00011	0.00011	mg/L	
Chromium	WG89696ICB4	ICB	10/12/1999 7:47:00 P	0.00005		U	-0.00011	0.00011	mg/L	

ACZ	Client
✓	

ACZ

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Steamboat Springs, CO 80487
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Spike Verification

Cover Page

ACZ Project #	L24953
QC Report ID	QC2970-A
Client	Bolin Laboratories
Client Project ID	99-2253-SM
Date Received	09/30/1999
Date Reported	10/25/1999

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Metal Analysis

Metals - ICPMS

Dissolved Metals

Additional analytical runs may have been required as a result of matrix effects and/or instrumental problems.
Re-analysis data immediately follows initial QC data as outlined in above sequence.

ACZ

Inorganic QC Summary

2773 Downhill Drive
Steamboat Springs, CO 80487
(800) 334-5493
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Matrix *Aqueous*
Analysis Group *Metals - ICPMS*
QC Report ***Spike Verification***

ACZ Project #	*L24953*
QC Report ID	*QC2970-A*
Client	*Bolin Laboratories*
Client Project ID	*99-2253-SM*
Date Received	*09/30/1999*
Date Reported	*10/25/1999*

Dissolved Metals

Method M200.8 ICP-MS

Element	ACZ ID	QC Type	PCN / SCN#	Analysis Date	Concentration						Rec (%)	Control Limits,%		Q
					Added	Sample	Q	Spike	Q	Units		Lower	Upper	
Chromium	L24971-04AS	AS	MS990920-5	10/12/1999 7:24:00	0.1	0.0001	B	0.0857		mg/L	85.6	70	130	

ACZ	Client
✓	

ACZ

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Method Verification - Control Samples

Cover Page

ACZ Project #	L24953
QC Report ID	QC2970-A
Client	Bolin Laboratories
Client Project ID	99-2253-SM
Date Received	09/30/1999
Date Reported	10/25/1999

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Metal Analysis

Metals - ICPMS

Dissolved Metals

Additional analytical runs may have been required as a result of matrix effects and/or instrumental problems.
Re-analysis data immediately follows initial QC data as outlined in above sequence.

ACZ

Inorganic QC Summary

2773 Downhill Drive
Steamboat Springs, CO 80487
(800) 334-5493
Fax: (970) 879-2216

Matrix Aqueous
Analysis Group Metals - ICPMS
QC Report ***Method Verification-Control Samples***

ACZ Project #	L24953
QC Report ID	QC2970-A
Client	Bolin Laboratories
Client Project ID	99-2253-SM
Date Received	09/30/1999
Date Reported	10/25/1999

Dissolved Metals

Method M200.8 ICP-MS

Element	ACZ ID	QC Type	PCN / SCN#	Analysis Date	Concentration (mg/L) True	Found	Q	Rec (%)	Control Limits,% Lower	Upper	Q
Chromium	WG89696LFB	LFB	MS990920-5	10/12/1999 4:36:00 P	0.1	0.104		104	85	115	

ACZ / Client

ACZ

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Steamboat Springs, CO 80487
(800) 334-5493
Fax: (970) 879-2216

Method Verification - Blanks

Cover Page

ACZ Project #	*L24953*
QC Report ID	*QC2970-A*
Client	*Bolin Laboratories*
Client Project ID	*99-2253-SM*
Date Received	*09/30/1999*
Date Reported	*10/25/1999*

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Metal Analysis

Metals - ICPMS

Dissolved Metals

Additional analytical runs may have been required as a result of matrix effects and/or instrumental problems.
Re-analysis data immediately follows initial QC data as outlined in above sequence.

ACZ

Inorganic QC Summary

2773 Downhill Drive
Steamboat Springs, CO 80487
(800) 334-5493
Fax: (970) 879-2216

Matrix	*Aqueous*
Analysis Group	*Metals - ICPMS*
QC Report	***Method Verification-Blank***

ACZ Project #	*L24953*
QC Report ID	*QC2970-A*
Client	*Bolin Laboratories*
Client Project ID	*99-2253-SM*
Date Received	*09/30/1999*
Date Reported	*10/25/1999*

Dissolved Metals

Method M200.8 ICP-MS

Element	ACZ ID	QC Type	Analysis Date	Concentration (mg/L)			Control Limits		Q
				MDL	Found	Q	Lower	Upper	
Chromium	WG89696LRB	LRB	10/12/1999 4:29:00 PM	0.00005		U	-0.00011	0.00011	
Chromium	WG89696PBW	PBW	10/12/1999 6:38:00 PM	0.00005	0.000		-0.00011	0.00011	

ACZ	Client
✓	

ACZ

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Analysis Run Log

Cover Page

ACZ Project #	*L24953*
QC Report ID	*QC2970-A*
Client	*Bolin Laboratories*
Client Project ID	*99-2253-SM*
Date Received	*09/30/1999*
Date Reported	*10/25/1999*

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Metal Analysis

Metals (Dissolved) by ICP-MS WG89696

ACZ

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(800) 334-5493
Fax: (970) 879-2216

QC Report | *Analysis Run Log*

Analysis | *Metals (Dissolved) by ICP-MS*

ACZ Project # L24953
Client Bolin Laboratories
Client Project ID 99-2253-SM
Date Received 09/30/1999
Date Reported 10/25/1999

Workgroup: WG89696

ACZ ID	Measure Date	Dilution	Cr
WG89696ICS1	10/12/1999	1	X
WG89696ICB1	10/12/1999	1	X
WG89696QCS	10/12/1999	1	X
WG89696LRB	10/12/1999	1	X
WG89696LFB	10/12/1999	1	X
L24909-17AS	10/12/1999	1	X
ZZZ	10/12/1999	5	X
WG89696ICS2	10/12/1999	1	X
WG89696ICB2	10/12/1999	1	X
ZZZ	10/12/1999	5	X
ZZZ	10/12/1999	100	X
ZZZ	10/12/1999	5	X
ZZZ	10/12/1999	5	X
ZZZ	10/12/1999	5	X
ZZZ	10/12/1999	5	X
WG89696PBW	10/12/1999	1	X
L24953-01	10/12/1999	2	X
WG89696ICS3	10/12/1999	1	X
WG89696ICB3	10/12/1999	1	X
ZZZ	10/12/1999	2	X
L24971-04AS	10/12/1999	1	X
WG89696ICS4	10/12/1999	1	X
WG89696ICB4	10/12/1999	1	X

ACZ | Client

ACZ
2773 Downhill Drive
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(800) 334-5493
Fax: (970) 879-2216

QC SUMMARY

QC REFERENCE

QC Report Types

(1)	Calibration Verification - Blanks	Verifies that there is no or minimal contamination in the instrument calibration.
(2)	Calibration Verification - Control Samples	Verifies the accuracy of the instrument calibration.
(3)	Method Verification - Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
(4)	Method Verification - Control Samples	Verifies the accuracy of the method, including the prep procedure.
(5)	Spike Verification	Determines sample matrix interferences, if any.
(6)	Duplicate Verification	Verifies the precision of the instrument and/or method.

QC Sample Types

ICV	Initial Calibration Verification	QCS	Quality Control Sample
CCV	Continuing Calibration Verification	ICS	Instrument Check Sample
LCSW	Laboratory Control Sample - Water	LFB	Laboratory Fortified Blank
LCSS	Laboratory Control Sample - Soil	LFM	Laboratory Fortified Matrix
ICB	Initial Calibration Blank	AS	Analytical (Post Digestion) Spike
CCB	Continuing Calibration Blank	MS	Matrix Spike
LRB	Laboratory Reagent Blank	LFMD	Laboratory Fortified Matrix Duplicate
PBW	Prep Blank - Water	ASD	Analytical Spike (Post Digestion) Duplicate
PBS	Prep Blank - Soil	MSD	Matrix Spike Duplicate
		DUP	Sample Duplicate

Unique ACZ QC Summary Qualifiers (Q)

Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.
Y	This sample, instead of one of yours, was used as the quality control sample for the workgroup batch.
X	QC is out of control. See Case Narrative.
W	Poor recovery for Silver quality control is accepted because Silver often precipitates with Chloride.
V	High blank data accepted because sample concentration is 10 times higher than blank concentration
U	Analyte was analyzed for but not detected at the indicated MDL
T	High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL.
S	ICV/QCS sample not part of workgroup; analyzed immediately following instrument calibration as part of a prevous workgroup.
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
J	Oraganic: Analyte concentration detected at a value between the MDL & PQL.
B	Inorganic: Analyte concentration detected at a value between the MDL & PQL. Organic: Analyte found in daily blank.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA 600/4-80-032. Prescribed Procedures for Measurement of Radioactivity in Drinking Water, August 1980.
(5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update II, September 1994.
(6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the reported (rounded) values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) All matrices for Organic analyses are reported on an "as received" basis, except for TPH-IR analyses on soils which are reported on a dry weight basis.
(5) The PCN/SCN header on the QC reports stands for Primary Control Number/Secondary Control Number. All stock chemicals are given a PCN and any reagent made at the bench level is assigned a SCN. These numbers track our standards and chemicals so that any reagent is traceable to a manufacturer's certificate of analysis.

This report is subject to the "Terms & Conditions" section in ACZ Laboratories, Inc. 1999 Analytical Services Fee Schedule.

Bolin Laboratories Inc.

17631 N. 25th Avenue • Phoenix, Arizona 85023
(602) 942 8220 • FAX (602) 942 1050

Quality Control Data Report

Analysis Date: 10/5/99
Bolin Sample ID's: 9909-08456-001; (9909-08528-002,004; 9909-08696-001 Diss); 9909-08674-001,002; 9909-08675-001; 9909-08679-001; 9909-08683-001,**002**

Analyte	Method	Spk Conc. (ppm)	MS %Rec	MSD %Rec	Blk (ppm)	ICV %Rec	CCV %Rec
Mercury	EPA 245.1/EPA 7470A	0.005	120	116	<PQL	98	108

NOTES:
Sample in bold listed above has been spiked for quality control purposes.
MI = Matrix Interference
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
MS = Matrix Spike
MSD = Matrix Spike Duplicate.
RPD = Relative Percent Difference
BLK = Blank

Bolin Laboratories Inc.

17631 N. 25th Avenue • Phoenix, Arizona 85023
(602) 942 8220 • FAX (602) 942 1050

Quality Control Data Report

Analysis Date: 10/8/99
Bolin Sample ID: **9909-8430-010 not in icv/ccv set** 9909-8696-001 Diss;9909-9019-001Diss

Analyte	Method	Spk Conc. (ppm)	MS %Rec	MSD %Rec	Blk (ppm)	ICV %Rec	CCV %Rec
Cadmium	EPA 200.7	0.4	102	99	<PQL	103	105
Copper	EPA 200.7	1	102	100	<PQL	96	99
Chromium	EPA 200.7	0.5	104	101	<PQL	101	102
Nickel	EPA 200.7	1	104	101	<PQL	103	105
Zinc	EPA 200.7	1	104	102	<PQL	107	110

MI Matrix Interference
ICV Initial Calibration Verification
CCV Continuing Calibration Verification
MS is Matrix Spike
MSD is a Matrix Spike Duplicate.
RPD is Relative Percent Difference
BLK is a Blank

QC Report

QC Parameter	Sample Result	Method Blank Result	QCS % Rec	Duplicate Result	Duplicate RPD	Spike Result	Spike % Rec
Batch ID: NH3-1182 QC ID: BE10105 Samples: BE10105							
Ammonia - N	0.95		99.0	0.97	2.08	1.90	95.0
Batch ID: TKN-1123 QC ID: BE10118 Samples: BE10105							
Total Kjeldahl Nitrogen	1.03		97.0	1.11	7.48	5.60	91.4

Bolin Laboratories Inc.

17631 N. 25th Avenue • Phoenix, Arizona 85023
(602) 942 8220 • FAX (602) 942 1050

Quality Control Data Report

Analysis Date: 10/5/99
Bolin Sample ID's: 9909-08683-003,004,**005**,006,009; 9909-08684-001; 9909-08696-001
9909-08719-001; 9909-08722-001,002,003,004; 9909-08838-001

Analyte	Method	Spk Conc. (ppm)	MS %Rec	MSD %Rec	Blk (ppm)	ICV %Rec	CCV %Rec
Mercury	EPA 245.1/EPA 7470A	0.005	120	122	<PQL	108	96

NOTES:
Sample in bold listed above has been spiked for quality control purposes.
MI = Matrix Interference
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
MS = Matrix Spike
MSD = Matrix Spike Duplicate.
RPD = Relative Percent Difference
BLK = Blank

Bolin Laboratories Inc.

17631 N. 25th Avenue • Phoenix, Arizona 85023
(602) 942 8220 • FAX (602) 942 1050

Quality Control Data Report

Analysis Date: 11/11/99

Bolin Sample ID: **9910-9095-001**,002;9910-8696-001;9910-8667-001;9910-8913-001;9910-8914-001;9910-9202-001;9910-9203-001;9910-9204-001;9910-9250-001;9910-9251-001

Analyte	Method	Spk Conc. (ppm)	MS %Rec	MSD %Rec	Blk (ppm)	ICV %Rec	CCV %Rec
Barium	EPA 200.7	1	101	108	<PQL	102	102
Cadmium	EPA 200.7	0.4	96	103	<PQL	102	101
Calcium	EPA 200.7	30	MI 84	MI 87	<PQL	100	100
Chromium	EPA 200.7	0.5	100	106	<PQL	104	103
Copper	EPA 200.7	1	102	109	<PQL	102	102
Iron	EPA 200.7	1	94	100	<PQL	102	101
Magnesium	EPA 200.7	30	96	97	<PQL	99	98
Manganese	EPA 200.7	1	98	104	<PQL	102	101
Potassium	EPA 200.7	30	103	105	<PQL	99	100
Sodium	EPA 200.7	30	96	100	<PQL	102	104
Zinc	EPA 200.7	1	92	99	<PQL	103	101

MI Matrix Interference
ICV Initial Calibration Verification
CCV Continuing Calibration Verification
MS is Matrix Spike
MSD is a Matrix Spike Duplicate.
RPD is Relative Percent Difference
BLK is a Blank

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Quality Control Data Report

Analysis Date: 11/3/99

Bolin Sample ID's: **9910-9095-001 NOT IN ICV/CCV SET** ;9909-8502-005;9909-8545-001;9909-8616-001,002;9909-8679-001;9909-8684-001;9909-8696-001

Analyte	Method	Spk Conc. (ppm)	MS %Rec	MSD %Rec	Blk (ppm)	ICV %Rec	CCV %Rec
Arsenic	EPA 200.9/SM 3113B	0.020	MI 124	MI 120	<PQL	105	105
Lead	EPA 200.9/SM 3113B	0.020	110	107	<PQL	105	100
Selenium	EPA 200.9/SM 3113B	0.020	100	95	<PQL	100	100

NOTES:

Sample in bold listed above has been spiked for quality control purposes.
MI = Matrix Interference
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
MS = Matrix Spike
MSD = Matrix Spike Duplicate.
BLK = Blank

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Quality Control Data Report

Analysis Date: 10/8/99
Bolin Sample ID: **9909-8430-010 not in icv/ccv set** 99009-8696-001;9909-9019-001 diss

Analyte	Method	Spk Conc. (ppm)	MS %Rec	MSD %Rec	Blk (ppm)	ICV %Rec	CCV %Rec
Cadmium	EPA 200.7	0.4	102	99	<PQL	103	105
Chromium	EPA 200.7	0.5	104	101	<PQL	101	102
Nickel	EPA 200.7	1	104	101	<PQL	103	105
Zinc	EPA 200.7	1	104	102	<PQL	107	110

MI Matrix Interference
ICV Initial Calibration Verification
CCV Continuing Calibration Verification
MS is Matrix Spike
MSD is a Matrix Spike Duplicate.
RPD is Relative Percent Difference
BLK is a Blank

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Quality Control Data Report

Analysis Date: 9/30/99
Bolin Sample ID's: **9909-08615-001**; 9909-08528-002 diss; 9909-08528-004 diss; 9909-08696 001 diss; 9909-07992-001; 9909-08296-001; 9909-08415-001

Analyte	Method	Spk Conc. (ppm)	MS %Rec	MSD %Rec	Blk (ppm)	ICV %Rec	CCV %Rec
Cadmium	EPA 200.9/SM 3113B	0.002	100	95	<PQL	95	95
Lead	EPA 200.9/SM 3113B	0.020	110	110	<PQL	95	100
Selenium	EPA 200.9/SM 3113B	0.020	105	100	<PQL	95	100

NOTES:
Sample in bold listed above has been spiked for quality control purposes.
MI = Matrix Interference
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
MS = Matrix Spike
MSD = Matrix Spike Duplicate.
BLK = Blank

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Quality Control Data Report

Bolin Sample ID: 9909-8696-001, 9909-8788-001
Matrix Spike ID: 9909-8696-001

Analyte	Method	Date Analyzed	Spk Conc. (ppb)	Blk (ppb)	Blk Spk Conc. ppb	Blk-Spk %Rec	Blk Spk Dup Conc. ppb	Blk Spk Dup %Rec	RPD	MS Conc.	MS %Rec	ICV %Rec
Alpha-BHC	EPA 608	10/1/99	5.0	<PQL	4.17	83	4.36	87	4	4.57	91	105
Gamma-BHC (Lindane)	EPA 608	10/1/99	5.0	<PQL	4.61	92	4.82	96	4	4.86	97	105
Beta-BHC	EPA 608	10/1/99	5.0	<PQL	4.95	99	5.10	102	3	5.02	100	104
Delta-BHC	EPA 608	10/1/99	5.0	<PQL	4.89	98	5.04	101	3	5.07	101	103
Heptachlor	EPA 608	10/1/99	5.0	<PQL	4.49	90	4.56	91	2	5.02	100	103
Aldrin	EPA 608	10/1/99	5.0	<PQL	4.23	85	4.32	86	2	4.62	92	102
Heptachlor Epoxide	EPA 608	10/1/99	5.0	<PQL	4.73	95	4.79	96	1	5.15	103	101
Endosulfan I	EPA 608	10/1/99	5.0	<PQL	4.60	92	4.62	92	0	5.13	103	101
4,4'-DDE	EPA 608	10/1/99	5.0	<PQL	4.43	89	4.42	88	0	4.91	98	98
Dieldrin	EPA 608	10/1/99	5.0	<PQL	4.70	94	4.74	95	1	5.05	101	100
Endrin	EPA 608	10/1/99	5.0	<PQL	5.47	109	5.48	110	0	6.26	125	97
4,4'-DDD	EPA 608	10/1/99	5.0	<PQL	5.09	102	5.02	100	1	5.58	112	100
Endosulfan II	EPA 608	10/1/99	5.0	<PQL	4.72	94	4.60	92	3	5.44	109	99
4,4'-DDT	EPA 608	10/1/99	5.0	<PQL	5.24	105	5.11	102	3	5.74	115	98
Endrin Aldehyde	EPA 608	10/1/99	5.0	<PQL	4.69	94	4.78	96	2	4.94	99	101
Endosulfan Sulfate	EPA 608	10/1/99	5.0	<PQL	5.06	101	4.97	99	2	5.48	110	100

ICV Initial Calibration Verification
CCV Continuing Calibration Verification
BLK is a Blank
Blk Spk is a Blank Spike
Blk Spk Dup is a Blank Spike Duplicate
RPD is Relative Percent Difference
MS is Matrix Spike

QC Report

QC Parameter	Sample Result	Method Blank Result	QCS % Rec	Duplicate Result	Duplicate RPD	Spike Result	Spike % Rec
Batch ID: NH3-1182 QC ID: BE10105		Samples: BE10105					
Ammonia - N	0.95		99.0	0.97	2.08	1.90	95.0
Batch ID: TKN-1123 QC ID: BE10118		Samples: BE10105					
Total Kjeldahl Nitrogen	1.03		97.0	1.11	7.48	5.60	91.4

Bolin Laboratories Inc. — CHAIN OF CUSTODY RECORD

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Page 1 of 1

Laboratory Sample No. 99109-086916 LOS

CLIENT INFORMATION

Client Name	Address	City	State	Zip	Phone	Fax
FLOOD CONTROL DIST	2801 W DURANGO	PHOENIX	AZ	85009	602 506-8401	602 506 4601

Project Name	Project Number	Contact	P.O. No.	Fax Results ☐	QC Report ☒	Special Detection Limits ☐
MESA NPDES		JULIE COX				

SAMPLE TYPE CODES

DW=Drinking Water, S=Soil/Solid, WW=Wastewater, T=Travel Blank, SW=Surface Water, F=Food, GW=Groundwater, G=Sludge, O=Other

TURN AROUND TIME

☒ Standard 10 - 15 Day
☐ Other

Laboratory Authorization Required for Rush ★ ★

REQUESTED ANALYSES

Client's Sample Identification	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance	No. of Containers	pH ✓ (Bolin Use Only)	See attached MESA list	COD	TDS	TSS	NH3 NO3	TKN	TP	Metals	BOD	625	LAB NO
M1C092399	9/23	1800	HORNE & 6TH	X		SW		11	✓	X										01

Comments / Special Instructions: *Cd, Cr, Cu, Pb, Hg, Zn, Ca, Mg, Hard Total + Dissolved.

SAMPLE CONDITION UPON RECEIPT

No. of Containers	11
Temperature	2°C
Custody Seals	Y N
Seals Intact	Y N
Preserved	Y N

RELINQUISHED BY

	Signature	Printed Name	Date	Time
①	Julie Cox	JULIE COX	9-24-99	1038 AM
②				
③				

SAMPLES RECEIVED BY

Signature	Printed Name	Date	Time
Sutherland	K. Sutherland	9/24/99	1038

WHITE-LAB YELLOW-LAB PINK-CLIENT

MESA NPDES STORMWATER ANALYSIS FORM

SITE _____ DATE _____

GRAB SAMPLE

			Bottle(s) Required
X	BOD5	405.1	1- 1 liter plastic, unpreserved
X	Fecal Coliform	9222C	1- bacterial bottle, tablet preserved
X	Fecal Streptococci	9230C	1- bacterial bottle, tablet preserved
X	Oil and Grease	413.1	1- 1 liter amber glass, unpreserved
X	Methylene Chloride	EPA 624	4- 40 mL glass vials, unpreserved
X	Toluene	EPA 624	from above
X	E-coli		1- bacterial bottle, tablet preserved

COMPOSITE SAMPLE

Inorganic Chemistry - Non Metals

			X	Nitrogen, Organic	351.4
X	COD	410.1	X	Nitrogen, Kjeldahl	351.3
X	Total Dissolved Solids	160.1	X	Phosphorous, Total	365.2
X	Total Suspended Solids	160.1	X	Phosphorous, Dissolved	365.3
X	Nitrogen, Ammonia	350.3	X	Hardness	130.2
X	Nitrogen, Nitrate	353.2			

Inorganic Chemistry - Metals, Total and Dissolved

X	Cadmium, Total	213.2	X	Lead, Total	239.2
X	Cadmium, dissolved	213.2	X	Lead, dissolved	239.2
X	Chromium, Total	218.2	X	Mercury, Total	245.1
X	Chromium, dissolved	218.2	X	Mercury, dissolved	245.1
X	Copper, Total	220.2	X	Zinc, Total	289.2
X	Copper, dissolved	220.2	X	Zinc, dissolved	289.2

Organic Compounds

X	DDE	608	X	Fluroanthene	625
X	Benzo(a) Pyrene	625	X	Indeno (1,2,3-cd) Pyrene	625
X	Chrysene	625	X	Pyrene	625

Records

Sixth (Mesa 1)

Horne and Sixth Street

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	6th St Home		DATE	9/30/99	
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	Ken
SAMPLER MODEL NUMBER			RAINGAGE SERIAL ASSET NUMBER		
PT SERIAL NUMBER/ TRX ASSET NUMBER			RAINGAGE SERIAL ASSET NUMBER		

	CHECKED SERVICED CALIBRATED	[illegible]	[illegible]	[illegible]	[illegible]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Check Station, ReStart program, check to see program running before closing

Ken

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	6th St & Horne	DATE	9/24/99
ARRIVAL TIME		DEPARTURE TIME	
SAMPLER MODEL NUMBER		SAMPLER SERIAL NUMBER	
SERIAL NUMBER/ ASSET NUMBER		CONTROLLER SERIAL NUMBER	

BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Replace cleaned bottles, restart program

EQUIPMENT CLEANING CHECKLIST

Data Cell #1 Rain 0.54

Site	6th St + Home
Date	9/24/99
Time	0725
Serviced By:	[illegible]

Yes	**Data Downloaded to DTU?**

1. Halt program — Collect bottles, Halt program to take to Bolin labs
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

SITE:	6TH & HOZME

DATE:	09-23-99	TIME:	1545

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: (YES) NO 0.53" rain

IF NO, WHAT WERE PROBLEM(S): 8 bottles full. Added ice. No samples taken. JRC/AJO

FIELD PARAMETERS:

Discharge at time of Grabs		cfs
Effluent pH		s.u.
Effluent Temperature		°C

GRAB SAMPLES: Take grab samples from discharge only!

Grab Samples Taken?	YES	(NO)
Preservatives added to bottles?	YES	(NO)

EQUIPMENT CLEANING CHECKLIST

Site	Cl+4 + Horne
Date	7/23/99
Time	AM
Serviced By:	MW

Cell #2 No sampler

Yes	Data Downloaded to DTU?

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

	Pump approximately 1/2 gallon tap water through tubing.
	Pump approximately 1/2 gallon of Liquinox through tubing.
	Pump a large quantity of tap water through tubing.
	Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
	Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

EQUIPMENT CLEANING CHECKLIST

Site	HORNE & 6TH ST
Date	9-22-99
Time	1100
Serviced By:	JRC/RWH

No	**Data Downloaded to DTU?**

1. Halt program — Changed moisture filter. Restarted program.
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

	Pump approximately 1/2 gallon tap water through tubing.
	Pump approximately 1/2 gallon of Liquinox through tubing.
	Pump a large quantity of tap water through tubing.
	Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
	Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

SITE:	Mesa 1 Hanc@6th

DATE:	9/20/99	TIME:	0945

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

Program Was not Started
Only had .18" of Precip.
Started Sampler CK

FIELD PARAMETERS:

Discharge at time of Grab		cfs
Effluent pH		S.U.
Effluent Temperature		C

GRAB SAMPLES: Take grab samples from discharge only!

Grab Samples Taken?	YES	NO
Preservatives added to bottles?	YES	NO

EQUIPMENT CLEANING CHECKLIST

Site	6th & Heine
Date	9/15/99
Time	
Serviced By:	(Rau)

copy data to cell #6 0.34 Rain

Yes	**Data Downloaded to DTU?**

Remove 6 bottles of samples.
Sampler worked very good. All in jars

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

Leave program Halted.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	MOSA 1	[redacted]	9/13/99
[redacted]		[redacted]	Rain
[redacted]		[redacted]	
[redacted]		[redacted]	

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Mobson & Broadway 0.20 rain 3 bottles had samples

6th & Horne 0.04 rain no flows, no samples

Horne & Grandview 0.02 rain " "

Falcon Field 0.00 — " "

Broadway & Lindsay 0.01 - " "

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	City of Mesa 1	[redacted]	9/7/99
[redacted]		[redacted]	Allen
[redacted]		[redacted]	
[redacted]		[redacted]	

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS			
Broadway & Dobson	check sampler	Re Start program	
Horne & 6th ST	Put in AC backup	"	"
Horne & Glendale	"	"	"
Falcon Field	"	"	"
Broadway & Lindsay	"	"	"

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	HORNE & 6TH ST	DATE	9/2/99
ARRIVAL TIME		DEPARTURE TIME	
		SERVICED BY	JRC/RM/CFK
SAMPLER MODEL NUMBER		SAMPLER SERIAL ASSET NUMBER	H0195 11338
PT SERIAL NUMBER ASSET NUMBER		RAINGAGE SERIAL ASSET NUMBER	

	CHECKED SERVICED CALIBRATED	CONDITION	REPLACED	NEEDS REPLACING	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	60 length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	6.0 - read 5. 4.0 - read 3. depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
* CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	450 mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Replace 900 with 800 unit.

Calibrated PT & volume.

Cleaned tubing.

* Entered 400 ml in order to calibrate to 450ml.

Date: 01/27/1999

EQUIPMENT CLEANING CHECKLIST

Site	6th St & Horne		
Date	9/1/99	**Time**	
Serviced By:	[illegible]		

NO	**Data Downloaded to DTU?**

Unit Failed to copy data or transfer.

1. Halt program Station to be Changed 9/2/99.
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

	Pump approximately 1/2 gallon tap water through tubing.
	Pump approximately 1/2 gallon of Liquinox through tubing.
	Pump a large quantity of tap water through tubing.
	Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
	Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

SITE	TORNE & 6TH

DATE	8/31/99	TIME	1540

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

distributor jammed, sampler overflowed

FIELD PARAMETERS:

[redacted]	~~8.9~~	[redacted]
[redacted]	8.4	[redacted]
[redacted]	5	[redacted]

precip 0.24 in.

GRAB SAMPLES: Take grab samples from discharge only!

[redacted]	YES	NO
[redacted]	YES	NO

EQUIPMENT CLEANING CHECKLIST

Site	Horne & 6th ST
Date	8/30/99
Time	
Serviced By:	RCW

NO **Data Downloaded to DTU?**

Data would not transfer, Sampler off upon arrival. Found Distributor arm hose out of dist arm. Reinsert hose back in.

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

precip 0.14

- [x] Pump approximately 1/2 gallon tap water through tubing.
- [x] Pump approximately 1/2 gallon of Liquinox through tubing.
- [x] Pump a large quantity of tap water through tubing.
- [x] Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
- [x] Pump approximately 1/2 - 1 gallon deionized water through tubing.

Bring Bottles in for cleaning. Sampler full again.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVEN. LOG SHEET

SITE:	HORNE & 6TH ST

DATE:	8/27/99	TIME:	2031

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES (NO)

IF NO, WHAT WERE PROBLEM(S):

Sampler flooded + water 1" deep in equipment (traffic box); no samples collected

FIELD PARAMETERS:

Discharge at time of Grabs		cfs
Effluent pH		s.u.
Effluent Temperature		°C

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples Taken?	YES	(NO)
Preservatives added to bottles?	YES	(NO)

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	C, 4th & Mesa	DATE	8/23/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	(Rew)
SAMPLER MODEL NUMBER		SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER		RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Robson & Broadway 0.04 8/19/99 Restart program check bottles

8/19/99 over fills

* 6th & Horne, Shut down, pull sampler 0.27 rain bottles & sampler

Horne & Glendora, 0.45 rain 6 bottles full, clean line, bring bottle in

Falcon Field, 0.89 rain, Flush lines, return bottles.

8/19/99

Lindsey & Broadway — 0.09 — Restart program —

Date: 06/22/1999

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Hume & 6th St	DATE	8/12/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY	RW		
SAMPLER MODEL NUMBER	8930	SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER		RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED/ SERVICED/ CALIBRATED	CONDITION	NEEDS REPAIR?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE ✓	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES ✓	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING ✓	YES NO	GOOD FAIR POOR	YES NO	YES NO	50' length (feet)
SAMPLER PUMP TUBING ✓	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME ✓	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING ✓	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Adjust tube length in sampler. Calibrate and take samples. Volume is now at 450 ml Restart program and check everything out

RW

Date: 01/27/1999

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Citrus Mesa	DATE	8/11/99
ARRIVAL TIME	DEPARTURE TIME	SERVICED BY	[illegible]
SAMPLER MODEL NUMBER		SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER		RAINGAGE SERIAL/ ASSET NUMBER	

Copy date Hornet 6th Level #3 Shut Station down

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED	NEEDS REPLACING	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Dobson & Broadway – Program running, no rain/flow
Hornet 6th sampler full of water, SHUT DOWN, Copy data!
Hornet & Manfview no flow precip. 0.04" left running
Falcon Field, took samples, Copy data, left running
Broadway – Lindsey, no rain, no flow left running

Date: 01/27/1999

EQUIPMENT CLEANING CHECKLIST

Site	Horne & 6th St		
Date	8/10/99	**Time**	
Serviced By:	(Nw)		

	Data Downloaded to DTU?

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

Replace clean bottles, reset program.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

MESA 1

[redacted]	MeSA Stations	[redacted]	8/2/99
[redacted]		[redacted]	Rec
[redacted]		[redacted]	
[redacted]		[redacted]	

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS

Dobson & Broadway — Re Start program

Lindsey & Broadway — " "

Horne & 6th — " "

Horne & Grandview — Re Start program

EQUIPMENT CLEANING CHECKLIST

Site	SIXTH		
Date	7-19-99	**Time**	1305
Serviced By:	DEC		

✓	**Data Downloaded to DTU?**

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	6th & Horne	DATE	7/8/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY	RW		
SAMPLER MODEL NUMBER		SAMPLER SERIAL ASSET NUMBER	
PT SERIAL NUMBER ASSET NUMBER		RAINGAGE SERIAL ASSET NUMBER	

no rain or flow left running

RW

	CHECKED SERVICED CALIBRATED	CONDITION	REPLACED	NEEDS REPLACING	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Horne & Grandview no rain, program left running

Falcon Field " " "

Lindsey & Broadway " " "

Date: 01/27/1999

EQUIPMENT CLEANING CHECKLIST

Site	Horner & 6th St.
Date	7/7/99
Time	
Serviced By:	Rau

Yes #2	Data Downloaded to DTU?

Sampler full, bottles floating and Holder full of water, clean and check, restart.

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	Pump approximately 1/2 gallon of Liquinox through tubing.
✓	Pump approximately 1/2 gallon tap water through tubing.
✓	Pump approximately 1/2 liter Nitric Acid (pH 3 - 4) through tubing.
✓	Pump approximately 1 - 2 gallons deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

Note: Dis arm jammed, reset hose, check
Looked okay

Rau

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	6th St @ Horne			DATE	7/1/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	
SAMPLER MODEL NUMBER				SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER				RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS open bottles and start program

Lindsay (Mesa 2)

near Broadway and Lindsay Roads (Windsor)

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	Meadow Springs	[redacted]	9/30/99
[redacted]		[redacted]	RCW
[redacted]		[redacted]	
[redacted]		[redacted]	

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Restart program. Correct program, found program read start on Rain or Flow. Change to start on Rain + Flow. Restart program.

RCW

EQUIPMENT CLEANING CHECKLIST

Site	Broadway + Lindsay
Date	9/24/99
Time	
Serviced By:	(Rw)

Data call #3

Yes	**Data Downloaded to DTU?**

Clean 1 sample bottle, flush intake line

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Broadway & Lindsay			DATE	9/24/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	
SAMPLER MODEL NUMBER				SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER				RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED/ SERVICED/ CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Reprogram Sampler, add rain fall. Restart program. Sampler collected samples as it was set to activate on flow Level.

STORM EVEN . LOG SHEET

SITE:	LINDSAY

DATE:	09-23-99	TIME:	1640

1 bottle full.
No samples taken

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES (NO)

IF NO, WHAT WERE PROBLEM(S):

rainfall did not register on computer keypad. Rainfall 0.2 per DEQ from ALERT gage.

JRC/AJO

FIELD PARAMETERS:

Discharge at time of Grabs		cfs
Effluent pH		s.u.
Effluent Temperature		°C

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples Taken?	YES	(NO)
Preservatives added to bottles?	YES	(NO)

EQUIPMENT CLEANING CHECKLIST

Site	Broadway & Leadway
Date	9/23/99
Time	AM
Serviced By:	Rlw

Cell #4 wash / Sample bottle, Alg 4

yes	Data Downloaded to DTU?

Restart program.

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	Pump approximately 1/2 gallon tap water through tubing.
✓	Pump approximately 1/2 gallon of Liquinox through tubing.
✓	Pump a large quantity of tap water through tubing.
✓	Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
✓	Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

EQUIPMENT CLEANING CHECKLIST

Site	BROADWAY & LINDSAY
Date	09-22-99
Time	0915
Serviced By:	JRC/DEG/CFE/RWM

No	**Data Downloaded to DTU?**

Changed moisture filter.
Restarted program.

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Broadway & Lindsay	DATE	9/22/99
ARRIVAL TIME		DEPARTURE TIME	
		SERVICED BY	JRC/CFK/DEG/RWH
SAMPLER MODEL NUMBER	1350	SAMPLER SERIAL ASSET NUMBER	H07925665
PRIMARY SERIAL ASSET NUMBER		RAINGAGE SERIAL ASSET NUMBER	

	CHECKED FOR PROPER OPERATION	CONDITION	CHANGED	NEEDS REPLACING	NOTES
BATTERY VOLTAGE	YES ~~NO~~	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES ~~NO~~ N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	~~YES~~ ~~NO~~	~~GOOD~~ FAIR POOR	YES ~~NO~~	YES ~~NO~~	
RAINGAGE	YES ~~NO~~	~~GOOD~~ FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	~~YES~~ NO	~~GOOD~~ FAIR POOR	YES ~~NO~~	YES ~~NO~~	54 — but 60' prog. length (feet)
SAMPLER PUMP TUBING	~~YES~~ NO	~~GOOD~~ FAIR POOR	YES ~~NO~~	YES ~~NO~~	
SAMPLER DISTRIBUTOR TUBING	~~YES~~ NO	~~GOOD~~ FAIR POOR	YES ~~NO~~	YES ~~NO~~	
DEPTH SENSOR	~~YES~~ NO	~~GOOD~~ FAIR POOR	YES ~~NO~~	YES NO ?	3.75 depth (inch)
CALIBRATE DEPTH SENSOR	~~YES~~ NO	~~GOOD~~ FAIR POOR	~~N/A~~	N/A ?	
CALIBRATE SAMPLE VOLUME	~~YES~~ NO	~~GOOD~~ FAIR POOR	N/A	N/A	450 mL — bet. 425 progr
CLEANED SAMPLE INTAKE TUBING	~~YES~~ NO	~~GOOD~~ FAIR POOR	~~N/A~~	~~N/A~~	

NOTES / ACTIONS calibrated PT, dil pump sample, and exchange sample unit.

STORM EVENT LOG SHEET

SITE:	Mesa 2 BWY Lindsay

DATE:	9/20/99	TIME:	0930

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

Water Level Gauge Failed to read flow. SK

FIELD PARAMETERS:

Discharge at time of Grab:		cfs
Effluent pH:		S.U.
Effluent Temperature:		°C

GRAB SAMPLES: Take grab samples from discharge only!

Grab Samples Taken?	YES	NO
Preservatives added to bottles?	YES	NO

EQUIPMENT CLEANING CHECKLIST

Site	Broadway & Lindsay		
Date	9/15/99	**Time**	
Serviced By:	RW		

cell #8 0.4 Rain 2 bottles had samples not full

Yes	**Data Downloaded to DTU?**

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	MoSA 2	DATE	9/13/99
ARRIVAL TIME		DEPARTURE TIME	
		SERVICED BY	[illegible]
SAMPLER MODEL NUMBER		SAMPLER SERIAL / ASSET NUMBER	
RAINGAGE SERIAL / ASSET NUMBER		RAINGAGE SERIAL / ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	[illegible]	[illegible]	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Dobson & Broadway 0.20 rain 3 bottles had samples

6th & Horne, 0.04 rain no flows, no samples

Horne & Grand View 0.02 rain " "

Falcon Field 0.00 — " "

Broadway & Lindsey 0.01 - " "

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	City of Mesa 2	[redacted]	9/7/99
[redacted]		[redacted]	[illegible]
[redacted]		[redacted]	
[redacted]		[redacted]	

	[redacted]				
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS

Broadway & Dobson	check sampler	Re Start program	
Horne & 6th ST	Put in AC backup	"	"
Horne & Glandview	"	"	"
Falcon Field	"	"	"
Broadway & Lindsay	"	"	"

EQUIPMENT CLEANING CHECKLIST

Site	Broadway ~~Dobson & Lindsey~~		
Date	9/1/99	**Time**	
Serviced By:	Rew		

Cell #3 and DTU

Yes	**Data Downloaded to DTU?**

Bring bottles in for cleaning.

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

SITE	BROADWAY & LINDSEY

DATE	8/31/99	TIME	1715

no samples collected
5 bottles full

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

FIELD PARAMETERS:

[redacted]		[redacted]
[redacted]		[redacted]
[redacted]		[redacted]

precip 0.69 in

GRAB SAMPLES: Take grab samples from discharge only!

[redacted]	YES	NO
[redacted]	YES	NO

EQUIPMENT CLEANING CHECKLIST

Site	Broadway & Lindsay		
Date	8/30/99	**Time**	
Serviced By:	Alan		

No	**Data Downloaded to DTU?**

0.10 Rain, No flows, No samples

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

	Pump approximately 1/2 gallon tap water through tubing.
	Pump approximately 1/2 gallon of Liquinox through tubing.
	Pump a large quantity of tap water through tubing.
	Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
	Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVEN. LOG SHEET

SITE:	BROADWAY & LINDSAY

DATE:	8/27/99	TIME:	

Bottles empty; no samples collected.

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

_____

_____

_____

_____

FIELD PARAMETERS:

Discharge at time of Grabs		cfs
Effluent pH		s.u.
Effluent Temperature		°C

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples Taken?	YES	NO
Preservatives added to bottles?	YES	NO

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Broadway + Lindsay			DATE	8/24/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	MW
SAMPLER MODEL NUMBER				SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER				RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	4" depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Check and calibate Pressure transducer

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	C.H.-10 E Mesa	DATE	8/23/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	(Rea)
SAMPLER MODEL NUMBER		SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER		RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Dobson & Broadway 0.04 8/19/99 Restart program check bottles

* 6th & Horne, Shut down, pull sampler 0.27 rain 8/19/99 over fills bottles & sumpter

Horne & Glendora, 0.45 rain 6 bottles full, clean line, bring bottle in

Falcon Field, 0.89 rain, flush lines, return bottles.

Lindsey & Broadway 8/19/99 0.09 - Restart program -

DATE: 06/22/1999

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Lindsay & Broadway	DATE	8/19/99
ARRIVAL TIME		[illegible] TIME		[illegible]	New
SAMPLER MODEL NUMBER		[illegible]	
GPS SERIAL NUMBER / ASSET NUMBER		RAINGAGE SERIAL / ASSET NUMBER	

Copy data, error print tz, record capial cell #3

	CHECKED WORKING CORRECTLY	AS FOUND	AS LEFT	NEEDS REPAIR/ADJ	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS No flow, No sample.
Rain amount 0.13

Date: 01/27/1999

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	City of Mesa	[redacted]	8/11/99
[redacted]		[redacted]	
[redacted]			
[redacted]			

Copy date Horne & 6th Cell #3 Shot Station down

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Dobson & Broadway – Program running, no rain/flow
Horne & 6th sampler full of water, SHUT DOWN, Copy data!
Horne & Manfview no flow precip. 0.04" left running
Falcon Field, took samples, Copy data, left running
Broadway - Lindsay, no rain, no flow left running

Date: 01/27/1999

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

MESA 2

	MeSA Stations		8/2/99

BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS

Dobson & Broadway — ReStart program

Lindsey & Broadway — " "

Horne & 6th — " "

Horne & Grandview — ReStart program

EQUIPMENT CLEANING CHECKLIST

Site	LINDSAY		
Date	7-19-99	**Time**	1400
Serviced By:	DEC		

✓	**Data Downloaded to DTU?**

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Lindley & Broadway			DATE	7/7/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	Rai
SAMPLER MODEL NUMBER				SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER				RAINGAGE SERIAL/ ASSET NUMBER	

Copy data #4, 4 bottles sampled
clean + flush bottles and line
Restart program Rai

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Broadway & Lindsay			DATE	7/1/97
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	RW
SAMPLER MODEL NUMBER				SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER				RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Open bottles, start program

RW

Falcon (Mesa 3)

at Mesa Falcon Field Airport

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Falcon Field	[redacted]	9/30/99
ARRIVAL TIME		DEPARTURE TIME	[redacted] (RW)
SAMPLER MODEL NUMBER		[redacted]	
PT SERIAL NUMBER ASSET NUMBER		[redacted]	

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Check station, restart program, check to see program running. (RW)

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Falcon Field	DATE	9/24/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY		SAMPLER MODEL NUMBER	
SAMPLER SERIAL/ ASSET NUMBER		PT SERIAL NUMBER/ ASSET NUMBER	
RAINGAGE SERIAL/ ASSET NUMBER			

	CHECKED SERVICED CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Check Station, no samples, restart program

Rain Read 0.08"

EQUIPMENT CLEANING CHECKLIST

Site	Falcon Field
Date	9/24/99
Time	
Serviced By:	[illegible]

0.08 Rain, No samples Left Running.

No	**Data Downloaded to DTU?**

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

	Pump approximately 1/2 gallon tap water through tubing.
	Pump approximately 1/2 gallon of Liquinox through tubing.
	Pump a large quantity of tap water through tubing.
	Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
	Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

EQUIPMENT CLEANING CHECKLIST

Site	Falcon Field,
Date	9/23/99
Time	AM
Serviced By:	[illegible]

no rain, no sample

no	Data Downloaded to DTU?

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

	Pump approximately 1/2 gallon tap water through tubing.
	Pump approximately 1/2 gallon of Liquinox through tubing.
	Pump a large quantity of tap water through tubing.
	Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
	Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

EQUIPMENT CLEANING CHECKLIST

Site	FALCON
Date	9-22-99
Time	1020
Serviced By:	JRC/RWN

NO	**Data Downloaded to DTU?**

Changed moisture filter.
Restarted program.

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

SITE:	Mesa 3 Falcon Field

DATE:	9 20/99	TIME:	10:11 AM

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

Site worked well. .12" of Precip
4 full bottles. CK

FIELD PARAMETERS:

Discharge at time of Grabs		cfs
Effluent pH		
Effluent Temperature		°C

GRAB SAMPLES: Take grab samples from discharge only!

Grab Samples Taken?	YES	NO
Preservatives added to bottles?	YES	NO

EQUIPMENT CLEANING CHECKLIST

Site	Falcon Field		
Date	9/15/99	**Time**	
Serviced By:	[illegible]		

cell # 9 Bring in 4 bottles for cleaning.

Yes	**Data Downloaded to DTU?**

Rain 0.23

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	MoSA 3	[redacted]	9/13/99
[redacted]		[redacted]	(Rw)
[redacted]		[redacted]	
[redacted]		[redacted]	

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Dobson & Broadway 0.20 rain 3 bottles had samples

6th & Horne, 0.04 rain no flows, no samples

Horne & Grand View 0.02 rain " "

Falcon Field 0.00 – " "

Broadway & Lindsey 0.01 – " "

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	City of Mesa 3	[redacted]	9/7/99
[redacted]		[redacted]	[illegible]
[redacted]		[redacted]	
[redacted]		[redacted]	

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS

Broadway & Dobson	check sampler	Re Start program	
Horne & 6th ST	Put in AC backup	"	"
Horne & Groundview	"	"	"
Falcon Field	"	"	"
Broadway & Lindsay	"	"	"

EQUIPMENT CLEANING CHECKLIST

Site	Falcon Field		
Date	9/1/99	**Time**	
Serviced By:	Rene		

cell #2 del DTU unit.

yes	**Data Downloaded to DTU?**

1. Halt program Bring in bottles for cleaning.
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

SITE:	FALCON

DATE:	8/31/99	TIME:	1650

no samples collected
5 bottles full

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: (YES) NO

IF NO, WHAT WERE PROBLEM(S):

FIELD PARAMETERS:

Sampler Start Time	
Effluent pH	
Effluent Temperature	

precip 0.33 in.
flow 3.34 cfs

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples Taken?	YES	(NO)
Preservatives added to bottles?	YES	(NO)

EQUIPMENT CLEANING CHECKLIST

Site	Falcon Field		
Date	8/30/99	**Time**	
Serviced By:	Alan		

NO	**Data Downloaded to DTU?**

No flow, no samples, program running, waiting on rain and flow. 0.12 precip

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

	Pump approximately 1/2 gallon tap water through tubing.
	Pump approximately 1/2 gallon of Liquinox through tubing.
	Pump a large quantity of tap water through tubing.
	Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
	Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

SITE:	FALCON FIELD

DATE:	8/27/99	TIME:	1925

Bottles empty; no samples collected.

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

FIELD PARAMETERS:

Discharge at time of Grabs		cfs
Effluent pH		s.u.
Effluent Temperature		°C

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples Taken?	YES	NO
Preservatives added to bottles?	YES	NO

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	C.H. of Mesa			DATE	8/23/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	(Rew)
SAMPLER MODEL NUMBER				SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER				RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Dobson & Broadway 0.04 8/19/99 ReStart program check bottles

* 6th & Horne, Shut down, pull sampler 0.27 rain 8/19/99 over fills bottles & sumpter

Horne & Claudia, 0.45 rain 6 bottles full, clean line, bring bottle in

Falcon Field, 0.89 Rain, Flush lines, return bottles.

Lindsey & Broadway — 8/19/99 0.09 — ReStart program —

Rev. 06/22/1999

EQUIPMENT CLEANING CHECKLIST

Site	Falcon Field		
Date	8/20/99	**Time**	
Serviced By:	Ray		

No	**Data Downloaded to DTU?**

1. Halt program C, 89 Rain Put in clean bottles Re Start program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Falcon Field	DATE	8/19/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY			
SAMPLER MODEL NUMBER		SAMPLER SERIAL ASSET NUMBER	
PT SERIAL NUMBER ASSET NUMBER		RAINGAGE SERIAL ASSET NUMBER	

Copy data, 4 jars of sample water

	CHECKED SERVICED CALIBRATED	CONDITION	REPLACED	NEEDS REPLACING	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Wash and clean bottles, Copy data flush system and enter program.

Data cell #

Date: 01/27/1999

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	Citgo Mesa	[redacted]	8/11/99
[redacted]		[redacted]	[illegible]
[redacted]		[redacted]	
[redacted]		[redacted]	

Copy data Horned 6th Cell #3 Shut Station down

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Dobson & Broadway – Program running, no rain/flow
Horned 6th sampler full of water, Shut Down, Copy data!
Horned & Manfview no flow pressure. 0.04' left running
Fatron Field, took samples, Copy data, left running
Broadway – Lindsey, no rain, no flow left running

Date: 01/27/1999

EQUIPMENT CLEANING CHECKLIST

Site	Falcon Field		
Date	8/11/99	**Time**	
Serviced By:	[illegible]		

Yes	**Data Downloaded to DTU?**

Cell # 1 old DTU

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

Restart program

EQUIPMENT CLEANING CHECKLIST

Site	Falcon Field		
Date	8/2/99	**Time**	
Serviced By:	(MW)		

NO	**Data Downloaded to DTU?**

1. Halt program — ReStart program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

[redacted]	Falcon Field
[redacted]	7/29/99
[redacted]	1450

DID EQUIPMENT OPERATE PROPERLY DURING EVENT? YES NO

IF NO, WHAT WERE PROBLEM(S):

No flow, no grab samples. Pick up & fill bottles.

FIELD PARAMETERS:

[redacted]		[redacted]
[redacted]		[redacted]
[redacted]		[redacted]

GRAB SAMPLES: Take grab samples from discharge only!

[redacted]	YES	NO
[redacted]	YES	NO

EQUIPMENT CLEANING CHECKLIST

Site	FALCON		
Date	7-19-99	**Time**	1340
Serviced By:	DEG		

✓	**Data Downloaded to DTU?**

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Falcon Field			DATE	7/7/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	MW
SAMPLER MODEL NUMBER				SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER				RAINGAGE SERIAL/ ASSET NUMBER	

precip 0.12 checked bottles and area
no flow / no samples
Re Start program.

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Falcon Field			DATE	7/1/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	
SAMPLER MODEL NUMBER				SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER				RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Start program and open bottles

Grandview (Mesa 4)

Horne and Grandview

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Harnes Grandview	DATE	9/30/99
ARRIVAL TIME		DEPARTURE TIME	
		SERVICE BY	[illegible]
SAMPLER MODEL NUMBER		CONTROLLER SERIAL ASSET NUMBER	
PT SERIAL NUMBER ASSET NUMBER		RAINGAGE SERIAL ASSET NUMBER	

	CHECKED SERVICE	CONDITION	CLEANED	NEED REPAIR	NOTE
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Check Station, ReStart program, check to make sure program running before closing.

[illegible]

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Horne & Chandler	DATE	9/24/99
ARRIVAL TIME		DEPARTURE TIME	
		SERVICEMAN	Rem
SAMPLER MODEL NUMBER		BATTERY SERIAL ASSET NUMBER	
AC SERIAL NUMBER ASSET NUMBER		RAINGAGE SERIAL ASSET NUMBER	

	CHECKED FROM PREVIOUS VISIT	CONDITION	REPLACED	NEED REPLACING	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Replace cleaned bottles, restart program

EQUIPMENT CLEANING CHECKLIST

Site	Horne & Crandrice		
Date	7/24/99	**Time**	0745
Serviced By:	DW		

Cell # 2

Yes	**Data Downloaded to DTU?**

Remove bottles for cleaning. Rain Off

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

SITE:	HORNE & GRANDVIEW

DATE:	09-23-99	TIME:	1550

12.85 V battery
0.82" rainfall.
6 bottles fill. Added ice
No samples taken.
JRC/AJO

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: (YES) NO

IF NO, WHAT WERE PROBLEM(S):

FIELD PARAMETERS:

Discharge at time of Grabs		cfs
Effluent pH		s.u.
Effluent Temperature		°C

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples Taken?	YES	(NO)
Preservatives added to bottles?	YES	(NO)

EQUIPMENT CLEANING CHECKLIST

Site	Horne & Grandview
Date	9/23/99
Time	AM
Serviced By:	[illegible]

Cell #3 No sample taken

yes	**Data Downloaded to DTU?**

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

	Pump approximately 1/2 gallon tap water through tubing.
	Pump approximately 1/2 gallon of Liquinox through tubing.
	Pump a large quantity of tap water through tubing.
	Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
	Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

EQUIPMENT CLEANING CHECKLIST

Site	HORNE & GRANDVIEW		
Date	09-22-99	**Time**	1045
Serviced By:	JRC/RWM		

No	**Data Downloaded to DTU?**

Changed moisture filter.
Restarted program.

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

SITE	MESA 4 GRANDVIEW

DATE	9-20-99	TIME	

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

0.18" rain - seemed to work okay

FIELD PARAMETERS:

Discharge at time of sample		cfs
Effluent pH		
Effluent Temperature		C

GRAB SAMPLES: Take grab samples from discharge only!

Grab Samples Taken?	YES	NO
Preservatives added to bottles?	YES	NO

EQUIPMENT CLEANING CHECKLIST

Site	Horne & Grand View		
Date	9/15/99	**Time**	
Serviced By:	Rey		

Data cell #7

Yes	**Data Downloaded to DTU?**

Clean 3 bottles, copy data restart program

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	MoSA 4	[redacted]	9/13/99
[redacted]		[redacted]	[illegible]
[redacted]		[redacted]	
[redacted]		[redacted]	

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Dobson & Broadway 0.20 rain 3 bottles had samples

6th & Horne, 0.04 rain no flows, no samples

Horne & Grand View 0.02 rain " "

Falcon Field 0.00 — " "

Broadway & Lindsey 0.01 - " "

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

	City of Mesa 4		9/7/99

BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS

Broadway & Dobson	check sampler	Re Start program	
Horne & 6th ST	Put in AC backup	"	"
Horne & Grandview	"	"	"
Falcon Field	"	"	"
Broadway & Lindsay	"	"	"

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	HORNE & GRANDVIEW			DATE	9/2/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	RM/CFK/JRC
SAMPLER MODEL NUMBER	1350			SAMPLER SERIAL/ ASSET NUMBER	E07925069
PT SERIAL NUMBER/ ASSET NUMBER				RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
* SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	73 length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	cal 5.0 read 5.29 depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	435 mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS * entered 60' to calibrate sample volume.

Replaced 900 with 800' unit.

Calibrated PT & volume.

Cleaned tubing.

EQUIPMENT CLEANING CHECKLIST

Site	Horne + Chandler		
Date	9/1/99	**Time**	
Serviced By:	[illegible]		

No	**Data Downloaded to DTU?**

DTU unit will not cooperate transfer of data

1. Halt program Station to be changed out 9/2/99
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

	Pump approximately 1/2 gallon tap water through tubing.
	Pump approximately 1/2 gallon of Liquinox through tubing.
	Pump a large quantity of tap water through tubing.
	Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
	Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

SITE	HORNE & GRANDVIEW

DATE	8/31/99	TIME	1615

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES (NO)

IF NO, WHAT WERE PROBLEM(S):

distributor missed bottles (bottles 1/2 full)
& filled plastic housing

FIELD PARAMETERS:

[redacted]	0.9	[redacted]
[redacted]	8.3	[redacted]
[redacted]	4.9	[redacted]

precip 0.29 in

storm duration 1:56 – 3:47 pm

GRAB SAMPLES: Take grab samples from discharge only!

[redacted]	(YES)	NO
[redacted]	(YES)	NO

Falcon 0.67
1:52 – 2:30 pm

Lindsay
1:56 – 2:40 pm

EQUIPMENT CLEANING CHECKLIST

Site	Horne & Grandview		
Date	8/30/99	**Time**	
Serviced By:	Pleu		

DTU would not copy data.

NO	**Data Downloaded to DTU?**

1. Halt program — Machine off, Remove bottles for cleaning. Leave Sampler off as found. Precip O&C
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVEN LOG SHEET

SITE:	HORNE & GRANDVIEW

DATE:	8/27/99	TIME:	2025

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES (NO)

IF NO, WHAT WERE PROBLEM(S):

Sampler missed bottles and sampler base was filled with water; no samples collected

FIELD PARAMETERS:

Discharge at time of Grabs		cfs
Effluent pH		s.u.
Effluent Temperature		°C

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples Taken?	YES	(NO)
Preservatives added to bottles?	YES	(NO)

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	C.H. of Mesa			DATE	8/23/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	(Rew)
SAMPLER MODEL NUMBER				SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER				RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Robson & Broadway 0.04 8/19/99 Restart program check bottles

* 6th & Horne, Shut down, pull sampler 0.27 rain 8/19/99 over fills bottles & sampler

Horne & Glendale, 0.45 rain 6 bottles full, clean line, bring bottle in

Falcon Field, 0.89 rain, flush lines, return bottles.

Lindsey & Broadway – 8/19/99 0.09 – Restart program –

Rev. 06/22/1999

EQUIPMENT CLEANING CHECKLIST

Site	Horner Grandview		
Date	8/23/99	**Time**	
Serviced By:	RMW		

No	**Data Downloaded to DTU?**

0.07 precip on 8/19/99
Read 0.45 8/23/99

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

Remove bottles for cleaning program on Halt.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	City of Mesa	[redacted]	8/11/99
[redacted]		[redacted]	[illegible]
[redacted]			
[redacted]			

Copy date Horne & 6th Cell #3 Shot Station down

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Dobson & Broadway – Program running, no rain/flow
Horne & 6th sample full of water, SHUT DOWN, Copy date!
Horne & Manfview no flow pressure. 0.04 left running
Falcon Field, took samples, Copy date, left running
Broadway - Lindsay, no rain, no flow left running

Date: 01/27/1999

EQUIPMENT CLEANING CHECKLIST

Site	Horne & Grandview		
Date	8/10/99	**Time**	
Serviced By:	RW		

☐	**Data Downloaded to DTU?**

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

Replace bottles and restart program

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

MESA 4

SITE	MESA Stations	DATE	8/2/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	Rick
SAMPLER MODEL NUMBER		SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER		RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS

Dobson & Broadway — Re Start program

Lindsey & Broadway — " "

Horne & 6th — " "

Horne & Grandview — Re Start program

EQUIPMENT CLEANING CHECKLIST

Site	GRANDVIEW		
Date	7-19-99	**Time**	1310
Serviced By:	DEG		

✓	**Data Downloaded to DTU?**

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Horne & Blanchard			DATE	7/7/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	[illegible]
SAMPLER MODEL NUMBER				SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER				RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Copy data #3, bottles had water, and Holder 1/2 full. Clean and flush lines, bottles and Restart program

[illegible]

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Hom @ Grandview			DATE	7/1/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	
SAMPLER MODEL NUMBER				SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER				RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Start Program and remove bottle caps

Dobson (Mesa 5)

Dobson Road south of Broadway

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Dobson & Broadway		DATE	9/30/99	
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	RLW
SAMPLER MODEL NUMBER			SAMPLER SERIAL/ ASSET NUMBER		
PT SERIAL NUMBER/ ASSET NUMBER			RAINGAGE SERIAL/ ASSET NUMBER		

	CHECKED/ SERVICED/ CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Check sampler, restart program. check to see program running before closing station.

RLW

EQUIPMENT CLEANING CHECKLIST

Site	Diamond Dobson
Date	9/27/99
Time	
Serviced By:	Ren

Sampler was down. Fitedland reinstalled

No	**Data Downloaded to DTU?**

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Dracaday & Dobson	DATE	9/27/99
ARRIVAL TIME		DEPARTURE TIME	
		SERVICED BY	
SAMPLER MODEL NUMBER		SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER		RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED/ SERVICED/ CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Reinstall fixed sampler. Restart program. Clean and Flush Lines.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Dobson + Broadway	DATE	9/27/99
ARRIVAL TIME	0900	DEPARTURE TIME	0940
SERVICED BY	RLW		
SAMPLER MODEL NUMBER		SAMPLER SERIAL / ASSET NUMBER	
RAINGAGE SERIAL / ASSET NUMBER		RAINGAGE SERIAL / ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED	NEEDS FOLLOW-UP	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Check power to unit, good. 15.34 Volts.
Check Fuse, good, Found in problem leading to Sampler.
Remove sampler for repair

RLW

Found fuse wired upright, not on its side when in Sampler
Replace fuse, restart program.

RLW

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	9/24/99	VIST	Dilcadway + Dobson
ARRIVAL TIME		DEPARTURE TIME	
		SERVICED BY	RLM
SAMPLER MODEL NUMBER		SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER		RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED SERVICE PERFORMED	CONDITION		NEED REPLACING	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Unit failed during Storm. Check power, fuse okay. Leave until later due to pick up. Sampler Station is closed. Install cleaned bottles, caps

EQUIPMENT CLEANING CHECKLIST

Site	Dobson + Broadway
Date	9/24/99
Time	0645
Serviced By:	RW

Sampler down, check power + fuse, found no problem.

No	**Data Downloaded to DTU?**

AC on, back up okay. RW

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

	Pump approximately 1/2 gallon tap water through tubing.
	Pump approximately 1/2 gallon of Liquinox through tubing.
	Pump a large quantity of tap water through tubing.
	Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
	Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

SITE:	DOBSON		
DATE:	9-23-99	TIME:	1515

Battery 14.07 V
5 bottles full. Iced
rainfall 0.74"
Keypad failure.
JRC/ASO

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

Keypad failure.

FIELD PARAMETERS:

Discharge at time of Grabs		cfs
Effluent pH		s.u.
Effluent Temperature		°C

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples Taken?	YES	NO
Preservatives added to bottles?	YES	NO

EQUIPMENT CLEANING CHECKLIST

Site	Broadway & Dobson		
Date	7/23/99	**Time**	AM
Serviced By:	[illegible]		

Seel #1 0.03 rain

Yes	**Data Downloaded to DTU?**

No sample taken

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

	Pump approximately 1/2 gallon tap water through tubing.
	Pump approximately 1/2 gallon of Liquinox through tubing.
	Pump a large quantity of tap water through tubing.
	Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
	Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

EQUIPMENT CLEANING CHECKLIST

Site	BROADWAY & DOBSON
Date	9-22-99
Time	11:15
Serviced By:	JRC/RWH

Changed moisture filter.
Restarted program.

NO	**Data Downloaded to DTU?**

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

	Pump approximately 1/2 gallon tap water through tubing.
	Pump approximately 1/2 gallon of Liquinox through tubing.
	Pump a large quantity of tap water through tubing.
	Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
	Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

SITE:	Mesa 5

DATE:	9/20/99	TIME:	1040hrs

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES (NO)

IF NO, WHAT WERE PROBLEM(S):

Sampler Was not Reset.
.37" of Rain PT Looks good.
(CJR).

FIELD PARAMETERS:

Discharge at time of Grab:		cfs
Effluent pH:		S.U.
Effluent Temperature		°C

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples Taken?	YES	(NO)
Preservatives added to bottles?	YES	(NO)

EQUIPMENT CLEANING CHECKLIST

Site	Dobson & Broadway		
Date	9/15/99	**Time**	
Serviced By:	Rew		

Cell # 5

✓/ev	**Data Downloaded to DTU?**

1. Halt program — Remove bottles for cleaning. Oil / Rain
2. Connect extension tubing to the distributor tubing on the underside of the sampler. — Halt program — Pe 31
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	MOSA 5	[redacted]	9/13/99
[redacted]		[redacted]	Rau
[redacted]		[redacted]	
[redacted]		[redacted]	

	[redacted]				
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Dobson & Broadway 0.20 rain 3 bottles had samples

6th & Horne, 0.04 rain no flows, no samples

Horne & Grandview 0.02 rain " "

Falcon Field 0.00 — " "

Broadway & Lindsey 0.01 - " "

EQUIPMENT CLEANING CHECKLIST

Site	Dobson & Dixon/Lacy
Date	9/13/99
Time	
Serviced By:	[illegible]

Copy on Well # 4 0.20 rain

yes	**Data Downloaded to DTU?**

3 bottles full in Sampler, clean bottles

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

Restart Program later this week. –

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

After cleaning, program real complete.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	City of Mesa 5		DATE	9/7/99	
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	
SAMPLER MODEL NUMBER			SAMPLER SERIAL / ASSET NUMBER		
PT SERIAL NUMBER / ASSET NUMBER			RAINGAGE SERIAL / ASSET NUMBER		

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS

Broadway & Dobson	check sampler	Re Start program	
Horne & 6th ST	Put in AC backup	"	"
Horne S of Baseline	"	"	"
Falcon Field	"	"	"
Broadway & Lindsay	"	"	"

EQUIPMENT CLEANING CHECKLIST

Site	Dobson + Broadway		
Date	9/2/99	**Time**	
Serviced By:	(Mw) (JRC) (CFR)		

	Data Downloaded to DTU?

1. Halt program — Clear intake line of Plastic bags and garbage. Test line and Flush and clean.
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

EQUIPMENT CLEANING CHECKLIST

Site	Moadway & Dobson
Date	9/1/99
Time	
Serviced By:	RLM

No	**Data Downloaded to DTU?**

Unit failed to copy or transfer data

1. Halt program Station to be changed out 9/2/99
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

	Pump approximately 1/2 gallon tap water through tubing.
	Pump approximately 1/2 gallon of Liquinox through tubing.
	Pump a large quantity of tap water through tubing.
	Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.
	Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

SITE:	Dobson & Broadway

DATE:	8/31/99	TIME:	1440

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES (NO)

IF NO, WHAT WERE PROBLEM(S):

Line in pump change, purged line (8/30/99) Sampler unable to pull sample 8/31/99 Possible line blockage. Need to enter drain and check line

Left sampler running. Precip at 1440 EES 0.26

Some water in bottle #1 (few mls) grc arrange for full service.

FIELD PARAMETERS:

Sampler Start Time	
Effluent pH	
Effluent Temperature	

GRAB SAMPLES: Take grab samples from discharge only!

Grab Samples Taken?	YES	(NO)
Preservatives added to bottles?	YES	(NO)

EQUIPMENT CLEANING CHECKLIST

Site	Dobson + Bradley		
Date	8/30/99	**Time**	
Serviced By:	RLW		

✓ **Data Downloaded to DTU?**

1. Halt program — Found pump hose had split, repaired Hose, clean line No Samples precip 0.28
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

Data in DTU cell #1

- ✓ **Pump approximately 1/2 gallon tap water through tubing.**
- ✓ **Pump approximately 1/2 gallon of Liquinox through tubing.**
- ✓ **Pump a large quantity of tap water through tubing.**
- ✓ **Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
- ✓ **Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

STORM EVENT LOG SHEET

SITE:	DOBSON & BROADWAY

DATE:	8/27/99	TIME:	2049

Bottles empty, no samples collected.

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

FIELD PARAMETERS:

Discharge at time of Grabs		cfs
Effluent pH		s.u.
Effluent Temperature		°C

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples Taken?	YES	NO
Preservatives added to bottles?	YES	NO

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	4th & Mesa			DATE	8/23/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	Rau
SAMPLER MODEL NUMBER				SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER				RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Dobson & Broadway 0.04 8/19/99 Restart program check bottles

* 6th & Horne, Shut down, pull sampler 0.27 rain 8/19/99 over fills bottles & sampler

Horne & Claudia, 0.45 rain 6 bottles full, clean line, bring bottle in

Falcon Field, 0.89 Rain, Flush lines, return bottles.

Lindsey & Broadway — 8/19/99 0.09 — Restart program —

Date: 06/22/1999

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	City of Mesa	[redacted]	8/11/99
[redacted]		[redacted]	[illegible]
[redacted]		[redacted]	
[redacted]		[redacted]	

Copy date Horne & 6th Cell #3 Shot Station down

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Dobson & Broadway – Program running, no rain/flow
Horne & 6th sample full of water, SHUT DOWN, Copy data!
Horne & Manfview no flow pressure. 0.10' left running
Falcon Field, took samples, copy data, left running
Broadway - Lindsay, no rain, no flow left running

Date: 01/27/1999

EQUIPMENT CLEANING CHECKLIST

Site	Dobson & Broadway		
Date	8/10/99	**Time**	
Serviced By:	(Rlew)		

✓ **Data Downloaded to DTU?**

DTU unit worked well.

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓ **Pump approximately 1/2 gallon tap water through tubing.**

✓ **Pump approximately 1/2 gallon of Liquinox through tubing.**

✓ **Pump a large quantity of tap water through tubing.**

✓ **Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**

✓ **Pump approximately 1/2 - 1 gallon deionized water through tubing.**

Replace 3 clean bottles, reset program.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

Replace pump hose inside line.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

MESA 5

[redacted]	MeSA Stations	[redacted]	8/2/99
[redacted]		[redacted]	[illegible]
[redacted]		[redacted]	
[redacted]		[redacted]	

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS

Dobson & Broadway — ReStart program

Lindsey & Broadway — " "

Horne & 6th — " "

Horne & Grandview — ReStart program

EQUIPMENT CLEANING CHECKLIST

Site	DOBSON		
Date	7-19-99	**Time**	1220
Serviced By:	DEC		

✓	**Data Downloaded to DTU?**

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	**Pump approximately 1/2 gallon tap water through tubing.**
✓	**Pump approximately 1/2 gallon of Liquinox through tubing.**
✓	**Pump a large quantity of tap water through tubing.**
✓	**Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.**
✓	**Pump approximately 1/2 - 1 gallon deionized water through tubing.**

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Dobson + Broadway	DATE	7/8/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY	RWH		
SAMPLER MODEL NUMBER		SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER		RAINGAGE SERIAL/ ASSET NUMBER	

Copy date #4

	CHECKED/ SERVICED/ CALIBRATED	CONDITION	SERVICEABLE	NEEDS REPLACING	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Clean bottles, 8 Flush line Restart program

RW

Date: 01/27/1999

EQUIPMENT CLEANING CHECKLIST

Site	Broadway/Nelson
Date	7/7/99
Time	
Serviced By:	[illegible]

Yes #1	Data Downloaded to DTU?

1. Halt program Cleaned 3 bottles
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

✓	Pump approximately 1/2 gallon of Liquinox through tubing.
✓	Pump approximately 1/2 gallon tap water through tubing.
✓	Pump approximately 1/2 liter Nitric Acid (pH 3 - 4) through tubing.
✓	Pump approximately 1 - 2 gallons deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Broadway & Dobson			DATE	7/1/99
ARRIVAL TIME		DEPARTURE TIME		SERVICED BY	RMW
SAMPLER MODEL NUMBER				SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER				RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER DISTRIBUTOR TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	. depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS Open bottles, Restart programs

RMW