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# LOS ALAMOS

LOS ALAMOS NATIONAL LABORATORY

ENVIRONMENTAL RESTORATION
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(Side 1 of 2)

**Part I**: Complete all fields; indicate NA (Not Applicable) if appropriate; please write legibly.

DOCUMENT TO: —

DOCUMENT DATE: 5-1-87

ORIGINATOR NAME: —

ORGANIZATION: HSE-8

SYMBOL: —

PAGE COUNT: 42

SUBJECT/TITLE: Analytical Results of Verification Sampling Former Main TA-1

RECORD TYPE (Circle relevant type for primary record; type of attachments should be selected on *Keywords List*):

| | | | | |
|---|---|---|---|---|
| Analytical Data | PAX | Map | Plan | Study |
| Chain-of-Custody | Figure | Memo | Procedure | Telephone Record |
| Computer Output | Form | Microform | Purchase Request | Transcription |
| Contract | Interview | Notebook | Receipt Acknowledgment | Video |
| Controlled Distribution | Letter | Personal Notes | Report | Work Plan |
| Drawing | Logbook | Photo | Review | Other |

RECORD CATEGORY: P
(P for Programmatic or R for Reference)

RECORD PACKAGE #: —

**Part II**: Complete all fields; indicate NA (Not Applicable) if appropriate; please write legibly. Use *ER Record Index Form Attachment Sheet* if needed.

ATTACHMENTS FILMED (Y/N): Y
(Were attachments to this record filmed?)

LOCATION: —
(Indicate location of attachments.)

| TECH AREA(S) | PRS NO(S) | TDD (ADS) NO(S) | STRUCTURE NO(S)/MDA |
|---|---|---|---|
| LIST RELEVANT TECH AREAS | LIST RELEVANT PRS NO. | LIST RELEVANT TDD/ADS NO. | LIST RELEVANT STRUCTURE NO/MDA |
| 1 | — | 1078 | — |

14096

42

# ANALYTICAL RESULTS OF VERIFICATION SAMPLING FORMER MAIN TECHNICAL AREA (TA-1) LOS ALAMOS NATIONAL LABORATORY

ENVIRONMENTAL SURVEILLANCE GROUP (HSE-8)
AND
HEALTH AND ENVIRONMENTAL CHEMISTRY GROUP (HSE-9)

LOS ALAMOS NATIONAL LABORATORY

May 1987

Received by ER-RPF
JUN 0 1 1992
Hew

# ANALYTICAL RESULTS OF VERIFICATION SAMPLING
# FORMER MAIN TECHNICAL AREA (TA-1)
# LOS ALAMOS NATIONAL LABORATORY

## 1. PURPOSE OF SAMPLING

Los Alamos National Laboratory (LANL) personnel collected verification samples at TA-1, an area once occupied by numerous structures (including Sigma Building and cooling towers) to determine the possible existence of hazardous substances that may be present in the environment as a result of TA-1 operations. (See the Verification Sampling Plan for the Former Main Technical Area [TA-1], Los Alamos National Laboratory, April 1987 for details.) Results of the April verification sampling are presented in this document.

## 2. DEVIATIONS FROM TA-1 SAMPLING PLAN

It was necessary to change the core sample locations at both the former Sigma Building and its cooling tower (Sample Locations 3 and 6) because concrete foundations of both structures were still intact. The Sigma Building coring point was relocated approximately 12 ft to the southeast. The Sigma cooling tower sampling point was moved 2 ft to the northeast. The underground utility pipes were not sampled, due to insufficient soil quantity.

## 3. RESULTS

Analytical results from soil samples collected during the April 1987 verification sampling effort are summarized here. The index to the verification samples is provided below.

| Description | Sampling Point No. | HSE-8 Sample No. | HSE-9 Sample No. |
|---|---|---|---|
| Surface | 5 | 87.04704C | 87.01686 |
| Core-interface | 1 | 87.04700C2 | 87.01687 |
| Surface | 3 | 87.04702C | 87.01688 |
| Core-surface | 1 | 87.04700C1 | 87.01689 |
| Core-depth | 1 | 87.04700C3 | 87.01690 |
| Surface | 6 | 87.04705C | 87.01691 |
| Surface | 7 | 87.04706C | 87.01692 |
| Surface | 4 | 87.04703C | 87.01693 |

| Description | Sampling Point No. | HSE-8 Sample No. | HSE-9 Sample No. |
|---|---|---|---|
| Surface | 8 | 87.04707C | 87.01694 |
| Surface | 10 | 87.04709G | 87.01695 |
| Surface | 9 | 87.04708G | 87.01696 |
| Rinse | - | 87.04701E1 | 87.01697 |
| Rinse | - | 87.04700E1 | 87.01698 |
| Rinse-blank | - | 87.047001E2 | 87.01699 |
| Core-surface | 2 | 87.04701C1 | 87.01700 |
| Core-interface | 2 | 87.04701C2 | 87.01701 |
| Core-depth | 2 | 87.04701C3 | 87.01702 |

Raw analytical data obtained from the Los Alamos Health and Environmental Chemistry Group (HSE-9) analytical laboratory and the Rocky Mountain Analytical Laboratory are presented in Appendices A and B. The soil samples were analyzed for the following list of analytes (possible contaminants based on past operations at TA-1):

| Metals | Organics | Other |
|---|---|---|
| arsenic | benzene | cyanide |
| barium | carbon tetrachloride | gross alpha |
| beryllium | methylene chloride | gross beta |
| cadmium | toluene | gross gamma |
| chromium | trichloroethylene | thorium |
| lead | vinyl chloride | uranium |
| mercury | hexane | |
| selenium | xylene | |
| silver | methyl ethyl ketone | |

Barium was detected by both laboratories in the range of 0.03-2.7 mg/L. These barium concentrations are well below the Environmental Protection Agency (EPA) Toxicity Characterization Leaching Procedure (TCLP) and Extraction Procedures Toxicity (EP TOX) regulatory level of 100 mg/L. Group HSE-9 reported a single lead concentration of 0.1 mg/L, which is also well below the EP TOX regulatory level of 5 mg/L. Group HSE-9 also reported one sample with a measurable concentration of uranium (85 nanog/g). Typical soil levels for uranium around Los Alamos County are in the 1-2 microg/g concentration range.

Neither laboratory reported volatile or semivolatile organic constituents above the detection limits (see Appendices A and B for detection limits), except an elevated trichloroethylene (0.030 mg/L) reading recorded by Rocky Mountain Analytical Laboratory. The slightly elevated reading is below the TCLP regulatory level of 0.07 mg/L.

## 4. CONCLUSIONS

Concentrations of chemical constituents, which were used at TA-I, are all below the regulatory levels defined by the EPA for both the TCLP and EP TOX protocols. Laboratory analytical results from verification sampling at targeted sampling areas are consistent with the assumption that decontamination and decommissioning with respect to non-radiological constituents was accomplished with removal of radiological contamination.

# APPENDIX A

## Analytical Results

## Raw Data Sheets

Health and Environmental Chemistry Group

Los Alamos National Laboratory

TA-1 SOILS

ANALYSIS DATA SHEET # 6207

Post Sampling Conference Completed With SB and Samples Submitted On 4/29/87 Time 2:30pm

Due 5/13/87 Project # ——— Estimate of Time Involved 45 hours Actual Time 50 hours

Analytical Results and Remarks PTGCMSD ≈5 gms soil weighed out, 5 ml water added. Matrix spike added to duplicates, surrogates + internal standards added to all. All run in duplicate, all within 7 days of receipt. % moisture determination made. Noted solvents methylene chloride, carbon disulfide, and acetone in some runs. Reported only if found in duplicate. ~~Ex~~ HSE9 blank did not contain these solvents. 20-100ppb acetone estimated in #87.0470002

If Chain of Custody, Seal(s) Intact: Yes ✓ No ___ Seal(s) Broken By: ___ Date ___

Printed Data Output Attached: Yes ___ No ___ Other Sheets Attached: Yes ___ No ___ (DE=Date Extracted, DA=Date Analyzed)

See attached

| Sample Number | DE/DA | Compound | CAS # | Analytical Result (Units) | Analytical Uncertainty | MDL | Comments |
|---|---|---|---|---|---|---|---|
| 87.0470001 | | Volatiles | 19A | <MDL | ±40% | 200ug/kg | Average % recovery of surrogates + matrix: 124.2% |
| 87.0470002 | | Volatiles | " | " | " | " | " 96.0% |
| 87.0470003 | | " | | | | | " 79.5 |
| 87.04702 | | | | | | | " 65.1 |
| 87.04703 | | | | | | | " 83.3 |
| 87.04704 | | | | | | | " 101.6 |
| 87.04705 | | | | | | | " 93.9 |
| 87.04706 | | | | | | | " 100.7 |
| 87.04707 | | | | | | | " 59.3 |

Approved By: Analyst [signature] Notebook R6981 Page 93 Date 5/13/87 QC Coordinator ___

Section Leader [signature] Date 5/13/87 Computer Entry ___ Date ___

01125 (0025)

Carbon disulfide detected at estimated 20-100ppb in 87.04705D + 87.04706D.
All runs had at least one acceptable surrogate/matrix recovery as defined by EPA CLP protocol.

REQUESTOR DATA SHEET # 5207

Sampled by Lynn Schoen Collection Date 4/20 + 21/87 Time [illegible] Weather [illegible] Log Book ____ Page ____

Presampling Conference Completed With [illegible] On 4/25/87 Send Report To [illegible] Witness [illegible]

Phone 7-[illegible] Source of Sample: TA-1 Reason for Sampling ____

Group HSE-8 Site TA-59 Building OH-3 Room No. 116

Priority Assigned: 1. Emergency; 2. Recognized Danger; 3. Imminent Deadline; 4. Special Survey; 5. Routine;

(Circle One) Priority Approval: ____ (1. GL or DGL; 2. or 3. AGL; 4. or 5. SL)

Method of Analysis Complies With: ____

Background Information Useful to Analyst (Contamination Levels, Hazards, Etc.) Requested analytes: Carbon Tetrachloride, hexane, methylethyl ketone, vinyl chloride, Toluene, Benzene, Trichloroethane

Chain of Custody: Yes X (See Attached Form) No ____ Other Information ____

All Samples Submitted to HSE-9 Must Be Screened For Radioactivity. Samples Containing Greater Than 20 dpm Total Alpha or 100 dpm Combined Gamma/Beta Contamination Cannot Be Handled At TA-59.

| Sample Number | Other I.D. | Sampling Location | Analysis Requested | Sampling Method | Sample Type | Preservative Utilized | Radioactivity Scan (dpm) Alpha | Radioactivity Scan (dpm) Beta/Gamma | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 87047060 | — | | VOA | | | | | | |
| 87047050 | | | | | | | | | |
| 87047070 | | | | | | | | | |
| 87047030 | | | | | | | | | |
| 87047000 | | | | | | | | | |
| 87047020 | | | | | | | | | |
| 87047000 | | | | | | | | | |

Sampling Method: 24FC=24 Hour Flow-Weighted Composite; 24TC=24 Hour Time-Weighted Composite; G=Grab; B=Bail; D=Drill; C=Core; P=Pump; O=Other (Please Specify)

Sample Type: E=Effluent; SL=Sludge; SD=Soil; SC-Soil Core; WW-Well Water; SW=Surface Water; O=Other

Preservative: F=Filtered; NF=Non-Filtered; NA=Non Acidified; A-$H_2SO_4$(2 ml/l); A-$HNO_3$(5 ml/l); A-$HNO_3$(5 ml/l); A-$H_3PO_4$ & $CuSO_4$; A-Other; I=Iced; P-NaOH.

SOILS

SUPPLEMENTAL ANALYSIS DATA SHEET # 6207

| Sample Numbers | | DE/DA | Compound | CAS # | Analytical Result (Units) | Analytical Uncertainty | MDL | Comments |
|---|---|---|---|---|---|---|---|---|
| Submitter's | Analyst's | | | | | | | |
| | 00.97376 | | 19A (volatiles) | 19A | < MDL | ± 40% | 200ug/kg | |
| | 77 | | " | " | " | " | " | |
| | 78 | | " | " | " | " | " | |
| | 79 | | " | " | " | " | " | |
| | 80 | | " | " | " | " | " | |
| | | | | | | | | |
| 87.30345 | Blank | | 19A | 19A | | | | Sampling jar + distilled $H_2O$ delivered to me by LS. on 5/11/87 to check for solvents in glassware. |
| | | | Note: Tentatively identified Tetrahydrofuran & one other oxygenated volatile, < 300ppb estimated | | | | | |

Approved By: Analyst [signature] Notebook R698 Page 93 Date 5/10/87 QC Coordinator mag 5-13-87

Section Leader [signature] Date 5/13/87 Computer Entry _____ Date _____

SUPPLEMENTAL REQUESTOR DATA SHEET # 6207

| Sample Number | Other I.D. | Sampling Location | Analysis Requested | Sampling Method | Sample Type | Preservative Utilized | Radioactivity Scan (dpm) Alpha | Radioactivity Scan (dpm) Beta/Gamma | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| [illegible] | | | VOA | | | | | | |
| [illegible] | | | VOA | | | | | | |
| | | | | | | | | | |
| 00.97% | | | VOA | | | | | | |
| 77 | | | | | | | | | |
| 78 | | | | | | | | | |
| 79 | | | | | | | | | |
| 80 | | | | | | | | | |

Sampling Method: 24FC=24 Hour Flow-Weighted Composite; 24TC=24 Hour Time-Weighted Composite; G=Grab; B=Bail; D=Drill; C=Core; P=Pump; O=Other (Please Specify)

Sample Type: E=Effluent; SL=Sludge: SO=Soil; SC-Soil Core; WW-Well Water; SW=Surface Water; O=Other

Preservative: F=Filtered; NF=Non-Filtered; NA=Non Acidified; A-$H_2SO_4$(2 ml/l); A-$HNO_3$(5 ml/l); A-$HNO_3$(5 ml/l); A-$H_3PO_4$ & $CuSO_4$; A-Other; I=Iced; P-NaOH.

# HSE-9 ANALYTICAL RESULTS

AB 6-MAY-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01687 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01688 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01689 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01690 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01691 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01692 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01693 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01694 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01697 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01698 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01699 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01700 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01701 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01702 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |

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# HBE-9 ANALYTICAL RESULTS

AS 6-May-1987 DN

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01687 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01688 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01689 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01690 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01691 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01692 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01693 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01694 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01697 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01698 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01699 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01700 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01701 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01702 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |

THESE DATA MEET ESTABLISHED HSEY GROUP QUALITY ASSURANCE STANDARDS

[illegible] 5-6-87
SECTION LEADER

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# HSEY-9 ANALYTICAL RESULTS

BA 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.5000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01687 | 05971 | < | 0.5000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01688 | 05971 | | 0.8000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01689 | 05971 | | 0.6000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01690 | 05971 | < | 0.5000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01691 | 05971 | | 0.6000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01692 | 05971 | < | 0.5000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01693 | 05971 | < | 0.5000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01694 | 05971 | | 0.5000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01700 | 05971 | | 0.7000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01701 | 05971 | < | 0.5000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01702 | 05971 | | 0.6000 | 0.5000 | MG/L | 5/06/87 | |

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# HSE-9 ANALYTICAL RESULTS

BE 8-May-1987 DK

| SAMPLE NUMBER | REQ NUM | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|
| 87.01686 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01687 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01688 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01689 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01690 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01691 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01692 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01693 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01694 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01697 | 05972 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01698 | 05972 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01699 | 05972 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01700 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01701 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01702 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |

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| Sample No. | Other ID No. | Analysis Type | Cas. Number | Analytical Result | | Units | Uncertainty +/- |
|---|---|---|---|---|---|---|---|
| | | Benzene | 71432 | < | 0.025 | MG/L | 0.005 |
| | | 1,1,1-Trichloro | 71556 | < | 0.025 | MG/L | 0.005 |
| | | Vinyl Chloride | 75014 | < | 0.050 | MG/L | 0.005 |
| | | Methylene Chlor | 75092 | < | 0.050 | MG/L | 0.005 |
| | | o-Xylene | 95476 | < | 0.050 | MG/L | 0.005 |
| | | Ag | AG | < | 0.01 | MG/L | 0.005 |
| | | As | AS | < | 0.2 | MG/L | 0.1 |
| | | Ba | BA | | 1.2 | MG/L | 0.1 |
| | | Be | BE | < | 0.002 | MG/L | 0.001 |
| | | Cd | CD | < | 0.01 | MG/L | 0.005 |
| | | Total Cyanide | CN | < | 1.0 | MG/KG | 0.5 |
| | | Cr | CR | < | 0.02 | MG/L | 0.01 |
| | | Hg | HG | < | 0.1 | UG/L | 0.05 |
| | | Pb | PB | < | 0.1 | MG/L | 0.05 |
| | | Se | SE | < | 0.4 | MG/L | 0.1 |
| 87.04734 | 87.04708F | Cr | CR | < | 0.01 | MG/L | 0.005 |
| 87.04735 | 87.04709F | Cr | CR | < | 0.01 | MG/L | 0.005 |

Date: 5/21/89

Approved, Contracting

no QC's were included

Date: / /

Approved, Quality Control

# HHE-9 ANALYTICAL RESULTS

SE 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01687 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01688 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01689 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01690 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01691 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01692 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01693 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01694 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01697 | 05972 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01698 | 05972 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01699 | 05972 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01700 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01701 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01702 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |

THESE DATA MEET ESTABLISHED HSEY GROUP QUALITY ASSURANCE STANDARDS

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mag 5-6-87
QUALITY ASSURANCE OFFICER

# HAE-9 ANALYTICAL RESULTS

PH 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01687 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01688 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01689 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01690 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01691 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01692 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01693 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01694 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01697 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01698 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01699 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01700 | 05971 | < | ~~0.0500~~ 0.0 | 0.0500 | MG/L | | |
| 87.01701 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01702 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

5-6-87

SECTION LEADER

mag 5-6-87

QUALITY ASSURANCE OFFICER

# HAE-9 ANALYTICAL RESULTS

HG 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01687 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01688 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01689 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01690 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01691 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01692 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01693 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01694 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01697 | 05972 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01698 | 05972 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01699 | 05972 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01700 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01701 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01702 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

[illegible] 5-6-87

SECTION LEADER

mag 5-6-87

QUALITY ASSURANCE OFFICER

# HSE-9 ANALYTICAL RESULTS

CR 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01687 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01688 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01689 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01690 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01691 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01692 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01693 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01694 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01695 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01696 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01697 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01698 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01699 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01700 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01701 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01702 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

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mag 5-6-87 — QUALITY ASSURANCE OFFICER

# HRE-9 ANALYTICAL RESULTS

CD 8-May-1987 DO

| SAMPLE NUMBER | REQ NUM | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|
| 00.01100 | 09999 | 1.1000 | 0.1000 | MG/L | 2/26/87 | |
| 00.01100 | 09999 | 1.0000 | 0.1000 | MG/L | 5/06/87 | |
| 00.01100 | 09999 | 1.1000 | 0.1000 | MG/L | 5/06/87 | |
| 00.01100 | 09999 | 1.1000 | 0.1000 | MG/L | 5/08/87 | |
| 00.01100 | 09999 | 1.1000 | 0.1000 | MG/L | 5/08/87 | |
| 00.01100 | 09999 | 1.1000 | 0.1000 | MG/L | 5/01/87 | |
| 00.01100 | 09999 | 1.1000 | 0.1000 | MG/L | 5/01/87 | |
| 00.01100 | 09999 | 1.0000 | 0.1000 | MG/L | 3/03/87 | |
| 00.01100 | 09999 | 1.0000 | 0.1000 | MG/L | 3/03/87 | |
| 00.01100 | 09999 | 1.0600 | 0.1100 | MG/L | 3/17/87 | |
| 00.01100 | 09999 | 1.1000 | 0.1000 | MG/L | 2/26/87 | |
| 00.01100 | 09999 | 1.0900 | 0.1000 | MG/L | 3/03/87 | |
| 00.01100 | 09999 | 1.0900 | 0.1000 | MG/L | 3/03/87 | |
| 00.96478 | 09999 | 81.0000 | 8.1000 | UG/L | 5/06/87 | QC sample |
| 00.96478 | 09999 | 81.0000 | 8.1000 | UG/L | 11/26/86 | |
| 00.96478 | 09999 | 70.0000 | 10.0000 | UG/L | 11/18/86 | |
| 00.96478 | 09999 | 0.0870 | 0.0100 | MG/L | 5/01/87 | |
| 00.96478 | 09999 | 67.0000 | 6.7000 | UG/L | 11/26/86 | |
| 00.96478 | 09999 | 88.0000 | 9.0000 | UG/L | 3/03/87 | |
| 00.96478 | 09999 | 81.0000 | 8.0000 | UG/L | 11/18/86 | |
| 00.96478 | 09999 | 76.0000 | 7.6000 | UG/L | 11/26/86 | |
| 00.96478 | 09999 | 83.0000 | 8.0000 | UG/L | 3/03/87 | |
| 00.96478 | 09999 | 88.3000 | 8.8000 | UG/L | 5/08/87 | |
| 00.96478 | 09999 | 81.0000 | 8.0000 | UG/L | 2/02/87 | |
| 00.96478 | 09999 | 81.0000 | 8.0000 | UG/L | 1/21/87 | |
| 00.96478 | 09999 | 83.8000 | 8.4000 | UG/L | 5/08/87 | |
| 00.96478 | 09999 | 68.0000 | 6.8000 | UG/L | 11/26/86 | |
| 00.96478 | 09999 | 89.0000 | 8.9000 | UG/L | 5/06/87 | |
| 00.96478 | 09999 | 76.0000 | 8.0000 | UG/L | 2/26/87 | |
| 00.96478 | 09999 | 83.0000 | 8.0000 | UG/L | 2/02/87 | |
| 00.96478 | 09999 | 86.0000 | 9.0000 | UG/L | 2/26/87 | |

THESE DATA MEET ESTABLISHED HSEO GROUP QUALITY ASSURANCE STANDARDS

WLB 5-8-87
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| SAMPLE NUMBER | CERTIFIED VALUE NAME | CERTIFIED VALUE | CERTIFIED VALUE UNCERTAINTY | CERTIFIED VALUE UNITS | CODE | N |
|---|---|---|---|---|---|---|
| 00.01100 | CD | 1.00 | 0.03 | MG/L | 86EPA | 02 |
| 00.96478 | CD | 78. | 5. | UG/L | 86GAU | 04 |

# HSE-9 ANALYTICAL RESULTS

CD 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01687 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01688 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01689 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01690 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01691 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01692 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01693 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01694 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01697 | 05972 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01698 | 05972 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01699 | 05972 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01700 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01701 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01702 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

SAB 5-6-87
SECTION LEADER

mag 5-6-87
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# HSE-9 ANALYTICAL RESULTS

TH 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01687 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01688 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01689 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01690 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01691 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01692 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01693 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01694 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01697 | 05972 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01698 | 05972 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01699 | 05972 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01700 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01701 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01702 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

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# HSE-9 ANALYTICAL RESULTS

U 6-May-1987 MK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS* | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01687 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01688 | 05971 | | 85.00 | 8.50 | UG/L | 5/06/87 | |
| 87.01689 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01690 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01691 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01692 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01693 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01694 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01697 | 05972 | | 2.60 | 1.00 | UG/L | 5/06/87 | |
| 87.01698 | 05972 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01699 | 05972 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01700 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01701 | 05971 | | 2.50 | 1.00 | UG/L | 5/06/87 | |
| 87.01702 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

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# APPENDIX B

## Analytical Results

## Raw Data Sheets

## Rocky Mountain Analytical Laboratory

HSE-9 Analytical Chemistry Request

Sample Sheet No.: 5388

Requestor: Lynn Scholl-Fritz

Date Submitted: 05/28/87

| Sample No. | Contractor | Other ID No. | Analyses Desired |
|---|---|---|---|
| 87.04725 | Rocky Mtn. Anal. | 87.04700A1-B1 | TCLP Metals & Org. plus Total CN |
| 87.04726 | Rocky Mtn. Anal. | 87.04700A2-B2 | TCLP Metals & Org. plus Total CN |
| 87.04727 | Rocky Mtn. Anal. | 87.04700A3-B3 | TCLP Metals & Org. plus Total CN |
| 87.04728 | Rocky Mtn. Anal. | 87.04702A-B | TCLP Metals & Org. plus Total CN |
| 87.04729 | Rocky Mtn. Anal. | 87.04703A-B | TCLP Metals & Org. plus Total CN |
| 87.04730 | Rocky Mtn. Anal. | 87.04704A-B | TCLP Metals & Org. plus Total CN |
| 87.04731 | Rocky Mtn. Anal. | 87.04705A-B | TCLP Metals & Org. plus Total CN |
| 87.04732 | Rocky Mtn. Anal. | 87.04706A-B | TCLP Metals & Org. plus Total CN |
| 87.04733 | Rocky Mtn. Anal. | 87.04707A-B | TCLP Metals & Org. plus Total CN |
| 87.04734 | Rocky Mtn. Anal. | 87.04708F | Chromium |
| 87.04735 | Rocky Mtn. Anal. | 87.04709F | Chromium |

Total Number of Samples: 11

## Analytical Report

Date: 05/21/87

To: Lynn Scholl-Fritz
MS - K 490
Tel. (505)-667-0808

From: Larry R. Field
HSR-9 / Contracting
MS - K484
Tel. (505)-667-5889

Source of Samples: ——> TA - 1

Sample Sheet # 5388

| Sample No. | Other ID No. | Analysis Type | Cas. Number | Analytical Result | | Units | Uncertainty +/- |
|---|---|---|---|---|---|---|---|
| 87.04725 | 87.04700A1-B | Toluene | 108883 | < | 0.025 | MG/L | 0.005 |
| | | Hexane | 110543 | < | 0.050 | MG/L | 0.005 |
| | | CCl4 | 56235 | < | 0.025 | MG/L | 0.005 |
| | | Benzene | 71432 | < | 0.025 | MG/L | 0.005 |
| | | 1,1,1-Trichloro | 71556 | < | 0.025 | MG/L | 0.005 |
| | | Vinyl Chloride | 75014 | < | 0.050 | MG/L | 0.005 |
| | | Methylene Chlor | 75092 | < | 0.050 | MG/L | 0.005 |
| | | o-Xylene | 95476 | < | 0.050 | MG/L | 0.005 |
| | | Ag | AG | < | 0.01 | MG/L | 0.005 |
| | | As | AS | < | 0.2 | MG/L | 0.1 |
| | | Ba | BA | | 2.7 | MG/L | 0.1 |
| | | Be | BE | < | 0.002 | MG/L | 0.001 |
| | | Cd | CD | < | 0.01 | MG/L | 0.005 |
| | | Total Cyanide | CN | < | 1.0 | MG/KG | 0.5 |
| | | Cr | CR | < | 0.02 | MG/L | 0.01 |
| | | Hg | HG | < | 0.1 | UG/L | 0.05 |
| | | Pb | PB | < | 0.1 | MG/L | 0.05 |
| | | Se | SE | < | 0.4 | MG/L | 0.1 |
| 87.04726 | 87.04700A2-B | Toluene | 108883 | < | 0.025 | MG/L | 0.005 |
| | | Hexane | 110543 | < | 0.050 | MG/L | 0.005 |
| | | CCl4 | 56235 | < | 0.025 | MG/L | 0.005 |
| | | Benzene | 71432 | < | 0.025 | MG/L | 0.005 |
| | | 1,1,1-Trichloro | 71556 | < | 0.025 | MG/L | 0.005 |
| | | Vinyl Chloride | 75014 | < | 0.050 | MG/L | 0.005 |
| | | Methylene Chlor | 75092 | < | 0.050 | MG/L | 0.005 |
| | | o-Xylene | 95476 | < | 0.050 | MG/L | 0.005 |
| | | Ag | AG | < | 0.01 | MG/L | 0.005 |
| | | As | AS | < | 0.2 | MG/L | 0.1 |
| | | Ba | BA | | 1.2 | MG/L | 0.1 |
| | | Be | BE | < | 0.002 | MG/L | 0.001 |
| | | Cd | CD | < | 0.01 | MG/L | 0.005 |

| Sample No. | Other ID No. | Analysis Type | Cas. Number | Analytical Result | | Units | Uncertainty +/- |
|---|---|---|---|---|---|---|---|
| | | Cr | CR | < | 0.02 | MG/L | 0.01 |
| | | Hg | HG | < | 0.1 | UG/L | 0.05 |
| | | Pb | PB | < | 0.1 | MG/L | 0.05 |
| | | Se | SE | < | 0.4 | MG/L | 0.1 |
| 87.04727 | 87.04700A3-B | Toluene | 108883 | < | 0.025 | MG/L | 0.005 |
| | | Hexane | 110543 | < | 0.050 | MG/L | 0.005 |
| | | CCl4 | 56235 | < | 0.025 | MG/L | 0.005 |
| | | Benzene | 71432 | < | 0.025 | MG/L | 0.005 |
| | | 1,1,1-Trichloro | 71556 | < | 0.025 | MG/L | 0.005 |
| | | Vinyl Chloride | 75014 | < | 0.050 | MG/L | 0.005 |
| | | Methylene Chlor | 75092 | < | 0.050 | MG/L | 0.005 |
| | | o-Xylene | 95476 | < | 0.050 | MG/L | 0.005 |
| | | Ag | AG | < | 0.01 | MG/L | 0.005 |
| | | As | AS | < | 0.2 | MG/L | 0.1 |
| | | Ba | BA | | 1.0 | MG/L | 0.1 |
| | | Be | BE | < | 0.002 | MG/L | 0.001 |
| | | Cd | CD | < | 0.01 | MG/L | 0.005 |
| | | Total Cyanide | CN | < | 1.0 | MG/KG | 0.5 |
| | | Cr | CR | < | 0.02 | MG/L | 0.01 |
| | | Hg | HG | < | 0.1 | UG/L | 0.05 |
| | | Pb | PB | < | 0.1 | MG/L | 0.05 |
| | | Se | SE | < | 0.4 | MG/L | 0.1 |
| 87.04728 | 87.04702A-B | Toluene | 108883 | < | 0.025 | MG/L | 0.005 |
| | | Hexane | 110543 | < | 0.050 | MG/L | 0.005 |
| | | CCl4 | 56235 | < | 0.025 | MG/L | 0.005 |
| | | Benzene | 71432 | < | 0.025 | MG/L | 0.005 |
| | | 1,1,1-Trichloro | 71556 | < | 0.025 | MG/L | 0.005 |
| | | Vinyl Chloride | 75014 | < | 0.050 | MG/L | 0.005 |
| | | Methylene Chlor | 75092 | < | 0.050 | MG/L | 0.005 |
| | | o-Xylene | 95476 | < | 0.050 | MG/L | 0.005 |
| | | Ag | AG | < | 0.01 | MG/L | 0.005 |
| | | As | AS | < | 0.2 | MG/L | 0.1 |
| | | Ba | BA | | 1.9 | MG/L | 0.1 |
| | | Be | BE | < | 0.002 | MG/L | 0.001 |
| | | Cd | CD | < | 0.01 | MG/L | 0.005 |
| | | Total Cyanide | CN | < | 1.0 | MG/KG | 0.5 |
| | | Cr | CR | < | 0.02 | MG/L | 0.01 |
| | | Hg | HG | < | 0.1 | UG/L | 0.05 |
| | | Pb | PB | < | 0.1 | MG/L | 0.05 |
| | | Se | SE | < | 0.4 | MG/L | 0.1 |
| 87.04729 | 87.04703A-B | Toluene | 108883 | < | 0.025 | MG/L | 0.005 |
| | | Hexane | 110543 | < | 0.050 | MG/L | 0.005 |
| | | CCl4 | 56235 | < | 0.025 | MG/L | 0.005 |
| | | Benzene | 71432 | < | 0.025 | MG/L | 0.005 |
| | | 1,1,1-Trichloro | 71556 | < | 0.025 | MG/L | 0.005 |
| | | Vinyl Chloride | 75014 | < | 0.050 | MG/L | 0.005 |
| | | Methylene Chlor | 75092 | < | 0.050 | MG/L | 0.005 |
| | | o-Xylene | 95476 | < | 0.050 | MG/L | 0.005 |
| | | Ag | AG | < | 0.01 | MG/L | 0.005 |
| | | As | AS | < | 0.2 | MG/L | 0.1 |
| | | Ba | BA | | 1.6 | MG/L | 0.1 |
| | | Be | BE | < | 0.002 | MG/L | 0.001 |
| | | Cd | CD | < | 0.01 | MG/L | 0.005 |
| | | Total Cyanide | CN | < | 1.0 | MG/KG | 0.5 |
| | | Cr | CR | < | 0.02 | MG/L | 0.01 |
| | | Hg | HG | < | 0.1 | UG/L | 0.05 |
| | | Pb | PB | < | 0.1 | MG/L | 0.05 |
| | | Se | SE | < | 0.4 | MG/L | 0.1 |

| Sample No. | Other ID No. | Analysis Type | Cas. Number | | Analytical Result | Units | Uncertainty +/- |
|---|---|---|---|---|---|---|---|
| 87.04730 | 87.04704A-B | Toluene | 108883 | < | 0.025 | MG/L | 0.005 |
| | | Hexane | 110543 | < | 0.050 | MG/L | 0.005 |
| | | CCl4 | 56235 | < | 0.025 | MG/L | 0.005 |
| | | Benzene | 71432 | < | 0.025 | MG/L | 0.005 |
| | | 1,1,1-Trichloro | 71556 | < | 0.025 | MG/L | 0.005 |
| | | Vinyl Chloride | 75014 | < | 0.050 | MG/L | 0.005 |
| | | Methylene Chlor | 75092 | < | 0.050 | MG/L | 0.005 |
| | | o-Xylene | 95476 | < | 0.050 | MG/L | 0.005 |
| | | Ag | AG | < | 0.01 | MG/L | 0.005 |
| | | As | AS | < | 0.2 | MG/L | 0.1 |
| | | Ba | BA | | 1.3 | MG/L | 0.1 |
| | | Be | BE | < | 0.002 | MG/L | 0.001 |
| | | Cd | CD | < | 0.01 | MG/L | 0.005 |
| | | Total Cyanide | CN | < | 1.0 | MG/KG | 0.5 |
| | | Cr | CR | < | 0.02 | MG/L | 0.01 |
| | | Hg | HG | < | 0.1 | UG/L | 0.05 |
| | | Pb | PB | < | 0.1 | MG/L | 0.05 |
| | | Se | SE | < | 0.4 | MG/L | 0.1 |
| 87.04731 | 87.04705A-B | Toluene | 108883 | < | 0.025 | MG/L | 0.005 |
| | | Hexane | 110543 | < | 0.050 | MG/L | 0.005 |
| | | CCl4 | 56235 | < | 0.025 | MG/L | 0.005 |
| | | Benzene | 71432 | < | 0.025 | MG/L | 0.005 |
| | | 1,1,1-Trichloro | 71556 | < | 0.025 | MG/L | 0.005 |
| | | Vinyl Chloride | 75014 | < | 0.050 | MG/L | 0.005 |
| | | Methylene Chlor | 75092 | < | 0.050 | MG/L | 0.005 |
| | | o-Xylene | 95476 | < | 0.050 | MG/L | 0.005 |
| | | Ag | AG | < | 0.01 | MG/L | 0.005 |
| | | As | AS | < | 0.2 | MG/L | 0.1 |
| | | [illegible] | [illegible] | | 1.4 | [illegible] | 0.1 |
| | | Be | BE | < | 0.002 | MG/L | 0.001 |
| | | Cd | CD | < | 0.01 | MG/L | 0.005 |
| | | Total Cyanide | CN | < | 1.0 | MG/KG | 0.5 |
| | | Cr | CR | < | 0.02 | MG/L | 0.01 |
| | | Hg | HG | < | 0.1 | UG/L | 0.05 |
| | | Pb | PB | < | 0.1 | MG/L | 0.05 |
| | | Se | SE | < | 0.4 | MG/L | 0.1 |
| 87.04732 | 87.04706A-B | Toluene | 108883 | < | 0.025 | MG/L | 0.005 |
| | | Hexane | 110543 | < | 0.050 | MG/L | 0.005 |
| | | CCl4 | 56235 | < | 0.025 | MG/L | 0.005 |
| | | Benzene | 71432 | < | 0.025 | MG/L | 0.005 |
| | | 1,1,1-Trichloro | 71556 | < | 0.025 | MG/L | 0.005 |
| | | Vinyl Chloride | 75014 | < | 0.050 | MG/L | 0.005 |
| | | Methylene Chlor | 75092 | < | 0.050 | MG/L | 0.005 |
| | | o-Xylene | 95476 | < | 0.050 | MG/L | 0.005 |
| | | Ag | AG | < | 0.01 | MG/L | 0.005 |
| | | As | AS | < | 0.2 | MG/L | 0.1 |
| | | [illegible] | [illegible] | | 1.8 | [illegible] | 0.1 |
| | | Be | BE | < | 0.002 | MG/L | 0.001 |
| | | Cd | CD | < | 0.01 | MG/L | 0.005 |
| | | Total Cyanide | CN | < | 1.0 | MG/KG | 0.5 |
| | | Cr | CR | < | 0.02 | MG/L | 0.01 |
| | | Hg | HG | < | 0.1 | UG/L | 0.05 |
| | | Pb | PB | < | 0.1 | MG/L | 0.05 |
| | | Se | SE | < | 0.4 | MG/L | 0.1 |
| 87.04733 | 87.04707A-B | Toluene | 108883 | < | 0.025 | MG/L | 0.005 |
| | | Hexane | 110543 | < | 0.050 | MG/L | 0.005 |
| | | CCl4 | 56235 | < | 0.025 | MG/L | 0.005 |

# APPENDIX B

## Analytical Results

## Raw Data Sheets

## Rocky Mountain Analytical Laboratory

# HSE-9 ANALYTICAL RESULTS

U 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS* | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01687 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01688 | 05971 | | 85.00 | 8.50 | UG/L | 5/06/87 | |
| 87.01689 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01690 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01691 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01692 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01693 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01694 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01697 | 05972 | | 2.60 | 1.00 | UG/L | 5/06/87 | |
| 87.01698 | 05972 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01699 | 05972 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01700 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |
| 87.01701 | 05971 | | 2.50 | 1.00 | UG/L | 5/06/87 | |
| 87.01702 | 05971 | < | 1.00 | 1.00 | UG/L | 5/06/87 | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

SWB 5-6-87
SECTION LEADER

mag 5-6-87
QUALITY ASSURANCE OFFICER

*Nanog/g

# HSE-9 ANALYTICAL RESULTS

TH 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01687 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01688 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01689 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01690 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01691 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01692 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01693 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01694 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01697 | 05972 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01698 | 05972 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01699 | 05972 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01700 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01701 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |
| 87.01702 | 05971 | < | 0.0001 | 0.0001 | MG/L | | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

[illegible] 5-6-87
SECTION LEADER

mag 5-6-87
QUALITY ASSURANCE OFFICER

# HHE-9 ANALYTICAL RESULTS

SE 6-May-1987 DK

| SAMPLE NUMBER | REG NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01687 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01688 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01689 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01690 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01691 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01692 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01693 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01696 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01697 | 05972 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01698 | 05972 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01699 | 05972 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01700 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01701 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01702 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |

THESE DATA MEET ESTABLISHED HSEY GROUP QUALITY ASSURANCE STANDARDS

Rob 5-6-87
SECTION LEADER

mag 5-6-87
QUALITY ASSURANCE OFFICER

# HSE-9 ANALYTICAL RESULTS

PH 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01687 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01688 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01689 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01690 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01691 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01692 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01693 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01694 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01697 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01698 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01699 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01700 | 05971 | < | 0.10 ~~0.0500~~ mg | 0.0500 | MG/L | | |
| 87.01701 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01702 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

[illegible] 5-6-87
SECTION LEADER

mag 5-6-87
QUALITY ASSURANCE OFFICER

# HBE-9 ANALYTICAL RESULTS

HG 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01687 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01688 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01689 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01690 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01691 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01692 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01693 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01694 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01697 | 05972 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01698 | 05972 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01699 | 05972 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01700 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01701 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |
| 87.01702 | 05971 | < | 0.0050 | 0.0050 | MG/L | | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

[illegible] 5-6-87
SECTION LEADER

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QUALITY ASSURANCE OFFICER

# HSE-9 ANALYTICAL RESULTS

CR 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01687 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01688 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01689 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01690 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01691 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01692 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01693 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01694 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01695 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01696 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01697 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01698 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01699 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01700 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01701 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01702 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

[illegible] 5-6-87
SECTION LEADER

mag 5-6-87
QUALITY ASSURANCE OFFICER

# HSE-9 ANALYTICAL RESULTS

CD 8-May-1987 QA

| SAMPLE NUMBER | REQ NUM | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|
| 00.01100 | 09999 | 1.1000 | 0.1000 | MG/L | 2/26/87 | |
| 00.01100 | 09999 | 1.0000 | 0.1000 | MG/L | 5/06/87 | |
| 00.01100 | 09999 | 1.1000 | 0.1000 | MG/L | 5/06/87 | |
| 00.01100 | 09999 | 1.1000 | 0.1000 | MG/L | 5/08/87 | |
| 00.01100 | 09999 | 1.1000 | 0.1000 | MG/L | 5/08/87 | |
| 00.01100 | 09999 | 1.1000 | 0.1000 | MG/L | 5/01/87 | |
| 00.01100 | 09999 | 1.1000 | 0.1000 | MG/L | 5/01/87 | |
| 00.01100 | 09999 | 1.0000 | 0.1000 | MG/L | 3/03/87 | |
| 00.01100 | 09999 | 1.0000 | 0.1000 | MG/L | 3/03/87 | |
| 00.01100 | 09999 | 1.0600 | 0.1100 | MG/L | 3/17/87 | |
| 00.01100 | 09999 | 1.1000 | 0.1000 | MG/L | 2/26/87 | |
| 00.01100 | 09999 | 1.0900 | 0.1000 | MG/L | 3/03/87 | |
| 00.01100 | 09999 | 1.0900 | 0.1000 | MG/L | 3/03/87 | |
| 00.96478 | 09999 | 81.0000 | 8.1000 | UG/L | 5/06/87 | QC sample |
| 00.96478 | 09999 | 81.0000 | 8.1000 | UG/L | 11/26/86 | |
| 00.96478 | 09999 | 70.0000 | 10.0000 | UG/L | 11/18/86 | |
| 00.96478 | 09999 | 0.0870 | 0.0100 | MG/L | 5/01/87 | |
| 00.96478 | 09999 | 67.0000 | 6.7000 | UG/L | 11/26/86 | |
| 00.96478 | 09999 | 88.0000 | 9.0000 | UG/L | 3/03/87 | |
| 00.96478 | 09999 | 81.0000 | 8.0000 | UG/L | 11/18/86 | |
| 00.96478 | 09999 | 76.0000 | 7.6000 | UG/L | 11/26/86 | |
| 00.96478 | 09999 | 83.0000 | 8.0000 | UG/L | 3/03/87 | |
| 00.96478 | 09999 | 88.3000 | 8.8000 | UG/L | 5/08/87 | |
| 00.96478 | 09999 | 91.0000 | 8.0000 | UG/L | 2/02/87 | |
| 00.96478 | 09999 | 81.0000 | 8.0000 | UG/L | 1/21/87 | |
| 00.96478 | 09999 | 83.8000 | 8.4000 | UG/L | 5/08/87 | |
| 00.96478 | 09999 | 68.0000 | 6.8000 | UG/L | 11/26/86 | |
| 00.96478 | 09999 | 89.0000 | 8.9000 | UG/L | 5/06/87 | |
| 00.96478 | 09999 | 76.0000 | 8.0000 | UG/L | 2/26/87 | |
| 00.96478 | 09999 | 83.0000 | 8.0000 | UG/L | 2/02/87 | |
| 00.96478 | 09999 | 86.0000 | 9.0000 | UG/L | 2/26/87 | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

5-8-87
SECTION LEADER

mag 5-9-87
QUALITY ASSURANCE OFFICER

| SAMPLE NUMBER | CERTIFIED VALUE NAME | CERTIFIED VALUE | CERTIFIED VALUE UNCERTAINTY | CERTIFIED VALUE UNITS | CODE H |
|---|---|---|---|---|---|
| 00.01100 | CD | 1.00 | 0.03 | MG/L | 86EPA 02 |
| 00.96478 | CD | 78. | 6. | UG/L | 86GAU 04 |

# HSE-9 ANALYTICAL RESULTS

CH 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01687 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01688 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01689 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01690 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01691 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01692 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01693 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01694 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01697 | 05972 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01698 | 05972 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01699 | 05972 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01700 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01701 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |
| 87.01702 | 05971 | < | 0.0100 | 0.0100 | MG/L | | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

[illegible] 5-6-87
SECTION LEADER

mag 5-6-87
QUALITY ASSURANCE OFFICER

# HSE-9 ANALYTICAL RESULTS

BE 8-May-1987 DK

| SAMPLE NUMBER | REQ NUM | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|
| 87.01686 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01687 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01688 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01689 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01690 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01691 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01692 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01693 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01694 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01697 | 05972 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01698 | 05972 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01699 | 05972 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01700 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01701 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |
| 87.01702 | 05971 | 0.0000 | 1.0000 | UG/L | 5/05/87 | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

[signature] 5-8-87
SECTION LEADER

[signature] 5-9-87
QUALITY ASSURANCE OFFICER

# HSE-9 ANALYTICAL RESULTS

BA 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.5000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01687 | 05971 | < | 0.5000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01688 | 05971 | | 0.8000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01689 | 05971 | | 0.6000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01690 | 05971 | < | 0.5000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01691 | 05971 | | 0.6000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01692 | 05971 | < | 0.5000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01693 | 05971 | < | 0.5000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01699 | 05971 | | 0.5000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01700 | 05971 | | 0.7000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01701 | 05971 | < | 0.5000 | 0.5000 | MG/L | 5/06/87 | |
| 87.01702 | 05971 | | 0.6000 | 0.5000 | MG/L | 5/06/87 | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

Dwb 5-6-87
SECTION LEADER

mag 5-6-87
QUALITY ASSURANCE OFFICER

# HSE-9 ANALYTICAL RESULTS

AS 6-May-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01687 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01688 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01689 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01690 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01691 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01692 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01693 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01694 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01697 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01698 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01699 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01700 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01701 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01702 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

5-6-87 — SECTION LEADER

mag 5-6-87 — QUALITY ASSURANCE OFFICER

# HSE-9 ANALYTICAL RESULTS

AB 6-MAY-1987 DK

| SAMPLE NUMBER | REQ NUM | | RESULT | UNCERTAINTY | UNITS | COMPLETION DATE | COMMENT |
|---|---|---|---|---|---|---|---|
| 87.01686 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01687 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01688 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01689 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01690 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01691 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01692 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01693 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01694 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01697 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01698 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01699 | 05972 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01700 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01701 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |
| 87.01702 | 05971 | < | 0.0500 | 0.0500 | MG/L | | |

THESE DATA MEET ESTABLISHED HSE9 GROUP QUALITY ASSURANCE STANDARDS

AB 5-6-87
SECTION LEADER

mag 5-6-87
QUALITY ASSURANCE OFFICER

# Data base

## Sample # correspondance

| HSEE # | | Database report |
|---|---|---|
| 87.04700 | 01 | 87.04700 |
| | D2 | 701 |
| | D3 | 702 |
| 87.04702 | | 703 |
| 703 | | 704 |
| 704 | | 705 |
| 705 | | 706 |
| 706 | | 707 |
| 707 | | 708 |

# Custody Transfer Record/Lab Work Request

Received By _____ Client Lynn Schmit RFW Contact _____
Date 4/29/87 Client Contact HSE-8 Date Due _____
Assigned to _____ Phone 7-0808 Project Number _____

SAMPLE IDENTIFICATION / ANALYSES REQUESTED

| Sample No. | Client ID No. | Description | Matrix | Date Collected | Container/Preservative | INORGANICS/RAD CR | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 87.04704C | 87.0[illegible]06 | SURFACE | S | | | X | X | | | | | | |
| 87.04700C2 | — 87 | CORE INTERFACE | S | | | X | X | | | | | | |
| 87.04702C | — 88 | SURFACE | S | | | X | X | | | | | | |
| 87.04700C1 | — 89 | CORE-SURFACE | S | | | X | X | | | | | | |
| 87.04700C3 | — 90 | CORE-DEPTH | S | | | X | X | | | | | | |
| 87.04705C | — 91 | SURFACE | S | | | X | X | | | | | | |
| 87.04706C | — 92 | SURFACE | S | | | X | X | | | | | | |
| 87.04703C | — 93 | SURFACE | S | | | X | X | | | | | | |
| 87.04707C | — 94 | SURFACE | S | | | X | X | | | | | | |
| 87.04704G | — 95 | or SURFACE | S | | | ~~X~~ | ~~X~~ | | | X | | | |
| 87.04708G | — 96 | or SURFACE | S | | | ~~X~~ | ~~X~~ | | | X | | | |
| 87.04701E1 | — 97 | RINSE | SW | | | X | X | | | | | | |
| 87.04700E1 | — 98 | RINSE | W | | | X | X | | | | | | |
| 87.04700E2 | — 99 | RINSE BLANK | W | | | X | X | | | | | | |
| 87.04701C1 | 87.0[illegible]00 | CORE-SURFACE | S | | | X | X | | | | | | |
| 87.04701C2 | — 01 | CORE-INTERFACE | S | | | X | X | | | | | | |
| 87.04701C3 | — 02 | CORE-DEPTH | S | | | | | | | | | | |
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| | | | | | | | | | | | | | |

PLEASE RETAIN BANK

Matrix:
S- Soil DS- Drum Solids
W- Water DL- Drum Liquids
O- Oil X- Other

Special Instructions:

| Items/Reason | Relinquished By | Received By | Date | Time | Items/Reason | Relinquished By | Received By | Date | Time |
|---|---|---|---|---|---|---|---|---|---|
| ANALYSIS | [signature] | O Kuel | 4-29/87 | 1445 | | | | | |
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RFW 21-21-001/A-3/EE