

CCP-TP-009

Revision 15

CCP

Single Sample Manifold Data Handling Procedure

EFFECTIVE DATE: 11/16/2006

J.R. Stroble

PRINTED NAME

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
8	01/30/2002	Added trans-1,2-Dichloroethylene to table 1 and 39.
9	09/20/2002	Changes made throughout procedure based on CBFO adequacy review and NTS Program Review.
10	09/26/2002	Revised Step 4.2.2.[C].
11	02/05/2003	Changes for drum age criteria. Added step 4.2.6 and note regarding OCS duplicate to step 4.2.6. Removed step 4.2.5[B]. Added step 4.3.9 to attach the OCS duplicate report.
12	09/01/2003	Revisions made as Corrective Actions for CAR-CCP-0002-03 and for Clarification in Section 4.0. Attachments 3-16 revised with samples from the updated BDR Template.
13	10/31/2003	Incorporated changes to meet Hanford requirements. Eliminated redundancies in procedural steps that already exist in the attachment checklists. Revised Steps 4.1.1 and 4.1.2. Deleted Step 4.1.4 and Section 4.3 (entire section). Added "h" for PFP waste stream at Hanford. Added Step 4.2.26.
14	10/21/2004	Changes made as a result of the NTS audit. Also added Facility Records Custodian responsibilities in Section 3.0 and records information in 5.1.2, C-G.
15	11/16/2006	Revised to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR).

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1.0 PURPOSE

This procedure implements requirements of CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan (QAPjP)* for Headspace Gas (HSG) Operator review of the sampling and analytical data generated by use of the single sample manifold headspace gas sampling and analysis equipment and for generating the combined sampling and analysis batch data report (BDR) as an on-line BDR. This procedure outlines the steps followed in the handling of waste characterization data, including sample tracking, data reduction, report preparation, and records management.

1.1 Scope

This procedure is used by the HSG Operator to review the on-line BDR to ensure the data generated meets Central Characterization Project (CCP) requirements and to flag deficient data.

2.0 REQUIREMENTS

2.1 References

Baseline Documents

- CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-TP-029, *CCP Single Sample Manifold Headspace Gas Sampling and Analysis Methods and Equipment Calibration*

Referenced Documents

- Method 8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MC)*
- CCP-QP-002, *CCP Training and Qualification Plan*
- CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-008, *CCP Records Management*
- CCP-TP-007, *CCP Single Sample Manifold Headspace Gas Sampling and Analysis Procedure*
- CCP-TP-032, *CCP Single Sample Manifold Data Validation Procedure*

2.2 Training Requirements

2.2.1 Personnel performing this procedure will be trained and qualified in accordance with CCP-QP-002, *CCP Training and Qualification Plan* prior to performing this procedure.

2.3 Equipment List

2.3.1 None.

2.4 Software

2.4.1 Varian MS Workstation

2.4.2 BDR Template.xls

2.5 Precautions and Limitations

2.5.1 If the procedure can **NOT** be implemented as written, then work will be STOPPED and the HSG Lead Operator (LO) will be notified. Work will **NOT** be resumed until the procedure is corrected.

2.6 Prerequisite Actions

2.6.1 None.

2.7 Definitions

2.7.1 None.

3.0 RESPONSIBILITIES

3.1 HSG Personnel

3.1.1 Generates and prints the on-line BDR for Data Generation Level Review.

3.2 HSG Operator

3.2.1 Reviews, signs, and dates all data generated from the BDR Template.xls in accordance with this procedure for Data Generation Level Reviews and forwards to the Independent Technical Reviewer (ITR).

3.3 HSG Lead Operator (LO)

3.3.1 Verifies the electronic file satisfies the requirement of CCP-QP-008, *CCP Records Management*.

3.4 Facility Records Custodian

3.4.1 Receives, processes, and transmits all records generated by this procedure in accordance with CCP-QP-008.

4.0 PROCEDURE

HSG Personnel

NOTE

Sections within this procedure may be performed independently of other sections.

4.1 Calibration Data Package and Review

NOTE

The Initial Calibration (ICAL) is compiled into a package to be submitted for Data Generation and Project Level Review. Submittal of the Method Performance and Method Detection Limit (MDL) is biannual **AND** is included in the ICAL data package until changed. The ICAL and MDL will be referenced in the Case Narrative (see Attachment 16, Case Narrative for an example), until no longer valid.

HSG Personnel will retain current copies of the ICAL for reference. The original current ICAL package is forwarded to Project Level Data Validation.

4.1.1 After generating the ICAL BDR, record Method File ID, Unit ID, and Calibration Date on Attachment 2, Initial Calibration (ICAL) Checklist.

4.1.2 Review the ICAL to the criteria in Attachment 2 **AND** document the results.

4.1.3 Attach a current copy of the completed MDL Spreadsheet (see Attachment 17, MDL Spreadsheet for an example) including updated upper curve limit **AND** a copy of the Program Required Quantitation Limit (PRQL) to the BDR.

4.1.4 Attach a current copy of the calibration block report provided by Varian MS Workstation.

4.1.5 Print name, sign and date Attachment 2.

4.2 Batch Data Report (BDR) Generation

HSG Personnel

4.2.1 Select the appropriate BDR Template.xls for either Unit A or Unit B.

4.2.2 Open the password protected, Read-Only BDR Template.xls **AND** save as BDR mmddyyXX.

- 4.2.3 Import the batch analysis data files that were converted to ASCII Data files, which are from Varian MS Workstation into the RAW Worksheet from BDR Template.xls.
- 4.2.4 Enter required information on the Cover Page (see Attachment 14, Cover Page for an example), Table of Contents (see Attachment 15, Table of Contents for an example), **AND** Case Narrative.
- 4.2.5 Print the final reports from the BDR Template.xls , **AND** place in the BDR holding file
- 4.2.6 Forward to the HSG Operator to begin Data Generation Level Review.

4.3 Batch Data Report (BDR)

NOTE

Data compiling, flagging and verification of the BDR by the HSG Operator is accomplished by the use of Attachment 1, Data Generation Checklist.

HSG Operator

- 4.3.1 Record Batch Number, Unit ID, **AND** Date in the Attachment 1.
- 4.3.2 Ensure the BDR Cover Page is attached (see Attachment 14, Cover Page for an example), **AND** complete as follows:
 - [A] Verify Lab Name.
 - [B] Verify GC/MS Method ID.
 - [C] Verify Analytical Batch Number.
 - [D] Verify Sample Equipment Number.
 - [E] Verify Batch Date.
 - [F] Verify Procedures/Rev Numbers.
 - [G] Verify Container Type (e.g., 55-gallon drum).
 - [H] Verify Sample Matrix/Type.
 - [I] Verify Analysis Requested.
 - [J] Verify Sample Origin (where sample was taken).
 - [K] Verify Sample Location (headspace).
 - [L] Verify Sample Size (e.g., 100 μ l).
 - [M] Verify Sample/Container Number(s).

4.3.3 Ensure the Table of Contents is attached **AND** complete.

NOTE

The Case Narrative should include a discussion of data qualifying flags, nonconformance reports (NCRs), verification of rigid liner venting, process parameters that affect the quality of the data, ICAL reference and the MDL reference.

4.3.4 Ensure the Case Narrative is attached, **AND** complete.

4.3.5 Ensure the BFB Tune Report (see Attachment 3, BFB Tune Report for an example) is attached, **AND** complete (see Table 4, BFB Ion Abundance Criteria).

4.3.6 Ensure the CCV Report/QAO (see Attachment 4, CCV Report/QAO for an example)/QAO is attached, **AND** complete.

4.3.7 Ensure the %D Spreadsheet (see Attachment 5, %D Spreadsheet for an example) is attached, **AND** complete.

4.3.8 Ensure the OCS Report/QAO (see Attachment 6, OCS Report/QAO for an example) is attached, **AND** complete.

4.3.9 Ensure the OCS Duplicate Report/QAO (see Attachment 11, OCS Duplicate Report/QAO for an example) is attached, **AND** complete.

4.3.10 Ensure the OCS Duplicate Report (see Attachment 10, OCS Duplicate for an example) is attached, **AND** complete.

4.3.11 Ensure the Blank Report/QAO (see Attachment 7, Blank Report/QAO for an example) is attached, **AND** complete.

4.3.12 Ensure the Drum Duplicate Report/QAO (see Attachment 9, Drum Duplicate Report/QAO for an example) is attached, **AND** complete.

4.3.13 Ensure the Drum Duplicate Report (see Attachment 8, Drum Duplicate for an example) is attached, **AND** complete.

4.3.14 Ensure the Drum Sample Report(s) (see Attachment 12, Drum Sample Report for an example) is attached, **AND** complete.

[A] Verify the raw data for Volatile Organic Compounds (VOCs), hydrogen, **AND** methane.

[B] Verify all flags are properly assigned, (see Table 2, Data Flags).

[C] Verify date and time sample was analyzed.

- 4.3.15 Ensure the TIC Report (see Attachment 13, TIC Report for an example) (if applicable) is attached **AND** complete.
- 4.3.16 Ensure the MDL Spreadsheet (see Attachment 17, MDL Spreadsheet for an example) (MDL and Method Performance) is attached **AND** complete.
- 4.3.17 Ensure Attachment 1, Prerequisite Checklist; Attachment 2, Drum Process Log; Attachment 3, Daily Checks; Attachment 4, Process Parameters; and Attachment 5, Sample Drum Data Form, from CCP-TP-007, *CCP Single Sample Manifold Headspace Gas Sampling and Analysis Procedure* are attached **AND** complete.
- 4.3.18 Ensure Dicksonware[®] 99 Temperature Graph is attached.
- 4.3.19 Ensure the Attachment 1 is attached.
- 4.3.20 Ensure the Independent Technical Reviewer Checklist, Attachment 1 or 2 (batch data type dependent) from CCP-TP-032, *CCP Single Sample Manifold Data Validation Procedure* is attached.
- 4.3.21 Ensure Table 1, Target Analyte List and QAOs, **AND** Table 3, Quantitation Ions for VOC, are attached.
- 4.3.22 Ensure all associated NCRs are attached.
- 4.3.23 Ensure the ICAL is referenced.
- 4.3.24 Sign and date all applicable BDR pages.
- 4.3.25 Print name, sign and date the Attachment 1.
- 4.3.26 Place in the BDR holding file.

NOTE

When raw data has been reviewed, **AND** approved by the HSG Operator, the BDR is sent to the ITR. The Independent Technical Review begins the BDR Data Generation Level Review, verification, and validation according to CCP-TP-032.

The archive files are created and identified by date of processing.

HSG Personnel

4.4 Transfer Electronic Data Files to Archive Files

4.4.1 BDR files will be archived once the BDR is complete.

- [A] Place a CD-R in the recordable disk drive.
 - [B] Open the BDR file to be archived.
 - [C] Remove password protection
AND save the file.
-

NOTE

Electronic records are verified to be minimal risk of unauthorized additions, deletions, or alterations by using CD-R and Read-Only File Access in accordance with CCP-QP-008.

- [D] Ensure the file is Read-Only.
- [E] Send the file to the recordable disk drive **AND** write the file on a CD-R.
- [F] Verify the file transfer by opening the BDR file on the CD-R.
- [G] **IF** the file transfer was successful,
THEN label the CD-R disk in accordance with CCP-QP-008.
- [H] **IF** the file transfer was **NOT** successful,
THEN determine **AND** correct the error,
AND GO TO Section 4.4.1[A] **AND** repeat the process.
- [I] Create a second CD-R of the archived BDR by performing 4.4.1[A] through 4.4.1[H].

4.4.2 Raw Data files will be archived quarterly.

- [A] Place a CD-R in the recordable disk drive.
- [B] Select the three months on a quarterly basis that will be archived.
- [C] Send the file to the recordable disk drive **AND** write the file on a CD-R.
- [D] Verify the file transfer by opening the raw data file on the CD-R.
- [E] **IF** the file transfer was successful,
THEN label the CD-R disk in accordance with CCP-QP-008.
- [F] **IF** the file transfer was **NOT** successful,
THEN determine **AND** correct the error,
AND GO TO Section 4.4.2[A] **AND** repeat the process.
- [G] Create a second CD-R of the archived raw data by performing 4.4.2[A] through 4.4.2[F].

HSG LO

4.4.3 Verify the electronic file satisfies the requirements of CCP-QP-008.

HSG Personnel

4.4.4 Submit all records, **AND** electronic copies of archive BDR files to the Facility Records Custodian in accordance with CCP-QP-008.

Facility Records Custodian

4.4.5 Receive, process, and transmit all records in accordance with CCP-QP-008.

5.0 RECORDS

5.1 Records generated during the performance of this procedure are maintained as Quality Assurance (QA) records in accordance with CCP-QP-008. The records are the following:

5.1.1 QA/Non-Permanent Records

- [A] GC/MS System (Electronic Data) (CD-R)
- [B] ICAL Batch Data Report
 - [B.1] Calibration Gas Standard Certification
 - [B.2] Raw Data
 - [B.3] Attachment 2, Initial Calibration (ICAL) Checklist
 - [B.4] MDL Spreadsheet
 - [B.5] Cover Page
 - [B.6] BFB Tune Report
 - [B.7] Daily Checks
 - [B.8] Retention Time Average
 - [B.9] Copy of Table 1, Target Analyte List and QAOs
 - [B.10] Copy of Table 3, Quantitation Ions for VOC
 - [B.11] Attachment 2, ICAL/MDL Independent Technical Reviewer Review Checklist
- [C] MDL Batch Data Report
 - [C.1] BFB Tune Report
 - [C.2] Daily Checks
 - [C.3] Calibration Gas Standard Certification
 - [C.4] Copy of Table 1, Target Analyte List and QAOs
 - [C.5] Copy of Table 3, Quantitation Ions for VOC
 - [C.6] Attachment 2, Initial Calibration (ICAL) Checklist

[C.7] Attachment 2, ICAL/MDL Independent Technical Reviewer Review Checklist

5.1.2 QA/Lifetime Records

- [A] HSG BDR Package
 - [A.1] Cover Page
 - [A.2] Table of Contents
 - [A.3] Case Narrative
 - [A.4] BFB Tune Report
 - [A.5] MDL spreadsheet
 - [A.6] CCV Report/QAO spreadsheet
 - [A.7] %D Spreadsheet
 - [A.8] OCS Report/QAO spreadsheet
 - [A.9] OCS Duplicate Report/QAO
 - [A.10] OCS Duplicate spreadsheet
 - [A.11] Blank Report/QAO spreadsheet
 - [A.12] Drum Duplicate Report/QAO spreadsheet
 - [A.13] Drum Sample Report spreadsheet
 - [A.14] Drum Duplicate spreadsheet
 - [A.15] Attachment 1, Data Generation Checklist
 - [A.16] TIC Report (when applicable)
 - [A.17] Copy of Table 1, Target Analyte List and QAOs
 - [A.18] Copy of Table 3, Quantitation Ions for VOC
 - [A.19] Attachment 1, Independent Technical Reviewer Review Checklist (from CCP-TP-032)

NOTE

The following Records are generated in CCP-TP-007 and are included in the completed HSG Batch Data Package in accordance with this procedure.

- [B] Attachment 1 – Prerequisite Checklist
- [C] Attachment 2 – Drum Process Log
- [D] Attachment 3 – Daily Checks
- [E] Attachment 4 – Process Parameters
- [F] Attachment 5 – Sample Drum Data Form
- [G] Dicksonware[®] 99 Temperature Graph

Table 1 – Target Analyte List and QAOs

Compound	CAS No.	Precision ^a (%RSD or RPD) (less than or equal to value below)	Accuracy ^a (%R)	MDL ^b (ng)	PRQL ^b (ppmv)	Completeness %
Benzene ^e	71-43-2	25	70-130	10	10	90
Bromoform	75-25-2	25	70-130	10	10	90
Carbon Disulfide ^f	75-15-0	25	70-130	10	10	90
Carbon tetrachloride ^d	56-23-5	25	70-130	10	10	90
Chloromethane ^f	74-87-3	25	70-130	10	10	90
Chlorobenzene ^e	108-90-7	25	70-130	10	10	90
Chloroform	67-66-3	25	70-130	10	10	90
1,1-Dichloroethane ^e	75-34-3	25	70-130	10	10	90
1,2-Dichloroethane ^{d,e}	107-06-2	25	70-130	10	10	90
1,1-Dichloroethylene ^e	75-35-4	25	70-130	10	10	90
cis-1,2-Dichloroethylene ^e	156-59-2	25	70-130	10	10	90
trans-1,2-Dichloroethylene ^e	156-60-5	25	70-130	10	10	90
Ethyl benzene ^e	100-41-4	25	70-130	10	10	90
Ethyl ether ^e	60-29-7	25	70-130	10	10	90
Methylene chloride ^d	75-09-2	25	70-130	10	10	90
1,1,1,2-Tetrachloroethane	79-34-5	25	70-130	10	10	90
Tetrachloroethylene	127-18-4	25	70-130	10	10	90
Toluene ^e	108-88-3	25	70-130	10	10	90
1,1,1-Trichloroethane ^d	71-55-6	25	70-130	10	10	90
Trichloroethylene ^d	79-01-6	25	70-130	10	10	90
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	25	70-130	10	10	90
m-Xylene ^{c,e}	108-38-3	25	70-130	10	10	90
o-Xylene ^{d,e}	95-47-6	25	70-130	10	10	90
p-Xylene ^{c,e}	106-42-3	25	70-130	10	10	90
Acetone ^e	67-64-1	25	70-130	150	100	90
Butanol ^e	71-36-3	25	70-130	150	100	90
Methanol ^e	67-56-1	25	70-130	150	100	90
Methyl ethyl ketone ^e	78-93-3	25	70-130	150	100	90
Methyl isobutyl ketone ^e	108-10-1	25	70-130	150	100	90
				VOL%	VOL%	
Hydrogen	1333-74-0	25	70-130	0.05	0.1	90
Methane	74-82-8	25	70-130	0.05	0.1	90

^a Criteria apply to PRQL concentrations.^b Values based on delivering 10 ml to the analytical system.^c These xylene isomers cannot be resolved by the analytical methods employed in this program and shall be reported as "m,p-xylene" (undifferentiated).^d Critical target compounds^e Flammable VOC^f Required only for Plutonium Finishing Plant (PFP) waste stream at Hanford.

Notes:

%RSD = Percent relative standard deviation.

RPD = Relative percent difference.

%R - Percent recovery.

MDL = Method detection limit (total number of nanograms delivered to the analytical system per sample).

PRQL = Program required quantitation limit.

Table 2 – Data Flags

Data Flag	Indicator
B	Analyte detected in blank
E	Analyte exceeds calibration curve
J	Analyte less than PRQL but greater than or equal to the MDL
U	Analyte was not detected and value is reported as the MDL
Z	One or more QC samples do not meet acceptance criteria

Table 3 – Quantitation Ions for VOC

Volatile Organic Compound	Primary Ion*	Secondary Ion*
Acetone	43	58
Benzene	78	
Bromoform	173	171,175
Butanol	56	43
Carbon Disulfide	76	
Carbon tetrachloride	117	
Chlorobenzene	112	
Chloroform	83	
Chloromethane	50	
1,1-Dichloroethane	63	
1,2-Dichloroethane	62	
1,1-Dichloroethylene	61	
cis-1,2-Dichloroethylene	61	
trans-1,2-Dichloroethylene	61	45
Ethyl benzene	91	
Ethyl ether	59	72
Methanol ^a	31	85
Methyl ethyl ketone	43	
Methyl isobutyl ketone	43	
Methylene chloride	49	
1,1,2,2-Tetrachloroethane	83	
Tetrachloroethylene	166	
Toluene	91	
1,1,1-Trichloroethane	97	
Trichloroethylene	130	
1,1,2-Trichloro-1,2,2-Trifluoroethane	101	
m-Xylene	91	
o-Xylene	91	
p-Xylene	91	

^a Analysts are required to determine the most appropriate secondary ions for these compounds.

* Primary and secondary ion masses specified by Varian Instruments for Saturn 2000 MS unit.

Table 4 – BFB Ion Abundance Criteria

4-Bromofluorobenzene Keys Ions and Abundance Criteria	
<u>Mass</u>	<u>Ion Abundance Criteria</u>
50	15 to 40% of mass 95
75	30 to 60% of mass 95
95	Base peak, 100% relative abundance
96	5-9% of mass 95
173	Less than 2% of mass 174
174	>50% of mass 95
175	5-9% of mass 174
176	>95% and <101% of mass 174
177	5-9% of mass 176

Attachment 1 – Data Generation Checklist

Batch Number: _____

Unit ID: _____

Date: _____

	PASS	COMMENT
COVER PAGE		
Lab Name		
GC/MS Method ID		
Batch Number		
Sample Equipment Number		
Batch Date		
Procedures/Rev Number(s)		
Container Type		
Sample Matrix/Type		
Analysis Requested		
Sample Origin/Location		
Sample Size		
Sample/Container Number(s)		
TABLE OF CONTENTS		
CASE NARRATIVE		
Verification of Rigid Liner Venting		
BFB TUNE REPORT		
CCV REPORT/QAO		
%D SPREADSHEET		
OCS REPORT/QAO		
OCS DUPLICATE REPORT/QAO		
OCS DUPLICATE REPORT		
BLANK REPORT/QAO		
DRUM DUPLICATE REPORT/QAO		
DRUM DUPLICATE REPORT		
DRUM SAMPLE REPORT(S)		
Verify raw data		
Verify all flags		
Verify date and time		
TIC REPORT(s)		
MDL Spreadsheet (MDL and Method Performance)		
Attachments 1,2,3,4, and 5 from CCP-TP-007		
Dicksonware [®] 99 Temperature Graph		
Data Generation Checklist		
ITR Checklist from CCP-TP-032		
TS Checklist from CCP-TP-032		
QA Officer Checklist from CCP-TP-032		
Tables: Table 1 (PRL)		
Table 3 (Quantitation Ions)		
All NCRs		
ICAL/REFERENCED		

HSG Operator

Print Name

Signature

Date

Attachment 2 – Initial Calibration (ICAL) Checklist

Method File ID: _____
Unit ID: _____ Calibration Date: _____

Pass	Criteria	Comments
VOC ICAL Verification		
	Verify ICAL includes all TAL (See Table 1).	
	Verify R^2 is ≥ 0.990 .	
	Verify % RSD < 35%.	
	Verify a minimum of five concentration levels for each VOC target analyte if a linear equation was used (Table 3).	
	Verify a minimum of six concentration levels for each VOC target analyte if a quadratic equation was used.	
	Verify one concentration level below PRQL (see Table 1).	
	Verify primary quantitation ion and/or secondary quantitation using Table 3.	
	Verify the VOC concentration units are in ppmv.	
	Verify and record the calibration gas standard certification.	
	Verify $RTW \leq 0.4$.	
	Verify RT occurs within the expected RTW.	
	Verify the I.S. are at 100 ppmv.	
	Copy of the PRQL (Table 1) included.	
	Copy of the VOC Quantitation Ions (Table 3) included.	
	Copy of the MDL Spreadsheet included.	
Hydrogen and Methane ICAL Verification		
	Verify the initial calibration includes hydrogen and methane.	
	Verify R^2 is ≥ 0.990 .	
	Verify the % RSD for hydrogen and methane is < 35%.	
	Verify a linear equation is used.	
	Verify there are a minimum of three concentration levels for Hydrogen and Methane.	
	Verify one concentration level is below PRQL (see Table 1).	
	Verify the hydrogen and methane units are in VOL%.	
	Verify and record the calibration gas standard certification.	
	Verify $RTW \leq 0.3$.	
	Verify RT occurs within the expected RTW.	
	Copy of the PRQL (Table 1) included.	
	Copy of the MDL Spreadsheet included.	

HSG Operator

Print Name

Signature

Date

Attachment 3 – BFB Tune Report (Example)

LAB NAME: NFT-SRS

METHOD ID:

ANALYTICAL BATCH NO:

INSTRUMENT ID:

BFB START TIME:

m/z	CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	
75	30.0 - 60.0% of mass 95	
95	Base peak, 100% relative abundance	
96	5.0 - 9.0% of mass 95	
173	Less than 2.0% of mass 174	
174	Greater than 50% of mass 95	
175	5.0 - 9.0% of mass 174	
176	Greater than 95%, but less than 101% of mass 174	
177	5.0 - 9.0% of mass 176	

Signature: _____

Date: _____

Attachment 5 – %D Spreadsheet (Example)

ICAL Compounds	ICAL type here				
	average initial calibration response factor	%D	CCV area counts	COA-CCV	CCV response factor
Methanol	0.000	0	0.0	0	0
Ethyl ether	0.000	0	0.0	0	0
Freon-113	0.000	0	0.0	0	0
11-Dichloroethene	0.000	0	0.0	0	0
Acetone	0.000	0	0.0	0	0
Methylene Chloride	0.000	0	0.0	0	0
trans 12-Dichloroethene	0.000	0	0.0	0	0
11-Dichloroethane	0.000	0	0.0	0	0
cis 12-Dichloroethene	0.000	0	0.0	0	0
MEK	0.000	0	0.0	0	0
Chloroform	0.000	0	0.0	0	0
111-Trichloroethane	0.000	0	0.0	0	0
Carbon Tetrachloride	0.000	0	0.0	0	0
Benzene	0.000	0	0.0	0	0
12-Dichloroethane	0.000	0	0.0	0	0
1-Butanol	0.000	0	0.0	0	0
Trichloroethene	0.000	0	0.0	0	0
MIBK	0.000	0	0.0	0	0
Toluene	0.000	0	0.0	0	0
Tetrachloroethene	0.000	0	0.0	0	0
Chlorobenzene	0.000	0	0.0	0	0
Ethylbenzene	0.000	0	0.0	0	0
mp-Xylene	0.000	0	0.0	0	0
o-Xylene	0.000	0	0.0	0	0
Bromoform	0.000	0	0.0	0	0
1122-tetrachloroethane	0.000	0	0.0	0	0

Attachment 6 – OCS Report/QAO (Example)

LAB NAME: NFT-SRS

OCS Identification: 0

METHOD ID:

ANALYTICAL BATCH NO:

INSTRUMENT ID:

DATE ANALYZED: 1/0/00 12:00 AM

GC/MS FILE ID: 0

GC/MS - Organic Compounds	Concentration (ppmV)			MIN	MAX	Flags
	Measured	Known	% R	%R	%R	
0	0.0	0.0	#DIV/0!	70	130	#DIV/0!
0	0.0	0.0	#DIV/0!	70	130	#DIV/0!
0	0.0	0.0	#DIV/0!	70	130	#DIV/0!
0	0.0	0.0	#DIV/0!	70	130	#DIV/0!
0	0.0	0.0	#DIV/0!	70	130	#DIV/0!
0	0.0	0.0	#DIV/0!	70	130	#DIV/0!

TCD/FID - Organic Compounds	Concentration (VOL%)			MIN	MAX	Flags
	Measured	Known	% R	%R	%R	
Hydrogen	0.000	0.000	#DIV/0!	70	130	#DIV/0!
Methane	0.000	0.000	#DIV/0!	70	130	#DIV/0!

Signature: _____

Date: _____

Attachment 7 – Blank Report/QAO (Example)

LAB NAME: NFT-SRS

METHOD ID:

ANALYTICAL BATCH NO:

INSTRUMENT ID:

DATE ANALYZED: 1/0/00 12:00 AM

GC/MS FILE ID: 0

GC/MS - Organic Compounds	Concentration (ppmV)	Q Flags		
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0	INTERNAL STANDARD		
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0	INTERNAL STANDARD		
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0	INTERNAL STANDARD		
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	
0	0.0		J	

TCD/FID - Organic Compounds	Concentration (VOL%)	Q Flags		
Hydrogen	0.000		U	
Methane	0.000		U	

Signature: _____
Date: _____

Attachment 9 – Drum Duplicate Report/QAO (Example)

LAB NAME: NFT-SRS

METHOD ID:

ANALYTICAL BATCH NO:

INSTRUMENT ID:

DATE ANALYZED: 1/0/00 12:00 AM

DUPLICATE DATE ANALYZED: 1/0/00 12:00 AM

GC/MS FILE ID: 0

DUPLICATE GC/MS FILE ID: 0

GC/MS - Organic Compounds	Concentration (ppmV)		%RPD	Flags
	Sample	Duplicate		
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	INTERNAL STANDARD			
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	INTERNAL STANDARD			
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	INTERNAL STANDARD			
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	
0	0.0	0.0	N/A	

TCD/FID - Organic Compounds	Concentration (VOL%)		%RPD	Flags
	Sample	Duplicate		
Hydrogen	0.000	0.000	N/A	
Methane	0.000	0.000	N/A	

Signature: _____

Date: _____

Attachment 10 – OCS Duplicate (Example)

LAB NAME: NFT-SRS

METHOD ID:

ANALYTICAL BATCH NO:

INSTRUMENT ID:

DATE ANALYZED: 1/0/00 12:00 AM

GC/MS FILE ID: 0

GC/MS - Organic Compounds	Concentration (ppmV)
0	0.0
0	0.0
0	0.0
0	0.0
0	0.0
0	0.0

TCD/FID - Organic Compounds	Concentration (VOL%)
Hydrogen	0.000
Methane	0.000

Signature: _____

Date: _____

Attachment 11 – OCS Duplicate Report/QAO (Example)

LAB NAME: NFT-SRS

METHOD ID:

ANALYTICAL BATCH NO:

INSTRUMENT ID:

DATE ANALYZED: 1/0/00 12:00 AM

DUPLICATE DATE ANALYZED: 1/0/00 12:00 AM

GC/MS FILE ID: 0

DUPLICATE GC/MS FILE ID: 0

GC/MS - Organic Compounds	Concentration (ppmV)		%RPD	Flags
	Sample	Duplicate		
0	0.0	0.0	#DIV/0!	
0	0.0	0.0	#DIV/0!	
0	0.0	0.0	#DIV/0!	
0	0.0	0.0	#DIV/0!	
0	0.0	0.0	#DIV/0!	
0	0.0	0.0	#DIV/0!	

TCD/FID - Organic Compounds	Concentration (VOL%)		%RPD	Flags
	Sample	Duplicate		
Hydrogen	0.000	0.000	#DIV/0!	
Methane	0.000	0.000	#DIV/0!	

Signature: _____

Date: _____

Attachment 13 – TIC Report (Example)

LAB NAME: NFT-SRS

METHOD ID:

ANALYTICAL BATCH NO:

INSTRUMENT ID:

DATE ANALYZED: 1/0/00 12:00 AM

GC/MS FILE ID: 0

Tentatively Identified Compound (TIC) is calculated to the nearest Internal Standard (IS) retention time

COMPOUND RETENTION TIME (minutes)	CAS Number	COMPOUND NAME	FLAMMABLE		AREA	CONCENTRATION (ppmv)
			YES	NO		
IS 0.000	74-97-5	<i>Methane, bromochloro-</i>	N/A	N/A	0	100
IS 0.000	540-36-3	<i>Benzene, 1,4-difluoro-</i>	N/A	N/A	0	100
IS 0.000	3114-55-4	<i>Benzene-d5-, chloro-</i>	N/A	N/A	0	100
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Signature: _____

Date: _____

Attachment 14 – Cover Page (Example)

LAB NAME: NPT-SRS
GC/MS METHOD ID:
ANALYTICAL BATCH NO:
SAMPLE EQUIPMENT NUMBER:
BATCH DATE:
PROCEDURE/REV. NUMBER: CCP-TP-007 REV
PROCEDURE/REV. NUMBER: CCP-TP-009 REV
PROCEDURE/REV. NUMBER: CCP-TP-029 REV
PROCEDURE/REV. NUMBER: CCP-TP-032 REV
CONTAINER TYPE: 55 GALLON DRUM
SAMPLE MATRIX/TYPE: HEADSPACE
ANALYSIS REQUESTED: VOLATILE ORGANIC COMPOUNDS
SAMPLE ORIGIN: SRS-PAD 4
SAMPLE LOCATION: HEADSPACE GAS
SAMPLE SIZE: 100uL
SAMPLE/CONTAINER NUMBER

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Print Name: _____

Title: HSG OPERATOR _____

Signature: _____

Date: _____

Attachment 16 – Case Narrative (Example)

LAB NAME: NFT-SRS
METHOD ID:
ANALYTICAL BATCH NO:
INSTRUMENT ID:
BATCH DATE:
DRUM NUMBER

Signature: _____

Date: _____

Attachment 17- MDL Spreadsheet (Example)

Date analyzed:

COMPOUNDS (ppmV)	Run 1	Run 2	Run 3	Run 4	Run 5	Run 6	Run 7	Mean	SDDev	MDL	3*MDL	Known	% Recovery	Upper Curve Limit	PRQL	Mole. Wt. (gms/mole)	MDL ng (10 ml inj.)	%RSD	
Hydrogen*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0000	0.000	0.000	0.0	#DIV/0!	0.0	0.100	2	0.00000	#DIV/0!	
Methane*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0000	0.000	0.000	0.0	#DIV/0!	0.0	0.100	16	0.00000	#DIV/0!	
Methanol	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	100	32	0.00	#DIV/0!	
Ethyl ether	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	74	0.00	#DIV/0!	
Freon-113	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	186	0.00	#DIV/0!	
1,1-Dichloroethene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	96	0.00	#DIV/0!	
Acetone	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	100	58	0.00	#DIV/0!	
Methylene Chloride	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	84	0.00	#DIV/0!	
Trans-1,2-Dichloroethene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	96	0.00	#DIV/0!	
1,1-Dichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	98	0.00	#DIV/0!	
cis-1,2-Dichloroethene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	96	0.00	#DIV/0!	
2-Butanone (MEK)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	100	72	0.00	#DIV/0!	
Bromochloromethane IS																			
Chloroform	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	118	0.00	#DIV/0!	
1,1,1-Trichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	132	0.00	#DIV/0!	
Carbon Tetrachloride	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	152	0.00	#DIV/0!	
Benzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	78	0.00	#DIV/0!	
1,2-Dichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	98	0.00	#DIV/0!	
1,4-Difluorobenzene IS																			
1-Butanol	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	100	74	0.00	#DIV/0!	
Trichloroethene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	130	0.00	#DIV/0!	
MIBK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	100	100	0.00	#DIV/0!	
Toluene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	92	0.00	#DIV/0!	
Tetrachloroethene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	166	0.00	#DIV/0!	
Chlorobenzene-d5 IS																			
Chlorobenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	112	0.00	#DIV/0!	
Ethylbenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	106	0.00	#DIV/0!	
mp-Xylene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	106	0.00	#DIV/0!	
o-Xylene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	106	0.00	#DIV/0!	
Bromoform	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	250	0.00	#DIV/0!	
1122-Tetrachloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	#DIV/0!	0.0	10	166	0.00	#DIV/0!	

* Hydrogen & Methane reported in Vol%