Environmental DATA

TRACT U-a/U-b

Available thru the
Oil Shale Project Office

1974 - 1983

One of the responsibilities of the Oil Shale Project Office is to store and manage the environmental data collected on the Prototype Oil Shale Lease Tracts by the lessees.

This report is made available to make other government agencies BLM aware of what is on computer disk.

The five main monitoring activities are:

1. Air Quality & Meteorology
2. Terrestrial
3. Aquatic
4. Hydrology
5. Special Studies

This inventory is preliminary in nature and is constantly being updated and modified to reflect current status.

For further information contact:

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FTS 322-0281

Files are located on the DPS8

Disk Pack - RP017 PACK

The data files are located under sub directory UTAH

The assay data files are located under sub directory UTASSAY

Three programs are under Assay

J23_1
J23_2
J23_3

These were written by Bob Cameron, University of Utah

Osda Assay-Utah

Fisher Assay Data Formats

The Fisher Assay data for a particular well makes up a computer data file. Six different types of records (lines of data) may occur in a file. The first five records in a file, each of which is different, contain descriptive informtion about the well. The rest of the records in the file are represented by the sixth type of record. It is this type of record that contains the assay data. Detailed descriptions of each of the six record types is attached.

J_file No. on PACK, RP017, UTASSAY on DSC computer DPS8

LETC: 3/21/83

OIL SHALE DOCUMENTATION

Record 1 (Title Record - ID)

Column	Contents
1-32	Company name
33-63	Well Name or Station Number for Water Quality
64-65	State Code (Use the Post Office Code) Co=Colorado, UT=Utah, WY=Wyoming
66-72	File Name: This has 2 sections 1 Column 66 Type of Data: Oil Shale A-Channel (Surface) B-Cable tool cuttings C-Core D-Drill cuttings K-Composite Core R-Surface Samples S-Stratigraphic samples (GRAB), (BUTT) T-Trench samples X-X-ray analysis Z-Other
II-Oil Shale Column 67-72	An alphanumeric portion for the file name. It is established according to one of the following criteria: (1) Assay done by LETC: The numerical digits are taken from the SBR illustration no. on page one of the assay data. At least one column must be left, even if it is unused, for special terminating codes (See Section III). (2) Assay done by another laboratory: the numeric digits must not conflict with any LETC assays stored according to the above criteria. At least one column must be left, even if it is unused, for special terminating codes (See Section III).

III Terminating Codes

Special alphanumeric codes may terminate the file name (left justified). They are establsihed according to the following criteria:

A - indicates a modified file for usage by our plotter program with the university's plotter package. It was modified so the footage does not overlap. Both a modified and an unmodified file are available.

C - Indicates a well that has the same location as another well. For the name of the other see record FT.

D - The primary data file of 2 sets of data that do not agree. See codes E & F.

E - The secondary data file of 2 sets of data that do not agree. See codes D & F.

F - Indicates the file is a composite of 2 analyses done by LETC. See codes D & E.

K - Indicates the file is a composite of analyses done by LETC and another laboratory.

L - Indicates the existence of a lithology for the hole coded with the preceding digits. The whole number is used by the computerized log book.

M - An analysis only done by another laboratory.

N - A hole that was analyzed by another laboratory and LETC. This is the code for the analysis completed by the other laboratory. See code P.

P - A hole that was analyzed by LETC and another laboratory. This is the code for the analysis completed by LETC. See code N.

Q - Data from a qualitative oil yield by test tube method.

S - A file that has an interval for which the analysis is not valid. See the data format (columns 9-10).

T - an x-ray file of composite core.

Y - Indicates a well where the validity of the data is questioned.

Z - A file that is considered to be proprietary information. The data may not be released without the consent of the following: (1) The company that provided the information, (2) Head of the Division of Resource Characterization (LETC), or (3) Director of the Laramie Energy Technology Center.

73-75 Abbreviation for the country in which the well is located (left justified).
USA - United States
CAN - Canada

76-77 Year of Analysis (Beginning)

78 Indicates who did the analysis: L-LETC, O-Other, C-composite file of 2 LETC analyses, K-composite file of LETC and another laboratory.

79-80 Code for this record: ID

OIL SHALE DOCUMENTATION
Record 2 (Footage Record - FT)

Column	Contents
1-7	Beginning footage of data present in the file. Decimal in column 6. If no beginning and ending footage is present enter a code of 99999.9
8-14	Ending footage of data present in the file. Decimal in column 13. If no beginning and ending footage is present enter a code of 99999.9
15-23	File name of additional different data for the well specified in header ID. When establishing a well name, see record 1. This section provides a cross-reference to the file name of that additional data file. For cases of multiple related data files each file will refer to another file with the last one referring to the first. This will result in a circular chain of cross-references. NOTE: Columns 15-16 are for the State Code, column 17 is for the type of Data, and columns 18-23 are for the alphanumeric portion of the file name (left justified).
24-27	County abbreviation (Left Justified). Character abbreviation for the primary county name in which the data is located.
28-33	Deposit code (Left Justified). For the appropriate codes consult a geologist. Oil Shale: to be determined
34-37	Formation Code (Left Justified). For the appropriate codes consult a geologist. Oil Shale: to be determined
38-40	Aquifer (Right Justified) USGS codes are used.
41-66	Blank
67-73	OIL SHALE Beginning footage of the sample that contains the largest gallons per ton yield of oil in the file. Decimal in column 72.
74-78	OIL SHALE Maximum yield in gallons per ton of oil found in the file. Decimal in column 77.
79-80	Code for this record: FT

Record 3 (Location Card 1 - L1)

Column	Contents
1-8	Elevation in feet. Decimal in column 6.
9-10	Code for each type of elevation: SF - surface DF - derrick floor DC - drill collar KB - kelly bushing MF - mine floor RB - rotary bushing TC - top of casing TM - topo. map TS - top of section UR - unspecified reference
11-17	Elevation in meters. Decimal in column 16.
18-30	Township designation of well location. Column 18-20 section number (right justified) " 21-23 township number (right justified) " 24 A 5 is entered if the township number has a one-half, for ex: 15 1/2 is entered as 155 (Right Justified) " 25 township abbreviation, for ex. South-S " 26-28 range number (right justified) " 29 A 5 is entered if the range number has a one-half, for ex: 24 1/2 is entered as 245 (Right Justified) " 30 range abbreviation, for ex. West-W
31-39	Quarter corner designation of well location. The section is usually quartered (divided) 3 times. The specification of the well location within each division takes 3 columns. The first division is represented in columns 37-39, the second division in columns 34-36, and the third division in columns 31-33. The right column of each division is a number that tells whether it was quartered (4) or halved (2). The remaining 2 columns used in the description of the division indicate the location of the well: (1) Northeast (NE), Southeast (SE), etc. (2) A C or blank in the right column indicates the well location is placed in the center of the last division.
40-48	Latitude description of well location. Column 40-41 degrees (right justified) " 42-43 minutes (right justified) " 44-48 seconds (decimal in col. 46)
49-58	Longitude description of well location. Column 49-51 degrees (right justified) " 52-53 minutes (right justified) " 54-58 seconds (decimal in col. 56)

59-66	Decimal Latitude description of well location (decimal in col. 61)
67	Latitude designation hemisphere blank - NORTH S - SOUTH
68-76	Decimal Longitude description of well location (decimal in col. 71)
77-78	Blank
79-80	Code for this record: L1

Record 4 (Location Card 2 - L2)

Column	Contents
1-3	Meridian used for survey Ex: 6PM - 6th Prime Meridian in Colorado USM - Ute Special Meridian in Utah SLM - Salt Lake City Meridian in Utah blank - unknown
4-28	Degrees and feet from a section corner or quarter corner to the well location. If you have a location that runs from a quarter corner it is to be recalculated by hand so it runs from a section corner. Reasons: (1) The computer coordinates of all quarter corners are not available, (2) Not all quarters and sections are square. There are enough irregular shapes that it would be very difficult to program the computer to do the conversion for all possible shapes. Column 4-6 section number (right justified) " 7-8 section corner, ex: Northeast-NE " 9 direction to well, North or South only, ex: South-S " 10-12 degrees to well (right justified) " 13-14 minutes to well (right justified) " 15-19 seconds to well (decimal in col. 17) " 20 direction to well, East or West only, ex: West-W " 21-28 feet to well (decimal in col. 26)
29-50	Feet from section lines to the well location. Column 29-36 feet from section side (decimal in col. 34) " 37 code "F" meaning from " 38 direction abbreviation of which section side the measurement was taken from, ex: North-N " 39 code "L" meaning line " 40-47 feet from section side (decimal in col. 45) " 48 code "F" meaning from " 49 direction abbreviation of which section side the measurement was taken from, ex: South-S " 50 code "L" meaning line
51-70	Feet from a section corner or quarter corner to well location. If you have a location that runs from a quarter corner it is to be recalculated by hand so it runs from a section corner. Reasons: (1) The computer coordinates of all quarter corners are not available, (2) Not all quarters and sections are square. There are enough irregular shapes that it would be very difficult to program the computer to do the conversion for all possible shapes.

	Column 51-52	abbreviation for the section corner, ex: Northeast-NE
	" 53-60	feet measurement (decimal in col. 58)
	" 61	abbreviation for the direction in which measurement was taken, ex: East-E
	" 62-69	feet measurement (decimal in col. 67)
	" 70	abbreviation for the direction in which measurement was taken, ex: South-S
71-78		Blank
79-80		Code for this record - L2

Record 5 (Location Card 3 - L3)

Column	Contents
1-78	Blank - reserved for metric location
79-80	Code for this record - L3

LETC: 10/14/82

Record 6 - Data Format
Oil Shale Assay

Each line of assay data from the Fischer assay results corresponds to one record. The records are stored sequentially on the computer in terms of feet or meters. Footages may overlap due to problems encountered while drilling. No footage corrections are to be made unless authorized by a geologist. Missing footages may occur. There are 2 possible causes: (1) the footage is missing--in this case no data record is stored, (2) the footage contains no oil shale--for example: Halite. In this case a record is to be created. This record will only contain the year, sample number, special codes, footages, a value of 0.0 in the section provided for "gallons per ton of oil", columns 54-58, and codes for geological notations.

Each assay record is entered according to the following format. If any assay data is blank on the assay sheet it is left blank here.

Column	Contents
1-2	Year of assay
3-8	SBR sample number of assay, hyphen is not included (left justified), (see special codes)
9-10	Special Codes: A - distinguishes 2 samples that have the same SBR sample number H - Halite, a code of 0.0 is entered under gal/ton of oil I - only data available is gal/ton of oil R - barren rock, a code of 0.0 is entered under gal/ton of oil S - indicates a sample for which the assay is not valid (see columns 67-73 of header 1). T - Tar Sands, a code of 0.0 is entered under gal/ton of oil X - a special run sample Y - exact footage of sample was unreadable, a guess was made. Z - no sample number supplied. The top of the sample footage, without the decimal part, was used as a sample number. For example a footage of 213.6 would become 213 as a sample number.
11-17	Beginning depth of the sample (decimal in col. 16)

18-19 (see col. 28-29)	Indicator for the beginning footage of zones of stratigraphic correlation. Colorado: MZ - Mahogany zone AG - A groove I1 - Unit 1 I2 - Unit 2 I3 - Unit 3 I4 - Unit 4 I5 - Unit 5
20	Blank
21-27	Ending depth of the sample (decimal in col. 26)
28-29 (see col. 18-19)	Indicator for the ending footage of zones of stratigraphic correlation. Colorado; MZ - Mahogany zone AG - A groove I1 - Unit 1 I2 - Unit 2 I3 - Unit 3 I4 - Unit 4 I5 - Unit 5
30-33	Percent by weight of oil (decimal in col. 32)
34-35	Blank
36-39	Percent by weight of water (decimal in col. 38)
40-41	Blank
42-45	Percent by weight of spent shale (decimal in col. 44)
46-47	Blank
48-51	Percent by weight of gas + loss (decimal in col. 50
52-53	Blank
54-58	Gallons per ton of oil (decimal in col. 57) Interpretation of special codes: assay - blank b - 1.0 c - 3.0 d - blank Halite - 0.0 missing - blank trace - 0.0
59	Blank

60-64	Gallons per ton of water (decimal in col. 63)
65-66	Blank
67-71	Specific gravity (decimal in col. 68)
72	Code E - only if a footnote, 'a' occurs on the assay sheet under gallons per ton of oil, indicating specific gravity was estimated as 0.92
73	Blank
74	Tendency to coke Codes: V - very heavy H - heavy S - some M - moderate N - none blank - blank
75-78	Codes for particular geological deposits (left justified): A - abelsonite C - coal H - halite O - Oil Impregnated T - tar sands or tar impregnated rock
79-80	Reserved by the data base for indicating the type of data record. In this case it is left blank.

Table 4.I

Tract: U-a/U-b
Monitoring Activity: Air Quality and Meteorology

OSO File Name	Initial Date	Final date	Page No.	Data Description
general aqmet			I-1-5	
uamt75	1/75	12/75	I-6	air quality and meteorology
uamt76	1/76	12/76	I-9	air quality and meteorology
uamt77	1/77	12/77	I-11	air quality and meteorology
uamt78	1/78	12/78	I-13	air quality and meteorology
uamt79	1/79	12/79	I-14	air quality and meteorology
uamt80	1/80	12/80	I-15	air quality and meteorology
uamt81	1/81	12/81	I-16	air quality and meteorology
utsp81	1981		I-17	total suspended solids
j34A_1	1/82	12/82	I-16	air quality and meteorology
j34A_2	1/82	12/82	I-17	total suspended solids
j34A_3	1/82	12/82	I-18	sound level
j42_1	1/83	12/83	I-16	air quality and meteorology
j42_2	1/83	12/83	I-17	total suspended solids
j42_3	1/83	12/83	I-18	sound level
j34A_4				documentation file
j34A_5				documentation file

Table 4.II

Tract: U-a/U-b
Monitoring Activity: Terrestrial

OSO File Name	Initial Date	Final Date	Page No.	Data Description
general information			II-1-5	where,when,how
j12_25			II-6	wildlife flushing reference
j12_26			II-7	rodent weight reference
j12_27			II-8	insect taxon reference
j12_28			II-9	soil invertebrate reference
j12_1	1975		II-10	flush data
j12_2	1976		II-10	flush data
j12_3	1977		II-10	flush data
j12_4	1978		II-10	flush data
j12_5	1979		II-10	flush data
j12_6	1980		II-10	flush data
j12_7	1981		II-10	flush data
j12_8			II-11	deer data
j12_9	1975		II-12	rodent data
j12_10	1976		II-12	rodent data
j12_11	1977		II-12	rodent data
j12_12	1978		II-12	rodent data
j12_13	1979		II-12	rodent data
j12_14	1980		II-12	rodent data
j12_15	1981		II-12	rodent data
j12_16	1981		II-13	shrub insect data
j12_17	1981		II-14	shrub insect data functional grouped weight
j12_18	1975	1976	II-15	shrub insect baseline
j12_19	1981		II-16	soil invertebrate antropods
j12_20	1981		II-16	soil invertebrate nematodes
j12_21	1980		II-17	plants
j12_22	1981		II-17	plants
j12_23	1980		II-18	foliage
j12_24	1981		II-18	foliage
j32_1	1982		II-19	river transect data
j32_7	1982		II-9	soil invertebrate reference
j32_2	1982		II-10	flush data
j32_3	1982		II-14	shrub insect data (sweep)
j32_4	1982		II-13	shrub insect data

j32_5	1982	II-14	shrub insect data beat
j32_6	1982	II-13	shrub insect data
j32_8	1981	II-16	soil invertebrate antropods
j32_9	1981	II-16	soil invertebrate nematodes
j32_10	1982	II-16	soil invertebrate nematodes
j32_11	1982	II-16	soil invertebrate nematodes
j32_12	1982	II-17	plants
j32_13	1982	II-12	rodent data
j40_1	1983	II-10	flush
j40_2	1983	II-12	rodent
j40_3	1983	II-16	soil invertebrate
j40_4	1983	II-16	soil invertebrate
j40_5	1983	II-13	insect beating
j40_6	1983	II-14	insect beating
j40_7		II-8	insect tax
j40_8	1983	II-26	insect-plant
j40_9	1983	II-26	insect-soil
j40_10	1983	II-20	deer
j40_11	1983	II-20	
j40_12	1983	II-19	river
j40_13	1983	II-19	river
j40_14		II-21	raptor nests
j40_15	1983	II-22	plants annbio
j40_16	1983	II-23	plants fall cover
j40_17	1983	II-25	plants seed prod
j40_18	1983	II-25	plants seed soil
j40_19	1983	II-24	plants wood slg
j40_20	1983	II-27	U-a/U-b documentation
j54_4	1984	II-26	leaf water potential
j54_5	1984	II-26	soil water potential
j54_1	1984	II-10	flush data
j54_2	1984	II-13	shrub insect
j54_3	1984	II-14	insect beating
j54_6	1984 complete	no format	bug list
j54_8	1984	no format	don't need field notes
j54_9	1984	II-19	river transect
j54_7	1984 replaces prev. data	II-21	rapture nest
j54_10	1984	II-12	rodent trapping

Table 4.III

Tract: U-a/U-b
Monitoring Activity: Aquatic

OSO File Name	Initial Date	Final Date	Page No.	Data Description
general information			III-1-4	
j14_1	8/27/81		III-5	benthic invertebrate
j14_2	5/23/81		III-6	benthic organic
j14_3	5/03/81		III-7	drift invertebrate
j14_4	6/28/81		III-8	drift organic
j14_5	4/13/81		III-9	chlorophyll
j14_6	4/13/81		III-10	physical
j14_7	5/01/81		III-11	respiration
j14_8	4/13/81		III-12	sediment organic
j14_9	4/13/81		III-13	sediment size
j14_10	6/28/81		III-14	Turbidty
j14_11	5/03/81		III-15	water chemistry
j30_1	1981		III-16	periphyton
j30_2	1982		III-5	benthic invertebrate
j30_3	1982		III-6	benthic organic
j30_4	1982		III-7	drift invertebrate
j30_5	1982		III-8	drift organic
j30_6	1982		III-9	chlorophyll
j30_7	1982		III-19	leafpack decomposition
j30_8	1982		III-16	periphyton
j30_9	1982		III-10	physical
j30_10	1982		III-11	respiration
j30_11	1982		III-12	sediment organic
j30_12	1982		III-13	sediment size
j30_13	1982		III-13	sediment size
j30_14	1982		III-14	Turbidty
j30_15	1982		III-15	water chemistry
j43_1	1983		III-5	benthic invertebrate
j43_2	1983		III-6	benthic organic
j43_3	1983		III-7	drift invertebrate
j43_4	1983		III-8	drift organic
j43_5	1983		III-16	chlorophyll
j43_6	1983		III-10	physical
j43_7	1983		III-12	sediment organic
j43_8	1983		III-13	sediment size
j43_9	1983		III-14	Turbidty
j43_10	1983		III-15	water chemistry
j31_1	1974-1976		III-17	benthic im
j31_2	1974-1976		III-18	algae

Table 4.IV

Tract: U-a/U-b
Monitoring Activity: Hydrology

OSO File Name	Initial Date	Final Date	Page No.	Data Description
general information			IV 1-4	daily values format description when, where, how
j13_1	74	81	IV-5	daily values surface water
j13_2	74	81	IV-5	daily values ground water
j13_3	74	81	IV-5	precipitation & evaporation
j13_4	74	81	IV-7	water quality - surface
j13_5	74	81	IV-5	water quality - ground
j41_5	74	81	IV-5	daily values surface water
j41_4	74	81	IV-5	daily values of hydrometeorology
j41_1	74	81	IV-6	surface & ground water quality
j41_2	74	81	IV-6	surface water quality not in jkc041_1
j41_3	74	81	IV-6	ground water quality not in jkco41_1
j41_6	74	81	IV-5	daily values of ground water
j41_7	74	82	IV-6	surface & ground water quality
j41_8		82	IV-5	daily values hydrometeorology surface & ground water
j41_9		83	IV-6	surface & ground water quality
j41_10		83	IV-5	daily values of hydrometeorology surface & ground water
general info			IV6a-6c	ground & surface water

Table 5

Tract: U-a/U-b
Monitoring Activity: Special Studies

OSO File Name	Initial Date	Page No.	Data Description
j34_1	1977	V - 1	spring annual biomass & covers
j34_2	1982	V - 2	browse utilization
j34_3	1974	V - 3	vegetation survey
j34_4	1975	V - 3	vegetation survey
j34_5	1975	V - 3	vegetation survey
j34_6	1976	V - 3	vegetation survey
j34_7	1981	V - 4	cryptogamic community
j34_8	1982	V - 5	lichen growth
j34_9	1977	V - 6	stem leader growth
j34_10	1981	V - 7	shrub litter production
j34_11	1982	V - 7	shrub litter production
j34_12	1975	V - 8	perennials & late annuals
j34_13	1976	V - 18	perennials & late annuals
j34_14	1981	V - 9	soil microbiology
j34_15	1982	V - 9	soil microbiology
j34_16	1975/1976	V - 10	baseline soil microbiology
j34_17	1981	V - 11	soil analysis
j34_18		V - 12	baseline soil analysis
j34_19	1975/1976	V - 13	mean ± sd. for sagebrush leader growth
j34_20		V - 13	heavy metal analysis for sagebrush leader
j34_21		V - 15	vascular plant taxon codes
j34_22		V - 16	location codes & utm coordinates
j44_9	1983	V - 9	soil microbiology
j44_1	1983	V - 1	annual leader growth biomass
j44_2	1983	V - 6	sagebrush leader growth
j44_3	1983	V - 6	other shrub leader growth
j44_4	1981 -1983	V - 17	chemical composition of sagebrush leader new (1981 - 1983)
j44_5	1983	V - 7	litter fall
j44_6	1983	V - 2	browse utilization by herbivore
j44_7	1983	V - 19	caged measurements for browse utilization
j44_8	1983	V - 5	lichen monitoring

AU TAPE # 1103

This file contains documentation which summarized the contents and formats contained within this tape.
The documents consist of 4 parts:

I) SAROAD tape record layout.
II) TSP data file description.
III) .1 Parameter ID codes.
.2 Unit ID codes.
.3 Site location informations.
IV) Complete summary of tape contents (excluding TSP)

Part I -- SAROAD tape format layout

For more information on SAROAD formating see SAROAD (Storage And Retrival Of Aerometric Data) users manual.
Published by: U. S. Environmental Protection Agency

SAROAD MAGNETIC TAPE RECORD FORMAT '1'

DESCRIPTION	RECORD COLUMN
Format Identifier	1
State Code	2-3
Area Code	4-7
Site Code	8-10
Agency Type	11
Project Classification	12-13
Sampling Time Interval	14
Year	15-16
Month	17-18
Day	19-20
Sampling Start Hour	21-22
Parameter Identification	23-27
Method Identification	28-29
Unit Code	30-31
Decimal Locator	32
Twelve Observations	33-80

Each day consists of 2 records

VARIABLE/FIXED PARAMETERS ON EACH RECORD ARE LISTED BELOW

Card Format Identification = 1
State Code = 46 (UTAH)
Area Code = 0 (Not Used)
Site Code = Reference PART III (SAROAD code not used)
Agency Type = J (Private Agency)
Project classification = 0 (Not Used)
Sampling Time Interval = 1 (Hourly Observations)

12 -- PM observations
Parameter Identification = Reference Part III
SAROAD code not used.
Method Identification = 0 (Not Used)
Unit Code = Reference Part III AV's own codes.
SAROAD's code not used
Decimal Locator :
Actual value = Indicated / 10 ** Decimal locator
Twelve Observations = Beginning with at sampling start hour.

NOTE: Each record contains 80 characters in length
and there are 100 records/block.

PART II -- Total Suspended Particulate Data

All Total Suspended Particulate data are contained within file # 8 of this tape.
NOTE : Comment records begin with an * in column 2.

Record layout: MAXIMUM 150 CHARACTERS/RECORD (VARIABLE LENGTH RECORDS)

MONTH-DAY-YR	STATION N1	STATION N2	STATION N3	.....
MM-DD-YY	XXX.X	XXX.X	XXX.X	

999 = Indicates ' NO DATA '

PART III .1 Parameter ID codes.
.2 Unit ID codes.
.3 Site location informations.

PART III.1:
Parameter ID reference list.

PARAMETER ID.	PARAMETER NAME	PARAMETER ABBREV.
1	WIND SPEED [CC:01]	WS1
2	WIND DIRECTION [CC:02]	WD1
3	TEMPERATURE [CC:03]	TEM1
4	TOTAL HYDROCARBONS [CC:04]	THC
5	HYDROCARBONS (CORRECTED FOR CH4) [CC:05]	HC
6	METHANE [CC:06]	CH4
7	CARBON MONOXIDE [CC:07]	CO
8	NITRIC OXIDE [CC:08]	NO
9	NITROGEN DIOXIDE [CC:09]	NO2
10	OXIDES OF NITROGEN [CC:10]	NOX
11	OZONE [CC:11]	O3
12	TOTAL SULFUR [CC:12]	TS
13	HYDROGEN SULFIDE [CC:13]	H2S
14	SULFUR DIOXIDE [CC:14]	SO2
15	WIND SPEED [CC:15]	WS2
16	WIND DIRECTION [CC:16]	WD2
17	WIND SPEED [CC:17]	WS3
18	WIND DIRECTION [CC:18]	WD3
19	DELTA T [CC:19]	DT1
20	SIGMA THETA [CC:20]	STH1
21	SIGMA W [CC:21]	SIGW
22	COEFFICIENT OF HAZE [CC:22]	CO H
23	DEWPOINT [CC:23]	DPT
24	SCATTERING COEFFICIENT [CC:24]	BS
25	CLOUD COVER [CC:25]	CLUCOV
26	BAROMETRIC PRESSURE [CC:26]	BARP
27	NET SOLAR RADIATION (SKY-GROUND) [CC:27]	NSOL
28	RADIATION(ION PRESSURE CHAMBER) [CC:28]	RAD
30	RELATIVE HUMIDITY [CC:30]	RH1

PART III.2: Measurement units reference list.

UNIT NUMBER	UNIT NAME
1	KILOMETERS/HOUR
2	METERS/SECOND
3	MILES/HOUR
4	KNOTS
5	PARTS PER MILLION
6	PARTS PER HUNDRED MILLION
7	PART PER BILLION
8	MICROGRAMS/CUBIC METER
9	GRAMS
10	OUNCES
11	DEGREES FARENHEIT
12	DEGREES CELSIUS
13	DEGREES KELVIN
14	INCHES
15	CENTIMETER
16	MILLIBARS
17	IN OF HG
18	MN OF HG
19	FEET
20	KILOMETERS
21	MILES
22	DEGREES
23	10^-4/M
24	COH/1000FT
25	LANGLEY
26	MICROR/HR
27	PERCENT
28	STANDARD CUBIC FEET/MIN
29	DBA (SOUND LEVEL)
30	MILIGRANS PER CUBIC METER
31	HUNDREDTHS OF DEGREES F.
32	HUNDREDTHS OF INCHES
33	METERS
34	(CAL/CM**2/MIN)*100
35	VOLT AC
36	0=STABLE, 1=UNSTABLE
37	LANGLEYS/MINUTE
38	(IN OF HG)*100

PART III.3: Locations of AeroVironment's Ua-Ub monitoring stations

SITE ID	ELEVATION ft/m	LOCATION LATITUDE(DEG. N)	LONGTITUDE (DEG. W)
A1	4820/1469	39°56'03" N	109°17'16" W
A2	5360/1634	39°55'26" N	109°13'56" W
A3	5300/1615	39°58'27" N	109°13'00" W
A4	5720/1743	39°54'16" N	109°11'18" W
A5	4850/1478	39°58'25" N	109°10'47" W
A6	5250/1600	39°57'10" N	109°09'54" W
A7	5411/1649	39°58'16" N	109°08'32" W
A8	5852/1784	39°55'43" N	109°07'33" W
A9	5560/1695	39°55'11" N	109°14'20" W
A10	4830/1472	39°56'55" N	109°13'40" W
A11	5600/1707	39°55'41" N	109°11'05" W
A12	5310/1618	39°53'50" N	109°09'33" W
A13	5300/1615	39°56'11" N	109°10'38" W

Part IV 1. Parameter ID codes
         2. Unit ID codes
         3. Site location information

Part IV 1. Parameter ID reference list

PARAMETER ID	PARAMETER NAME	PARAMET ABBREV
1	WIND SPEED [CC:01]	WS1
2	WIND DIRECTION [CC:02]	WD1
3	TEMPERATURE [CC:03]	TEM1
4	TOTAL HYDROCARBONS [CC:04]	THC
5	HYDROCARBONS (CORRECTED FOR CH4) [CC:05]	HC
6	METHANE [CC:06]	CH4
7	CARBON MONIXIDE [CC:07]	CO
8	NITRIC OXIDE [CC:08]	NO
9	NITROGEN DIOXIDE [CC:09]	NO2
10	OXIDES OF NITROGEN [CC:10]	NOX
11	OZONE [CC:11]	O3
12	TOTAL SULFUR [CC:12]	TS
13	HYDROGEN SULFIDE [CC:13]	H2S
14	SULFUR DIOXIDE [CC:14]	SO2
15	WIND SPEED [CC:15]	WS2
16	WIND DIRECTION [CC:16]	WD2
17	WIND SPEED [CC:17]	WS3
18	WIND DIRECTION [CC:18]	WD3
19	DELTA T [CC:19]	DT1
20	SIGMA THETA [CC:20]	STH1
21	SIGMA W [CC:21]	SIGW
22	COEFFICIENT OF HAZE [CC:22]	CO H
23	DEWPOINT [CC:23]	DPT
24	SCATTERING COEFFICIENT [CC:24]	BS
25	CLOUD COVER [CC:25]	CLUCOV
26	BARONETRIC PRESSURE [CC:26]	BARP
27	NET SOLAR RADIATION (SKY-GROUND) [CC:27]	NSOL
28	RADIATION (ION PRESSURE CHAMBER) [CC:28]	RAD
30	RELATIVE HUMIDITY [CC:30]	RH1

Part IV 2. Measurement units reference list

UNIT #	UNIT NAME
1	KILOMETERS/HOUR
2	METERS/SECOND
3	MILES/HOUR
4	KNOTS
5	PARTS PER MILLION
6	PARTS PER HUNDRED MILLION
7	PARTS PER BILLION
8	MICROGRAMS/CUBIC METER
9	GRAMS
10	OUNCES
11	DEGREES FARENHEIT
12	DEGREES CELCIUS
13	DEGREES KELVIN
14	INCHES
15	CENTIMETER
16	MILLIBARS
17	INCHES OF HG
18	MILLIMETERS OF HG
19	FEET
20	KILOMETERS
21	MILES
22	DEGREES
23	10^-4/M
24	COH/1000 FT
25	LANGLEY
26	MICROR/HOUR
27	PERCENT
28	STANDARD CUBIC FEET/MINUTE
29	DBA (SOUND LEVEL)
30	MILLIGRAMS/CUBIC METER
31	HUNDRETHS OF DEGREES FAREHHEIT
32	HUNDRETHS OF INCHES
33	METERS
34	(CAL/CM**2/MIH)*100
35	VOLTS AC
36	0=STABLE, 1=UNSTABLE
37	LANGLEYS/MINUTE
38	(IN OF HG)*100

Part IV 3. Locations of AeroVironments's Ua-Ub monitoring stations

SITE ID	ELEVATION ft/m	LOCATION LATITUDE (DEG. N)	LONGITUDE (DEG. W)
A2	5360/1634	39`55'26" N	109`13'56" W
A4	5720/1743	39`54'16" N	109`11'18" W
A6	5250/1600	39`57'10" N	109`09'54" W
A10	4830/1472	39`56'55" N	109`13'40" W
A11	5600/1707	39`55'41" N	109`11'05" W
A13	5300/1615	39`56'11" N	109`10'38" W

Part V Tape Contents Summary

File #1 -- Jan. 82 - Dec. 82
File #2 -- Total Suspended Particulates (ALL)
File #3 -- Sound Level Survey
File #4 -- Documentation File

PART IV Tape Contents Summary

File #1 -- Nov. 74 - Dec. 75
File #2 -- Jan. 76 - Dec. 76
File #3 -- Jan. 77 - Dec. 77
File #4 -- Jan. 78 - Dec. 78
File #5 -- Jan. 79 - Dec. 79
File #6 -- Jan. 80 - Dec. 80
File #7 -- Jan. 81 - Dec. 81
File #8 -- Total Suspended Particulates (ALL)
File #9 -- Documentation file.

SAROAD TAPE GENERATION RUN ON: 6:37 PM FRI., 20 AUG., 1982

TAPE NUMBER: 1103
FILE NUMBER: 1
RECORDING DENSITY: 1600 ASCII
NO OF TRACKS: 9
LOGICAL RECORD LENGTH: 80 CHARACTERS
BLOCKING FACTOR: 100 RECORDS PER BLOCK
PARITY: ODD
SORTING SEQUENCE: TIME IS IN ASCENDING ORDER WITHIN EACH SITE AND COMP

uaqmet_75

FILE CONTENT:

CARD FORMAT ID	SAMPLE HOUR INTERVAL	SITE CODE	PARAMETER ID		AQDMS SITE	AQDMS COMP	BEG TIME	END TIME
1	1	1	1	WS1	1	1	01/DEC/74 00:00:00	31/DEC/75 23:00:00
1	1	1	2	WD1	1	2	01/DEC/74 00:00:00	31/DEC/75 23:00:00
1	1	1	12	TS	1	12	01/APR/75 00:00:00	31/DEC/75 23:00:00
1	1	1	13	H2S	1	13	01/APR/75 00:00:00	31/DEC/75 23:00:00
1	1	1	14	SO2	1	14	01/APR/75 00:00:00	31/DEC/75 23:00:00
1	1	2	1	WS1	2	1	01/JAN/75 00:00:00	31/DEC/75 23:00:00
1	1	2	2	WD1	2	2	01/JAN/75 00:00:00	31/DEC/75 23:00:00
1	1	2	3	TEM1	2	3	01/JAN/75 00:00:00	31/DEC/75 23:00:00
1	1	2	4	THC	2	4	01/DEC/74 00:00:00	31/DEC/75 23:00:00
1	1	2	5	NC	2	5	01/DEC/74 00:00:00	31/DEC/75 23:00:00
1	1	2	6	CH4	2	6	01/DEC/74 00:00:00	31/DEC/75 23:00:00
1	1	2	7	CO	2	7	01/DEC/74 00:00:00	31/DEC/75 23:00:00
1	1	2	8	NO	2	8	01/DEC/74 00:00:00	31/DEC/75 23:00:00
1	1	2	9	NO2	2	9	01/DEC/74 00:00:00	31/DEC/75 23:00:00
1	1	2	10	NOX	2	10	01/DEC/74 00:00:00	31/DEC/75 23:00:00
1	1	2	11	O3	2	11	01/DEC/74 00:00:00	31/DEC/75 23:00:00
1	1	2	12	TS	2	12	01/DEC/74 00:00:00	31/DEC/75 23:00:00
1	1	2	13	H2S	2	13	01/DEC/74 00:00:00	31/DEC/75 23:00:00
1	1	2	14	SO2	2	14	01/DEC/74 00:00:00	31/DEC/75 23:00:00
1	1	2	15	WS2	2	15	01/JAN/75 00:00:00	31/DEC/75 23:00:00
1	1	2	16	WD2	2	16	01/JAN/75 00:00:00	31/DEC/75 23:00:00
1	1	2	17	WS3	2	17	01/JAN/75 00:00:00	31/DEC/75 23:00:00
1	1	2	18	WD3	2	18	01/JAN/75 00:00:00	31/DEC/75 23:00:00
1	1	2	19	DT1	2	19	01/JAN/75 00:00:00	31/DEC/75 23:00:00

		2	21	SIGW	2	21	01/APR/75	00:00:00	31/DEC/75	23:00:00
		2	22	CO H	2	22	01/FEB/75	00:00:00	31/DEC/75	23:00:00
		2	23	DPT	2	23	01/SEP/75	00:00:00	31/DEC/75	23:00:00
		2	24	BS	2	24	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		2	25	TSANP	2	25	01/FEB/75	00:00:00	31/DEC/75	23:00:00
		2	28	RAD	2	28	01/FEB/75	00:00:00	28/FEB/75	23:00:00
		2	28	RAD	2	28	01/JUN/75	00:00:00	31/JUL/75	23:00:00
		2	28	RAD	2	28	01/DEC/75	00:00:00	31/DEC/75	23:00:00
		2	30	RH1	2	30	01/SEP/75	00:00:00	31/DEC/75	23:00:00
		3	1	WS1	3	1	01/NOV/74	00:00:00	31/DEC/75	23:00:00
		3	2	WD1	3	2	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		3	4	THC	3	4	01/NOV/74	00:00:00	31/DEC/75	23:00:00
		3	5	NC	3	5	01/NOV/74	00:00:00	31/DEC/75	23:00:00
		3	6	CH4	3	6	01/NOV/74	00:00:00	31/DEC/75	23:00:00
		3	7	CO	3	7	01/NOV/74	00:00:00	31/DEC/75	23:00:00
		3	8	NO	3	8	01/JAN/75	00:00:00	31/DEC/75	23:00:00
		3	9	NO2	3	9	01/JAN/75	00:00:00	31/DEC/75	23:00:00
		3	10	NOX	3	10	01/JAN/75	00:00:00	31/DEC/75	23:00:00
		3	11	O3	3	11	01/NOV/74	00:00:00	31/DEC/75	23:00:00
		3	12	TS	3	12	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		3	13	H2S	3	13	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		3	14	SO2	3	14	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		3	28	RAD	3	28	01/SEP/75	00:00:00	30/SEP/75	23:00:00
		3	28	RAD	3	28	01/DEC/75	00:00:00	31/DEC/75	23:00:00
		4	1	WS1	4	1	01/NOV/74	00:00:00	31/DEC/75	23:00:00
		4	2	WD1	4	2	01/NOV/74	00:00:00	31/DEC/75	23:00:00
		4	3	TEM1	4	3	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		4	12	TS	4	12	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		4	13	H2S	4	13	01/FEB/75	00:00:00	31/DEC/75	23:00:00
		4	14	SO2	4	14	01/FEB/75	00:00:00	31/DEC/75	23:00:00
		4	20	STH1	4	20	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		4	21	SIGW	4	21	01/JUL/75	00:00:00	31/DEC/75	23:00:00
		4	28	RAD	4	28	01/FEB/75	00:00:00	31/MAR/75	23:00:00
		4	28	RAD	4	28	01/JUL/75	00:00:00	31/JUL/75	23:00:00
		4	28	RAD	4	28	01/DEC/75	00:00:00	31/DEC/75	23:00:00
		5	1	WS1	5	1	01/NOV/74	00:00:00	31/DEC/75	23:00:00
		5	2	WD1	5	2	01/NOV/74	00:00:00	31/DEC/75	23:00:00
		5	12	TS	5	12	01/NOV/74	00:00:00	31/DEC/75	23:00:00
		5	13	H2S	5	13	01/NOV/74	00:00:00	31/DEC/75	23:00:00
		5	14	SO2	5	14	01/NOV/74	00:00:00	31/DEC/75	23:00:00
		5	28	RAD	5	28	01/APR/75	00:00:00	30/APR/75	23:00:00
		5	28	RAD	5	28	01/AUG/75	00:00:00	31/AUG/75	23:00:00
		6	1	WS1	6	1	01/JAN/75	00:00:00	31/DEC/75	23:00:00
		6	2	WD1	6	2	01/JAN/75	00:00:00	31/DEC/75	23:00:00
		6	3	TEM1	6	3	01/JAN/75	00:00:00	31/DEC/75	23:00:00
		6	4	THC	6	4	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		6	5	NC	6	5	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		6	6	CH4	6	6	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		6	7	CO	6	7	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		6	8	NO	6	8	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		6	9	NO2	6	9	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		6	10	NOX	6	10	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		6	11	O3	6	11	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		6	12	TS	6	12	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		6	13	H2S	6	13	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		6	14	SO2	6	14	01/DEC/74	00:00:00	31/DEC/75	23:00:00
		6	15	WS2	6	15	01/JAN/75	00:00:00	31/DEC/75	23:00:00
		6	16	WD2	6	16	01/JAN/75	00:00:00	31/DEC/75	23:00:00
		6	17	WS3	6	17	01/JAN/75	00:00:00	31/DEC/75	23:00:00
		6	18	WD3	6	18	01/JAN/75	00:00:00	31/DEC/75	23:00:00

		6	19	DTI	6	19	01/JAN/75	00:00:00	31/DEC/75 23:00:00
		6	20	STHI	6	20	01/APR/75	00:00:00	31/DEC/75 23:00:00
		6	21	SIGW	6	21	01/JAN/75	00:00:00	31/DEC/75 23:00:00
		6	26	BARP	6	26	01/DEC/74	00:00:00	31/DEC/75 23:00:00
		6	27	NSOL	6	27	01/MAR/75	00:00:00	31/DEC/75 23:00:00
		6	28	RAD	6	28	01/MAR/75	00:00:00	31/MAR/75 23:00:00
		6	28	RAD	6	28	01/JUL/75	00:00:00	31/AUG/75 23:00:00
		7	1	WSI	7	1	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		7	2	WDI	7	2	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		7	12	TS	7	12	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		7	13	H2S	7	13	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		7	14	SO2	7	14	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		7	28	RAD	7	28	01/MAY/75	00:00:00	30/JUN/75 23:00:00
		7	28	RAD	7	28	01/AUG/75	00:00:00	31/AUG/75 23:00:00
		8	1	WSI	8	1	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		8	2	WDI	8	2	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		8	12	TS	8	12	01/JAN/75	00:00:00	31/DEC/75 23:00:00
		8	13	H2S	8	13	01/JAN/75	00:00:00	31/DEC/75 23:00:00
		8	14	SO2	8	14	01/JAN/75	00:00:00	31/DEC/75 23:00:00
		8	28	RAD	8	28	01/APR/75	00:00:00	30/APR/75 23:00:00
		8	28	RAD	8	28	01/JUN/75	00:00:00	30/JUN/75 23:00:00
		8	28	RAD	8	28	01/AUG/75	00:00:00	31/AUG/75 23:00:00
		9	1	WSI	9	1	01/DEC/74	00:00:00	31/DEC/75 23:00:00
		9	2	WDI	9	2	01/DEC/74	00:00:00	31/DEC/75 23:00:00
		9	3	TEMI	9	3	01/DEC/74	00:00:00	31/DEC/75 23:00:00
		9	28	RAD	9	28	01/FEB/75	00:00:00	28/FEB/75 23:00:00
		9	28	RAD	9	28	01/JUN/75	00:00:00	30/JUN/75 23:00:00
		9	28	RAD	9	28	01/SEP/75	00:00:00	30/SEP/75 23:00:00
		9	28	RAD	9	28	01/DEC/75	00:00:00	31/DEC/75 23:00:00
		10	1	WSI	10	1	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		10	2	WDI	10	2	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		10	3	TEMI	10	3	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		10	28	RAD	10	28	01/AUG/75	00:00:00	30/SEP/75 23:00:00
		11	1	WSI	11	1	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		11	2	WDI	11	2	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		11	3	TEMI	11	3	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		11	28	RAD	11	28	01/MAR/75	00:00:00	31/MAR/75 23:00:00
		11	28	RAD	11	28	01/JUL/75	00:00:00	31/JUL/75 23:00:00
		12	1	WSI	12	1	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		12	2	WDI	12	2	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		12	3	TEMI	12	3	01/NOV/74	00:00:00	31/DEC/75 23:00:00
		12	28	RAD	12	28	01/MAY/75	00:00:00	31/MAY/75 23:00:00
		12	28	RAD	12	28	01/AUG/75	00:00:00	31/AUG/75 23:00:00

SAROAD TAPE GENERATION RUN ON:10:36 PM FRI., 20 AUG., 1982

TAPE NUMBER: 1103
FILE NUMBER: 2
RECORDING DENSITY: 1600 ASCII uaqmet_76
NO OF TRACKS: 9
LOGICAL RECORD LENGTH: 80 CHARACTERS
BLOCKING FACTOR: 100 RECORDS PER BLOCK
PARITY: ODD
SORTING SEQUENCE: TIME IS IN ASCENDING ORDER WITHIN EACH SITE AND COMP

FILE CONTENT:

CARD FORMAT ID	SAMPLE HOUR INTERVAL	SITE CODE	PARAMETER ID		AQDMS SITE	AQDMS COMP	BEG TIME	END TIME
1	1	1	1	WS1	1	1	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	1	2	WD1	1	2	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	1	12	TS	1	12	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	1	13	H2S	1	13	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	1	14	SO2	1	14	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	2	1	WS1	2	1	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	2	2	WD1	2	2	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	2	3	TEM1	2	3	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	2	4	THC	2	4	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	2	5	NC	2	5	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	2	6	CH4	2	6	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	2	7	CO	2	7	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	2	8	NO	2	8	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	2	9	NO2	2	9	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	2	10	NOX	2	10	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	2	11	OJ	2	11	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	2	12	TS	2	12	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	2	13	H2S	2	13	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	2	14	SO2	2	14	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	2	15	WS2	2	15	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	2	16	WD2	2	16	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	2	17	WS3	2	17	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	2	18	WD3	2	18	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	2	19	DT1	2	19	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	2	20	STH1	2	20	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	2	21	SIGW	2	21	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	2	22	CO H	2	22	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	2	23	DPT	2	23	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	2	24	BS	2	24	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	2	25	TSAMP	2	25	01/JAN/76 00:00:00	31/JAN/76 23:00:00
1	1	2	30	RH1	2	30	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	3	1	WS1	3	1	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	3	2	WD1	3	2	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	3	4	THC	3	4	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	3	5	NC	3	5	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	3	6	CH4	3	6	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	3	7	CO	3	7	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	3	8	NO	3	8	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	3	9	NO2	3	9	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	3	10	NOX	3	10	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	3	11	OJ	3	11	01/JAN/76 00:00:00	30/APR/76 23:00:00
1	1	3	12	TS	3	12	01/JAN/76 00:00:00	31/DEC/76 23:00:00
1	1	3	13	H2S	3	13	01/JAN/76 00:00:00	31/DEC/76 23:00:00

3	14		3	14	01/JAN/76	00:00:00	31/DEC/76	23:00:00
4	1	WS1	4	1	01/JAN/76	00:00:00	31/DEC/76	23:00:00
4	2	WD1	4	2	01/JAN/76	00:00:00	31/DEC/76	23:00:00
4	3	TEM1	4	3	01/JAN/76	00:00:00	31/DEC/76	23:00:00
4	12	TS	4	12	01/JAN/76	00:00:00	31/DEC/76	23:00:00
4	13	H2S	4	13	01/JAN/76	00:00:00	31/DEC/76	23:00:00
4	14	SO2	4	14	01/JAN/76	00:00:00	31/DEC/76	23:00:00
4	20	STH1	4	20	01/JAN/76	00:00:00	31/DEC/76	23:00:00
4	21	SIGW	4	21	01/JAN/76	00:00:00	31/DEC/76	23:00:00
4	28	RAD	4	28	01/JAN/76	00:00:00	31/JAN/76	23:00:00
5	1	WS1	5	1	01/JAN/76	00:00:00	30/APR/76	23:00:00
5	2	WD1	5	2	01/JAN/76	00:00:00	30/APR/76	23:00:00
5	12	TS	5	12	01/JAN/76	00:00:00	30/APR/76	23:00:00
5	13	H2S	5	13	01/JAN/76	00:00:00	30/APR/76	23:00:00
5	14	SO2	5	14	01/JAN/76	00:00:00	30/APR/76	23:00:00
6	1	WS1	6	1	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	2	WD1	6	2	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	3	TEM1	6	3	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	4	THC	6	4	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	5	HC	6	5	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	6	CH4	6	6	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	7	CO	6	7	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	8	NO	6	8	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	9	NO2	6	9	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	10	NOX	6	10	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	11	O3	6	11	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	12	TS	6	12	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	13	H2S	6	13	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	14	SO2	6	14	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	15	WS2	6	15	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	16	WD2	6	16	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	17	WS3	6	17	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	18	WD3	6	18	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	19	DT1	6	19	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	20	STH1	6	20	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	21	SIGW	6	21	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	26	BARP	6	26	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	27	NSOL	6	27	01/JAN/76	00:00:00	31/DEC/76	23:00:00
6	28	RAD	6	28	01/JAN/76	00:00:00	31/JAN/76	23:00:00
6	30	RH1	6	30	01/JAN/76	00:00:00	31/DEC/76	23:00:00
7	1	WS1	7	1	01/JAN/76	00:00:00	31/DEC/76	23:00:00
7	2	WD1	7	2	01/JAN/76	00:00:00	31/DEC/76	23:00:00
7	12	TS	7	12	01/JAN/76	00:00:00	31/DEC/76	23:00:00
7	13	H2S	7	13	01/JAN/76	00:00:00	31/DEC/76	23:00:00
7	14	SO2	7	14	01/JAN/76	00:00:00	31/DEC/76	23:00:00
7	28	RAD	7	28	01/JAN/76	00:00:00	31/JAN/76	23:00:00
8	1	WS1	8	1	01/JAN/76	00:00:00	30/APR/76	23:00:00
8	2	WD1	8	2	01/JAN/76	00:00:00	30/APR/76	23:00:00
8	12	TS	8	12	01/JAN/76	00:00:00	30/APR/76	23:00:00
8	13	H2S	8	13	01/JAN/76	00:00:00	30/APR/76	23:00:00
8	14	SO2	8	14	01/JAN/76	00:00:00	30/APR/76	23:00:00
8	28	RAD	8	28	01/JAN/76	00:00:00	31/JAN/76	23:00:00
9	1	WS1	9	1	01/JAN/76	00:00:00	30/APR/76	23:00:00
9	2	WD1	9	2	01/JAN/76	00:00:00	30/APR/76	23:00:00
9	3	TEM1	9	3	01/JAN/76	00:00:00	30/APR/76	23:00:00
10	1	WS1	10	1	01/JAN/76	00:00:00	31/DEC/76	23:00:00
10	2	WD1	10	2	01/JAN/76	00:00:00	31/DEC/76	23:00:00
10	3	TEM1	10	3	01/JAN/76	00:00:00	31/DEC/76	23:00:00
11	1	WS1	11	1	01/JAN/76	00:00:00	31/DEC/76	23:00:00
11	2	WD1	11	2	01/JAN/76	00:00:00	31/DEC/76	23:00:00

SAROAD TAPE GENERATION RUN ON: 2:31 AM SAT., 21 AUG., 1982

TAPE NUMBER: 1103
FILE NUMBER: 3
RECORDING DENSITY: 1600 ASCII
NO OF TRACKS: 9
LOGICAL RECORD LENGTH: 80 CHARACTERS
BLOCKING FACTOR: 100 RECORDS PER BLOCK
PARITY: ODD
SORTING SEQUENCE: TIME IS IN ASCENDING ORDER WITHIN EACH SITE AND COMP

uaqmet_77

FILE CONTENT:

CARD FORMAT ID	SAMPLE HOUR INTERVAL	SITE CODE	PARAMETER ID		AQDMS SITE	AQDMS COMP	BEG TIME	END TIME
1	1	2	1	WS1	2	1	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	2	2	WD1	2	2	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	2	3	TEM1	2	3	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	2	15	WS2	2	15	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	2	16	WD2	2	16	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	2	17	WS3	2	17	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	2	18	WD3	2	18	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	2	19	DT1	2	19	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	2	20	STH1	2	20	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	2	21	SIGW	2	21	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	2	23	DPT	2	23	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	2	24	BS	2	24	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	2	30	RH1	2	30	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	3	1	WS1	3	1	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	3	2	WD1	3	2	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	3	12	TS	3	12	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	3	13	H2S	3	13	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	3	14	SO2	3	14	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	4	1	WS1	4	1	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	4	2	WD1	4	2	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	4	3	TEM1	4	3	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	4	12	TS	4	12	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	4	13	H2S	4	13	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	4	14	SO2	4	14	01/JAN/77 00:00:00	31/JAN/77 23:00:00
1	1	4	20	STH1	4	20	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	4	21	SIGW	4	21	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	1	WS1	6	1	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	2	WD1	6	2	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	3	TEM1	6	3	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	4	THC	6	4	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	5	NC	6	5	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	6	CH4	6	6	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	7	CO	6	7	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	8	NO	6	8	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	9	NO2	6	9	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	10	NOX	6	10	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	11	O3	6	11	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	12	TS	6	12	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	13	H2S	6	13	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	14	SO2	6	14	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	15	WS2	6	15	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	16	WD2	6	16	01/JAN/77 00:00:00	31/DEC/77 23:00:00
1	1	6	17	WS3	6	17	01/JAN/77 00:00:00	31/DEC/77 23:00:00

1	1	11	3	TEM1	11	3	01/JAN/76	00:00:00	31/DEC/76 23:00:00
1	1	11	28	RAD	11	28	01/JAN/76	00:00:00	31/JAN/76 23:00:00
1	1	12	1	WS1	12	1	01/JAN/76	00:00:00	30/APR/76 23:00:00
1	1	12	2	WD1	12	2	01/JAN/76	00:00:00	30/APR/76 23:00:00
1	1	12	3	TEM1	12	3	01/JAN/76	00:00:00	30/APR/76 23:00:00
1	1	13	1	WS1	13	1	01/MAY/76	00:00:00	31/DEC/76 23:00:00
1	1	13	2	WD1	13	2	01/MAY/76	00:00:00	31/DEC/76 23:00:00
1	1	13	3	TEM1	13	3	01/MAY/76	00:00:00	31/DEC/76 23:00:00

SAROAD TAPE GENERATION RUN ON: 6:24 AM SAT., 21 AUG., 1982

TAPE NUMBER: 1103
FILE NUMBER: 4
RECORDING DENSITY: 1600 ASCII | uaqmet_78
NO OF TRACKS: 9
LOGICAL RECORD LENGTH: 80 CHARACTERS
BLOCKING FACTOR: 100 RECORDS PER BLOCK
PARITY: ODD
SORTING SEQUENCE: TIME IS IN ASCENDING ORDER WITHIN EACH SITE AND COMP

FILE CONTENT:

CARD FORMAT ID	SAMPLE HOUR INTERVAL	SITE CODE	PARAMETER ID		AQDMS SITE	AQDMS COMP	BEG TIME	END TIME
1	1	4	1	WS1	4	1	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	4	2	WD1	4	2	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	4	3	TEM1	4	3	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	4	20	STH1	4	20	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	4	21	SIGW	4	21	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	1	WS1	6	1	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	2	WD1	6	2	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	3	TEM1	6	3	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	4	THC	6	4	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	5	NC	6	5	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	6	CH4	6	6	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	7	CO	6	7	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	8	NO	6	8	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	9	NO2	6	9	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	10	NOX	6	10	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	11	O3	6	11	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	12	TS	6	12	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	13	H2S	6	13	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	14	SO2	6	14	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	15	WS2	6	15	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	16	WD2	6	16	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	17	WS3	6	17	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	18	WD3	6	18	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	19	DT1	6	19	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	20	STH1	6	20	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	21	SIGW	6	21	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	26	BARP	6	26	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	27	NSOL	6	27	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	6	30	RH1	6	30	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	11	1	WS1	11	1	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	11	2	WD1	11	2	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	11	3	TEM1	11	3	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	13	1	WS1	13	1	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	13	2	WD1	13	2	01/JAN/78 00:00:00	31/DEC/78 23:00:00
1	1	13	3	TEM1	13	3	01/JAN/78 00:00:00	31/DEC/78 23:00:00

SAROAD TAPE GENERATION RUN ON: 9:13 AM SAT., 21 AUG., 1982

TAPE NUMBER: 1103
FILE NUMBER: 5
RECORDING DENSITY: 1600 ASCII uaqmet_79
NO OF TRACKS: 9
LOGICAL RECORD LENGTH: 80 CHARACTERS
BLOCKING FACTOR: 100 RECORDS PER BLOCK
PARITY: ODD
SORTING SEQUENCE: TIME IS IN ASCENDING ORDER WITHIN EACH SITE AND COMP

FILE CONTENT:

CARD FORMAT ID	SAMPLE HOUR INTERVAL	SITE CODE	PARAMETER ID		AQDMS SITE	AQDMS COMP	BEG TIME	END TIME
1	1	4	1	WS1	4	1	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	4	2	WD1	4	2	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	4	3	TEM1	4	3	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	4	20	STH1	4	20	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	4	21	SIGW	4	21	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	1	WS1	6	1	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	2	WD1	6	2	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	3	TEM1	6	3	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	4	THC	6	4	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	5	NC	6	5	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	6	CH4	6	6	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	7	CO	6	7	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	8	NO	6	8	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	9	NO2	6	9	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	10	NOX	6	10	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	11	O3	6	11	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	12	TS	6	12	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	13	H2S	6	13	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	14	SO2	6	14	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	15	WS2	6	15	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	16	WD2	6	16	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	17	WS3	6	17	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	18	WD3	6	18	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	19	DT1	6	19	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	20	STH1	6	20	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	21	SIGW	6	21	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	26	BARP	6	26	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	27	NGOL	6	27	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	6	30	RH1	6	30	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	11	1	WS1	11	1	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	11	2	WD1	11	2	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	11	3	TEM1	11	3	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	13	1	WS1	13	1	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	13	2	WD1	13	2	01/JAN/79 00:00:00	31/DEC/79 23:00:00
1	1	13	3	TEM1	13	3	01/JAN/79 00:00:00	31/DEC/79 23:00:00

SAROAD TAPE GENERATION RUN ON:12:03 PM SAT., 21 AUG., 1982

TAPE NUMBER: 1103
FILE NUMBER: 6
RECORDING DENSITY: 1600 ASCII
NO OF TRACKS: 9
LOGICAL RECORD LENGTH: 80 CHARACTERS
BLOCKING FACTOR: 100 RECORDS PER BLOCK
PARITY: ODD
SORTING SEQUENCE: TIME IS IN ASCENDING ORDER WITHIN EACH SITE AND COMP

uaqmet_80

FILE CONTENT:

CARD ID	FORMAT	SAMPLE HOUR INTERVAL	SITE CODE	PARAMETER ID		AQDMS SITE	AQDMS COMP	BEG TIME	END TIME
1		1	4	1	WS1	4	1	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	4	2	WD1	4	2	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	4	3	TEM1	4	3	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	4	20	STH1	4	20	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	4	21	SIGW	4	21	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	1	WS1	6	1	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	2	WD1	6	2	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	3	TEM1	6	3	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	4	THC	6	4	01/JAN/80 00:00:00	31/MAY/80 23:00:00
1		1	6	5	NC	6	5	01/JAN/80 00:00:00	31/MAY/80 23:00:00
1		1	6	6	CH4	6	6	01/JAN/80 00:00:00	31/MAY/80 23:00:00
1		1	6	7	CO	6	7	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	8	NO	6	8	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	9	NO2	6	9	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	10	NOX	6	10	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	11	O3	6	11	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	12	TS	6	12	01/JAN/80 00:00:00	31/MAY/80 23:00:00
1		1	6	13	H2S	6	13	01/JAN/80 00:00:00	31/JAN/80 23:00:00
1		1	6	14	SO2	6	14	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	15	WS2	6	15	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	16	WD2	6	16	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	17	WS3	6	17	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	18	WD3	6	18	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	19	DT1	6	19	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	20	STH1	6	20	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	21	SIGW	6	21	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	26	BARP	6	26	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	27	NSOL	6	27	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	6	30	RH1	6	30	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	11	1	WS1	11	1	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	11	2	WD1	11	2	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	11	3	TEM1	11	3	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	13	1	WS1	13	1	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	13	2	WD1	13	2	01/JAN/80 00:00:00	31/DEC/80 23:00:00
1		1	13	3	TEM1	13	3	01/JAN/80 00:00:00	31/DEC/80 23:00:00

SHRDAD TAPE GENERATION RUN ON: 4:40 PM TUE., 24 AUG., 1982

TAPE NUMBER: 1103
FILE NUMBER: 7
RECORDING DENSITY: 1600 ASCII
NO OF TRACKS: 9
LOGICAL RECORD LENGTH: 80 CHARACTERS
BLOCKING FACTOR: 100 RECORDS PER BLOCK
PARITY: ODD
SORTING SEQUENCE: TIME IS IN ASCENDING ORDER WITHIN EACH SITE AND COMP

uaqmet_81

FILE CONTENT:

CARD FORMAT ID	SAMPLE HOUR INTERVAL	SITE CODE	PARAMETER ID		AQDMS SITE	AQDMS COMP	BEG TIME	END TIME
		4	1	WS1	4	1	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		4	2	WD1	4	2	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		4	3	TEM1	4	3	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		4	20	STH1	4	20	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		4	21	SIGW	4	21	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	1	WS1	6	1	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	2	WD1	6	2	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	3	TEM1	6	3	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	7	CO	6	7	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	8	NO	6	8	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	9	NO2	6	9	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	10	NOX	6	10	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	11	O3	6	11	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	14	SO2	6	14	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	15	WS2	6	15	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	16	WD2	6	16	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	17	WS3	6	17	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	18	WD3	6	18	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	19	DT1	6	19	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	20	STH1	6	20	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	21	SIGW	6	21	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	26	BARP	6	26	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	27	NSOL	6	27	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		6	30	RH1	6	30	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		11	1	WS1	11	1	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		11	2	WD1	11	2	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		11	3	TEM1	11	3	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		13	1	WS1	13	1	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		13	2	WD1	13	2	01/JAN/81 00:00:00	31/DEC/81 23:00:00
		13	3	TEM1	13	3	01/JAN/81 00:00:00	31/DEC/81 23:00:00

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activities: Total Suspended Solids
Format: utsp81, j34A_2, j42_2
Period Covered: 1981, 1982, 1983

Parameter	Col.	Format	Units
comment records have a * in column 2			
date	4	A9	dd-mm-yy
station n1 A4a	24	F4.1	micrograms per cubic meter
station n2 A4b	33	F4.1	mcg/c^3m
station n3 A6a	42	F4.1	mcg/c^3m
station n4 A6b	51	F4.1	mcg/c^3m
station n5 A10	60	F4.1	mcg/c^3m

9999 indicates no data
possible to go to 150 characters per record

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activities: Sound Level
Format: j34A_3, j42_3
Period Covered: 1982, 1983

Parameter	Col.	Format	Units
comment records have * in column 2			
date	4	A9	dd-mn-yy
station 1 time	17	I4	hh-mm
sound level	22	I4	decibels
station 2 time	30	I4	hh-mm
sound level	35	I4	decibels
station 3 time	43	I4	hh-mm
sound level	48	I4	decibels
station 4 time	56	I4	hh-mm
sound level	61	I4	decibels
station 5 time	69	I4	hh-mm
sound level	74	I4	decibels
station 6 time	82	I4	hh-mm
sound level	87	I4	decibels
station 7 time	95	I4	hh-mm
sound level	100	I4	decibels
station 8 time	108	I4	hh-mm
sound level	113	I4	decibels

9999 indicates no data

station id key
1 = Highway 45
2 = Ignacio
3 = Site A4
4 = Site A6
5 = Ignacio
6 = Site A10
7 = Highway 45
8 = Asphalt Wash

SAROAD TAPE GENERATION RUN ON:12:17 AM FRI., 29 APR., 1983

TAPE NUMBER: 1282
FILE NUMBER: 1
RECORDING DENSITY: 1600 EBCDIC
NO OF TRACKS: 9
LOGICAL RECORD LENGTH: 80 CHARACTERS
BLOCKING FACTOR: 100 RECORDS PER BLOCK
PARITY: ODD
SORTING SEQUENCE: TIME IS IN ASCENDING ORDER WITHIN EACH SITE AND COMP

jkc034a_1

FILE CONTENT:

CARD FORMAT ID	SAMPLE HOUR INTERVAL	SITE CODE	PARAMETER ID	AQDMS SITE	AQDMS COMP	BEG TIME	END TIME
1	1	2	3	2	3	01/JAN/82 00:00:00	31/OCT/82 23:00:00
1	1	2	30	2	30	01/JAN/82 00:00:00	31/OCT/82 23:00:00
1	1	4	1	4	1	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	4	2	4	2	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	4	3	4	3	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	4	7	4	7	01/JUN/82 00:00:00	31/DEC/82 23:00:00
1	1	4	8	4	8	01/JUN/82 00:00:00	31/DEC/82 23:00:00
1	1	4	9	4	9	01/JUN/82 00:00:00	31/DEC/82 23:00:00
1	1	4	10	4	10	01/JUN/82 00:00:00	31/DEC/82 23:00:00
1	1	4	11	4	11	01/JUN/82 00:00:00	31/DEC/82 23:00:00
1	1	4	14	4	14	01/JUN/82 00:00:00	31/DEC/82 23:00:00
1	1	4	20	4	20	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	4	21	4	21	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	6	1	6	1	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	6	2	6	2	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	6	3	6	3	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	6	7	6	7	01/JAN/82 00:00:00	31/OCT/82 23:00:00
1	1	6	8	6	8	01/JAN/82 00:00:00	31/OCT/82 23:00:00
1	1	6	9	6	9	01/JAN/82 00:00:00	31/OCT/82 23:00:00
1	1	6	10	6	10	01/JAN/82 00:00:00	31/OCT/82 23:00:00
1	1	6	11	6	11	01/JAN/82 00:00:00	31/OCT/82 23:00:00
1	1	6	14	6	14	01/JAN/82 00:00:00	31/OCT/82 23:00:00
1	1	6	15	6	15	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	6	16	6	16	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	6	17	6	17	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	6	18	6	18	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	6	19	6	19	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	6	20	6	20	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	6	21	6	21	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	6	26	6	26	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	6	27	6	27	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	6	30	6	30	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	10	1	10	1	01/JUN/82 00:00:00	31/DEC/82 23:00:00
1	1	10	2	10	2	01/JUN/82 00:00:00	31/DEC/82 23:00:00
1	1	10	3	10	3	01/JUN/82 00:00:00	31/DEC/82 23:00:00
1	1	11	1	11	1	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	11	2	11	2	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	11	3	11	3	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	13	1	13	1	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	13	2	13	2	01/JAN/82 00:00:00	31/DEC/82 23:00:00
1	1	13	3	13	3	01/JAN/82 00:00:00	31/DEC/82 23:00:00

QSAROD (830429.1633)

SAROAD TAPE GENERATION RUN ON: 2:53 PM FRI., 25 MAY , 1984

TAPE NUMBER: 1350
FILE NUMBER: 1
RECORDING DENSITY: 1600 EBCDIC
NO OF TRACKS: 9
LOGICAL RECORD LENGTH: 80 CHARACTERS jkc042_1
BLOCKING FACTOR: 100 RECORDS PER BLOCK
PARITY: ODD
SORTING SEQUENCE: TIME IS IN ASCENDING ORDER WITHIN EACH SITE AND COMP

FILE CONTENT:

CARD FORMAT ID	SAMPLE HOUR INTERVAL	SITE CODE	PARAMETER ID	AQDMS SITE	AQDMS COMP	BEG TIME	END TIME
1	1	4	1	4	1	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	4	2	4	2	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	4	3	4	3	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	4	7	4	7	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	4	8	4	8	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	4	9	4	9	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	4	10	4	10	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	4	11	4	11	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	4	14	4	14	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	4	20	4	20	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	4	21	4	21	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	6	1	6	1	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	6	2	6	2	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	6	3	6	3	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	6	15	6	15	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	6	16	6	16	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	6	17	6	17	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	6	18	6	18	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	6	19	6	19	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	6	20	6	20	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	6	21	6	21	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	6	26	6	26	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	6	27	6	27	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	6	30	6	30	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	9	3	9	3	01/MAY/83 00:00:00	31/DEC/83 23:00:00
1	1	9	30	9	30	01/MAY/83 00:00:00	31/DEC/83 23:00:00
1	1	10	1	10	1	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	10	2	10	2	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	10	3	10	3	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	11	1	11	1	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	11	2	11	2	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	11	3	11	3	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	13	1	13	1	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	13	2	13	2	01/JAN/83 00:00:00	31/DEC/83 23:00:00
1	1	13	3	13	3	01/JAN/83 00:00:00	31/DEC/83 23:00:00

GSAROD <840605.1123>

FLUSHing Transect Data

Flushing transect data consist of records of animals observed while walking a marked route of 1 kilometer length. Individuals or groups are identified and counted. Perpendicular distance from the transect line is estimated and activity and substrate are recorded. An entry may also document an animal heard or known to be in the area by signs (tracks, droppings, etc.).

Each transect is usually walked on 5 consecutive days. Transects may be walked at one or more of three times during the day with emphasis on different taxa at each time. Although all taxa encountered are recorded, morning observations are intended for birds, afternoons for reptiles and evening (just before dusk) for mammals.

Taxa are recorded by the first 3 letters of order, family, genus and species. Incomplete identifications are indicated with a zero in the 3 character field. Incomplete identifications may be omitted from some analyses, and some analyses may use only entries seen and counted, omitting entries heard or known only from signs.

A taxon collating number and functional group number are added to the data file by a program comparing the taxon name with a reference list file. The collating number facilitates placing taxon names in phylogentic order while the functional group number allows analyses of functional group subsets of the data.

For purposes of developing a species presence list for the study area, additional entries may be made for sightings at other times or locations than during regularly scheduled transect walks. These observations are flagged as "opportunistic" and are associated with a vegetation type, but not always with a particular transect. The location of a sighting away from a particular transect is not recorded in any way in the data file.

Baseline DEER Locations (Visual and Telemetry)

Deer were recorded from visual sightings and telemetry tracking in 1975 and 1976 by personnel from VTN. The raw data were reported in quarterly reports to WRSOC. Information included: date, age/sex composition of sighted groups, transmitter frequency of radio tracked individuals, vegetation/habitat type of location and directions to the location.

In 1982, those data were re-recorded in a computer ready format with the descriptive locations converted to UTM coordinates estimated to the nearest 9.1 km. Separate fields contain counts of the three recognizable age/sex classes (bucks, does, and fawns) and undetermined. The 'total' field is filled by software during data validation. Location given by UTM coordinates replaces the 'VVNN' location format that is typical for BRI datasets.

RODENT Trapping Data

Rodent trapping data consist of trapping records from multiday (usually 5) trapping sessions. Each line of data records an initial or re-capture (or an empty sprung trap). Vital statistics and ear tag (or toe clip) identification are recorded with the trap number. Various trap grid configurations are used (see below) but traps are always identified by a single number that is obtained by numbering trap stations consecutively up and down the second dimension of the configuration (eg. a 6 by 12 layout is numbered 1 to 12 in the first long row; 13 to 24 in the opposite direction in the second row, etc.).

Complications in the data arise from (1) escapes during handling before all vital statistics are recorded and (2) same-day recapture of individuals that seek refuge in an open trap after being 'processed'. Traps are generally checked in numerical order and left closed during the day. Therefore, recaptures the same day occur at higher numbered trap stations and are recognized and ignored by BRI's summarization software.

In 1975 and 1976, no tags or toe clip codes were used on 2 by 12 grids (gridtype 2) so there is no recapture information. Weights were not taken at any time in 1975-6 so those years have been supplied with a standard weight for each species x age x sex (to facilitate biomass estimations).

shrub INSECT data

Shrub insect data consist of counts of insects collected by sampling single shrubs as well as measurements of the shrub. Individual shrubs are sampled by one of two methods. In 1981, a sweep net was employed to collect samples. In 1982, separate samples were collected with sweep nets and with a beating net and beating stick.

Two formats are interspersed in these data files. Each shrub sampled is recorded by a "zero line," that is, a line number zero (in col 1 & 2) which contains weather data and shrub measurements as well as a count of the number of "taxa" lines to follow. Each taxa line records the count, age class and functional group of a taxon present in the sample. The taxon is coded with 3 letter abbreviations for order, "family," genus and species and a code number to indicate whether the "family" is actually a sub-order or super-family. Sample identification information is in the same format on all lines. In addition to date and location, samples are also identified by a code for the species of the sampled shrub.

The counts recorded are actual counts for the full sample and may be standardized to a unit of shrub volume using the shrub dimensions on the "zero line" of each sample.

Generally a set of 10 or 20 shrubs is sampled at a location during each monthly sampling session which may span several days. In the lab, after identifications and counting are complete the 10 or 20 samples from the same hostplant species are pooled and total dry weights are recorded for each functional group. The weights are recorded in a separately documented group of files (q.v.).

Shrub INSECT Functional Group Weights Data

The 10 or 20 replicate samples for a hostplant species at one date ("week") and location are pooled after individual counts are recorded. The dry weight of each of 9 functional groups is recorded with the same date, time, location and host identifiers that label the counts by individual samples in the shrub insect data. The dry weights are recorded in units of .00001 grams; weights greater than 1 gram will show a decimal point.

Soil INVERTebrate Data

Soil invertebrate data consist of counts of invertebrates extracted from soil and/or litter collected from under the canopy of a shrub. Two different extractions techniques are used on two separate portions of the soil sample to obtain different groups of invertebrates. As a result, a set of samples produces data for two different data files, both formatted the same.

The Tullgren modification of the Berlese funnel dry heat extraction yields arthropods (mainly mites) while a salt water-ice extraction yields nematodes. The data format is similar to the insect data format in that the first line of data for a sample is the "zero line" which contains information about the size of the soil sample, how it was divided for the extractions, the size of the shrub under which it was taken, and a count of the number of taxa which are recorded for the sample. Taxa are coded non-hierarchically with a 3 digit code and are blocked up 7 entries per line.

Since the zero line information is the same for the taxon list in two different files, the data are coded in separate sets and matched by a program that matches sample ID numbers which include a proof digit. As a result, the example coding form for taxa lines does not quite match the format given here for the data as stored.

Counts recorded are raw counts from the examined portion of the extract from the portion of the total sample collected. Zero line values can be used to standardize the counts to a unit volume of soil. The original soil sample is taken with a core device that removes 103 cc of soil to a depth of 5 cm.

PLANT Dimensions Data

Plant density, cover and volume are determined from measurements of all individual shrubs within circles centered at random points at each sampling location. The radius of the circle is selected to include a practical range of numbers of individuals in the sample. Each individual shrub is identified to species and/or lifeform. Height of canopy and two perpendicular horizonal diameters are recorded.

Foliage Distribution Data

Vertical foliage distribution measurements are recorded for several (usually 20 to 50) randomly placed sample points at each sampling location. Foliage presence is reorded for 0.1 meter intervals from 0.0 to 0.5 meters and 0.5 meter intervals from 0.5 to 5.5 meters. A substrate category and percent cover estimate are also recorded for the sample point vicinity.

Low level (0.0 to 0.5m) intervals are used to calclate foliage height diversity for ground dwelling rodents. The low level intervals may then be pooled to provide a single presence/absence interval to use with the remaining 0.5m intervals (0.5 to 5.5) to calculate a foliage height diversity for birds.

Taxonomic Reference Files

For each category of data collection involving a significant species list, a reference file provides a listing of expected, valid taxon code names. The reference file also contains individual weight, functional group affiliations, and common or full scientific names. These files are used by data validation routines and data summarization routines.

The wildlife flushing reference file contains the taxon code, a taxon collating number which facilitates organizing output in phylogenetic order, two group designations, individual weight, and consuming biomass (currently for Birds, only).

The rodent reference file contains the taxon code, range of weights for adults and juveniles (for data verification) as well as mean expected weights for each age x sex category (for use when weights were not obtained at capture).

The insect reference file contains all 15 character taxon codes used (includes feeding type and life stage) and the most complete identification available. The file is used for data verification.

The soil invertebrate reference file contains the code numbers and the corresponding taxon name, as well as a functional group indication. The file is used for functional group summaries.

There are currently no reference files employed for any vegetation data being collected by BRI.

Tract: U-a/U-b

Sampling Locations

Sampling Locations Used By Bio Resources, Inc.

VVNN	Years	Location	
101	75-82	53.5 (E)	19.0 (N)
102	75-82	51.3	20.7
103	75-76 (81-82)	48.4	20.2
201	75-82	52.0	20.0
202	75-76	50.8	20.8
203	75-76	53.0	18.8
204	77-81	55.9	21.0
205	81-82	53.1	20.6
301	75-82	59.4	22.9
302	75-76	59.4	23.1
303	75-76	58.4	19.3
304	77-82	56.3	23.3
401	75-81	51.8	22.7
402	75-82	51.4	23.2
403	75-76	58.0	15.4
404	-82	50.4	23.5

River transect data

General Description

River transect data consist of records of sightings of waterfowl, as well as other birds and mammals, along the White River between Cowboy Canyon and Asphalt Wash. Individuals or groups of a taxon are recorded with age and sex (if determined) and river mileage to the nearest 0.1 mi. The survey is conducted by canoe on 3 consecutive days in April of each year.

Taxa are recorded by the first three letters of genus and species. Mileages are estimated from a map that shows mile markers and mileage at obvious landmarks. Mileages are measured from zero at Cowboy Canyon. Activity and substrate are optionally recorded.

Cartesian coordinates are added by a computer routine which uses a reference list of coordinates of 0.1 mile intervals along the river. The coordinates are expressed in meters in an arbitrary coordinate system encompassing the study area. We are in the process of revising the coordinate system to align with the local UTM grid and will resubmit this 1982 dataset along with the 1983 data.

Tract: U-a/U-b
Monitoring Activity: TERRESTRIAL - TAXONOMIC REF FILES
Format: j12_25

Wildlife Flushing Reference

Columns	Parameter
1-12	taxon code (ORDFAMGENSPE)
13	space
14-16	taxon collating number (puts families in phylogenetic order)
17-18	functional group code (numeric)
19	space
20-22	guild designation, for birds (alphabetic)
23-30	individual weight (g)
31-38	consuming biomass (g) for birds

Tract: U-a/U-b
Monitoring Activity: TERRESTRIAL - TAXONOMIC REF FILES
Format: j12_26

Rodent Weights Reference

Columns	Parameter
1-6	taxon (GENSPE)
7-10	minimum adult weight (g)
11-14	maximum adult weight (g)
15-18	minimum juvenile weight (g)
19-22	maximum juvenile weight (g)
23-26	mean adult male weight (g)
27-30	mean juvenile male weight (g)
31-34	mean adult female weight (g)
35-38	mean pregnant female weight (g)
39-42	mean juvenile female weight (g)

Tract: U-a/U-b
Monitoring Activity: TERRESTRIAL - TAXONOMIC REF FILES
Format: j12_26

Rodent Weights Reference

Columns	Parameter
1-6	taxon (GENSPE)
7-10	minimum adult weight (g)
11-14	maximum adult weight (g)
15-18	minimum juvenile weight (g)
19-22	maximum juvenile weight (g)
23-26	mean adult male weight (g)
27-30	mean juvenile male weight (g)
31-34	mean adult female weight (g)
35-38	mean pregnant female weight (g)
39-42	mean juvenile female weight (g)

Tract: U-a/U-b
Monitoring Activity: TERRESTRIAL - TAXONOMIC REF. FILE
Format: j12_27, j40_7

Insect Taxon Reference

Column	Parameter
1-3	order
4	code 1 = suborder 2 = super family 3 = family
5-7	code for taxonomic level indicated above
8-10	genus
11-13	species or minemonic for temporary OTU name
14	age group
15	feeding type
16	space
17-64	full name or description

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: TERRESTRIAL - TAXONOMIC REF. FILE
Format: j12_28, j32_7
Period Covered: 1982

Soil Invertebrate Reference

Column	Parameter
1	no. of taxon levels in name, each level is represented by a 3 capital letter abbreviation, separated by a space. the final level is spelled out in lower case.
3-5	class
7-9	order
11-13	suborder
15-17	family
19-21	genus
23-25	species
26-35	overflow or final taxon name
36-38	ID code number used in data files
40	trophic level code: 1 - herbivore 2 - carnivore 3 - detritivore 4 - bacterivore 5 - omnivore
42-46	weight of a typical individual(micrograms) (1982 & later)

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: TERRESTRIAL - FLUSH DATA
Format: j12_1, j12_2, j12_3, j12_4, j32_2, j40_1, j54_1, j12_5, j12_6, j12_7
1982 1983 1984
Period covered: 75-81 respectively

Parameters	Length	Format	Units
taxon code	1	A12	ord/fam/gen/spe
type of observation	13	I1	1= seen, 2=heard,
count (if seen)	14	I3	
distance (if seen)	17	I3	meters
activity code	20	I2	
substrate code	22	I2	
taxon collating number	24	I3	
functional group number	27	I2	
day no. of session	29	I2	
date	31	I6	yymmdd
opportunistic	37	I1	1=yes, 2=reg walk
time of day	38	I1	1 = morning 2 = evening 3 = afternoon
location (VVNN)	39	I4	see samp. location
VTN's code (their use)	43	I2	NA

Activity Code:

1. flying/running
2. stationary
3. feeding
4. mating
5. drinking
6. agonistic
7. other
8. local movement

Substrate Code:

1. ground
2. herbs
3. shrub base
4. shrub canopy
5. tree trunk
6. tree limb
7. tree foliage
8. air
9. water
10. rock outcrop/cliff
11. artificial perch

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: TERRESTRIAL - DEER DATA
Format: j12_8
Period Covered:

Parameters	Length	Format	Units
number of bucks seen in group	3	I3	
number of does seen	3	I3	
number of fawns seen	3	I3	
number of undetermined age/sex	3	I3	
total number in group	3	I3	
seen/radio	1	A1	(s)een (r)adio
east (x)	5	I5	Coordinate to .1 km
north (y)	5	I5	Coordinate to .1 km
habitat	2	I2	same code as flushing data
date	6	I6	yymmdd
VTN code (their use)	2	I2	

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: TERRESTRIAL - RODENT DATA
Format: j12_9, j12_10, j12_11, j12_12, j32_13, j40_2, j54_10, j12_13
j12_14, j12_15 1982 1983 1984
Period Covered: 75-81

Parameters	Col.	Length	Format	Units
trap number	1-3	3	I3	
trap condition	4	1	I1	code
genus/species	5-10	6	A6	GGGSSS
physical condition	11	1	A1	code
age	12	1	A1	code
sex	13	1	A1	code
reproductive condition	14	1	A1	code
tag code on toe clip number	15-19	5	I5	
new tag?	20	1	I1	1 = first o = dead or escaped
weight in grams	21-23	3	I3	grams
unused	24-28	5	5x	blank
day number in session	29-30	2	I2	
date	31-36	6	I6	yymmdd
grid type code	37-38	2	I2	code
location	39-42	4	I4	vvnn
VTN code (their use)	43-44	2	I2	

Trap Condition Codes
1. sprung,empty
2. inoperative
3. 'RHINO SET' - insensitive treadle release
4. trap missing

Physical Condition Code
1. T = torpid
2. D = dead
3. <blank> = ok

Age Code
1. J = juvenile
2. A = adult
3. <blank> = unknown

Sex Code
1. M = male
2. F = female
3. <blank> - unknown

Reproductive Code
1. P = pregnant
2. L = lactating
3. <blank> = other

Grid Type Code (Grid Configuration and Spacing)
A. 1 = 1x25 40m
B. 2 = 2x12 15x15m
C. 3 = 5x5 15x15m
D. 4 = 12x12 15x15m
E. 6 = 6x12 15x15m
F. 7 = 1x25 15m
G. 8 = 12x2 15xom (pairs at 12 stations)

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: TERRESTRIAL - SHRUB INSECT DATA
Format: j12_16, j32_4, j32_6, j40_5(beat), j54_2
Period Covered: '81 1982 1982 1983 1984

Parameters	Col.	Length	Format	Units
		Card 1		
line number	1-2	2	A2	'00' denote beginning of sample
sweep or beating sample (1982 only)	3	1	I1	1 = sweep 2 = beating
no. of taxa entries to follow	4-7	4	I4	
cloud cover	8	1	I1	1-4 25% intervals
host plant phenology	9	1	I1	code
temperature	10-11	2	I2	degrees C
wind direction	12-13	2	A2	N,NE,SE
wind speed	14-16	3	I3	km/hr
shrub height	17-19	3	I3	cm
shrub diameter	20-22	3	I3	cm

Host Plant Phenology Codes

1. dormant
2. leaf buds
3. new leaf growth
4. floral buds
5. flowering
6. seeds
7. fall cormancy
8. post-flowering leaf growth

Parameters	Col.	Length	Format	Units
	other cards (same for all the cards 2)			
card number	1-2	2	A2	
taxon code	3-15	13	A15	see jkc012_27
life stage	16	1	A1	see jkc012_27
functional group	17	1	A1	see jkc012_27
count of individuals	18-22	5	I5	
	following data (same for all the cards 2)			
sample number	23-24	2	I2	
hour of day	25-26	2	I2	1-24 hours
'week' of year	27-28	2	I2	
date	29-34	6	I6	yymmdd
host shrub species	35-35	2	I2	see below
location	37-40	4	I4	(VVNN)

Host Shrub Species

1. Artemisia tridentata
2. Chrysothamnus nauseosus
3. Chrysothamnus viscidiflorus
4. Sarcobatus vermiculatus
5. Juniperus osteosperma
6. Atriplex confertifolia
7. Tetradymia spinosa
8. Gryia spinosa
9. Bromus tectorum
10. (bunchgrasses)
11. Populus fremontic

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: TERRESTRIAL - SHRUB INSECT FUNCTIONAL GROUP WEIGHT
Format: j12_17, j32_3(sweep), j32_5(beat), j40_6(beat), j54_3
Period Covered: 1981 1982 1982 1983 1984

Parameters	Col.	Length	Format	Units
hour	1-2	2	I2	1-24
week of year	3-4	2	I2	
date	5-10	6	I6	yymmdd
shrub species	11-12	2	I2	
location	13-16	4	I4	(VVNN)
functional group no. 1	17-21	5	I5	actual
functional group no. 2	22-26	5	I5	.xxxxx grams
functional group no. 3	27-31	5	I5	.xxxxx grams
functional group no. 4	32-36	5	I5	.xxxxx grams
functional group no. 5	37-41	5	I5	.xxxxx grams
functional group no. 6	42-46	5	I5	.xxxxx grams
functional group no. 7	47-51	5	I5	.xxxxx grams
functional group no. 8	52-56	5	I5	.xxxxx grams
functional group no. 9	57-61	5	I5	.xxxxx grams
functional group no. 10	62-66	5	I5	.xxxxx grams(1983)

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: TERRESTRIAL - SHRUB INSECT
Format: j12_18
Period Covered: (1975-1976)

Parameters	Col.	Length	Format	Units
line number	1-2	2	I2	'o' distinguish beginning of sample
number of taxa entries	4-7	4	I4	
hostplant & phenology	8-22	15	A15	
for taxa lines:	new record:			
taxon code	3-15			000#FFFGGGSSS
lifestage	16	1	I1	/not recorded)
functional group	17	1	I1	see jkc012_27
count of individuals	18-22	5	I5	
for all data lines:				
date	23-28	6	I6	yymm(dd)
host plant code	29-30	2	A2	not recorded
location	31-40	10	A10	

Using essentially the same format as BRI's shrub insect data (above), insect data collected during the baseline study (1975-76) has been re-recorded in computer ready format. Each baseline data sample consisted of 50 sweeps with a standard insect sweep net over one or more individuals of a particular plant species. No measure of area or shrub volume is available for those samples. No insect biomass data are available. No attempt has yet been made to compare the taxonomic names used in 1975-76 with those used in 1981-82. Physical parameters comparable to those currently recorded on the 'zero line' were not available. The hostplant name, phenology and location name are recorded as they appeared in the original report.

locations:		approx UTM:	
"SOCYN"	near summit of Southam Canyon	653.?	4418.?
"RAGTOP"	near SE corner Sect 23	655.8	4421.2
"WRBR"	White River Bridge	655.7	4426.9
"DUCK"	Duck Rock, near Ua entrance	657.1	4424.5
"EVACR"	Evacuation Creek Bridge	657.5	4423.9

Phenological Stages of plants sampled:
"BLOOM" in bloom (includes partial on Tamarix)
"OLDBLO" late bloom stage
"NBLOOM" not in bloom
"BUD" in bud stage

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: TERRESTRIAL - SOIL INVERTEBRATE
ANTHROPODS AND NEMATODES

Format: j12_19, j12_20, j32_10, j32_11, j32_8, j32_9, j40_3, j40_4
Period Covered: 1981, 1981, 1982, 1982, 1981 1981 1983 1983

Parameters	Col.	Length	Format	Units
date	1-6	6	I6	yymmdd
week of year	7-8	2	I2	
hour	9-10	2	I2	1-24
shrub species code	11-12	2	I2	same as insects only #1 so far
for zero line:				
number of taxa recorded	21-25	5	I5	7 per line
total first weight	26-30	5	F5.2	0.01 grams
weight of nematode subsample	31-35	5	F5.2	0.01 g
weight of antropod subsample	36-40	5	F5.2	0.01g
total dry weight	41-45	5	F5.2	0.01g
shrub height	46-50	5	I5	cm
shrub diameter	51-55	5	I5	cm
portion of nematode extract counted	56-60	5	I5	(II/JJ)
portion of anthropod extract counted	61-65	5	I5	(II/JJ)
soil temperature	66-70	5	I5	degrees C
for taxa lines:				
seven fields	21-76			IIIJJJJJ III = taxon code JJJJJ = raw count

jkc012_19 - deleted and replaced with jkc032_8
jkc012_20 - deleted and replaced with jkc032_9

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: TERRESTRIAL - PLANTS
Format: j12_21, j12_22, j32_12
Period Covered: 1980, 1981 1982

Parameters	Col.	Length	Format	Units
plant taxon name	1-6	6	I6	GENSPE
life form	7-8	2	I2	see below
canopy height	9-12	4	I4	cm
major diameter	13-16	4	I4	cm
perpendicular diameter	17-20	4	I4	cm
placement number	21-23	3	I3	
radius	24-26	3	I3	cm
blank	27	1	1X	na
date	28-33	6	I6	yymmdd
location	34-37	4	I4	VVNN

life form code

1. evergreen trees
2. deciduous trees
3. evergreen shrub
4. deciduous shrub
5. evergreen spinescent shrub
6. deciduous spinescent shrub
7. caespitose woody shrub
8. perennial herb
9. annual/biennial
10. succulent
11. unknown
12. bare ground
13. woody vine
14. (undefined)
15. litter
16. dead wood
17. cottonwood
18. willow

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: TEWRRESTRIAL - FOLIAGE
Format: j12_23, j12_24
Period Covered: 1980, 1981

Parameters	Col.	Length	Format	Units
placement number	1-3	3	I3	
substrate code	4-5	2	I2	
percent cover	6-8	3	I3	percent
presence	9-24			presence (1) absent ( ) at each height interval
blank	25	1	1X	
date	26-31	6	I6	yymmdd
location	32-35	4	I4	VVNN

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: River Transect Data
Format: j32_1, j40_12, j40_13, j54_9
Period Covered: 1982, 1982, 1983, 1984

Parameter	Col.	Format	Units
taxon (gen/spe)	1	A6	
age (A, J, blank)	7	A1	
sex (M, F, blank)	8	A1	
aspect of slope (N, NE, E, SE, etc.)	9	A2	
elevation class (low, mid, high)	11	1X	(not used)
ppt during observation (none, rain, snow)	12	1X	(not used)
count of individuals in group	13	I3	
distance from transect (+ = right, - = left)	16	I4	meters
mileage of siting	20	I3	(0.1 mi)
activity code (same as flushing tran codes)	23	I2	
substrate code	25	I2	
habitat code	27	I2	
wind	29	I1	
cloud	30	I1	
day no. (1-3)	31	I2	
starting date	33	3I2	
starting mileage (always -00 for river transects)	39	I3	
transect no.	42	I3	
coding from page no.	45	I2	
mapping x coordinate	47	I6	meters
mapping y coordinate	53	I6	meters

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Location Deer Sightings
Format: j40_10, j40_11
Period Covered: 1982,1983

Parameter	COL.	Format	Units
large mammal taxon code	1	A6	GGGSSS
1 = stem	7	I1	
2 = heard			
3 = sign			
No. of males	8	I2	
No. of females	10	I2	
No. of juveniles	12	I2	
No. of unknown age oe sex	14	I3	
total count	17	I3	
vegetation type code	20	A2	
activity code	22	A2	
substrate code	24	A2	
EW UTM coord.	29	I5	0.1 km
NS UTM coord.	34	I5	
day number	41	I2	
starting date of field session	43	3I2	yr-mo-da

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Raptor Nest Data
Format: j40_14, j54_7
Period Covered: 1984

Parameter	Col.	Format	Units
nest no. (keyed to map & photograph)	1	I3	
nest description	4	A3	
1SN - large stick nest			
SSN - small stick nest			
GHO - great horned owl			
TVN - turkey vulture nest			
PFN - prairie falcon nest			
nest substrate	7	A1	
C - cliff			
T - tree			
G - ground			
east (x) utm coord. to o.1km (all on grid 12 - s)	8	F5.1	
north (y) utm coord. to o.1km (blank column)	13	F5.1	
height of nest above base of cliff or tree	19	I2	m
distance from nest to top of cliff or tree	21	I2	m
habitat	23	I1	
1 = greasewood 3 = shadscale			
2 = juniper 4 = riparian			
aspect (to the nearest 5°)	24	I3	%
filler	27	1X	
geologic formation	28	A1	
U - Unita Sandstone			
G - Green River			
nest configuration	29	A1	
F - face of cliff (no overhang)			
L - ledge (an overhanging ledge			
C - cave (deep depression with sides)			
V - vertical crack (entered from below)			
view from nest	30	A1	
O - open (broad landscape view)			
C - closed (cut off by canyon walls)			

Ten column fields recording status, condition, and fate of active nests by year beginning in 1982.

Blank Column (Col. 31, 41, 51, etc.)

Inactive nests (Col. 32 - 33, 41 - 42, etc.)

G	Good
F	Fair
P	Poor
N	Nest not checked
O	Obsolete (nest has disappeared)
?	Condition unknown
NA	Not Applicable (as for owl nests)

Active nests (Col. 32 - 33, 41 - 42, etc.)

GE	Golden Eagle
RT	Red-Tailed Hawk
PF	Prairie Falcon
NH	Noethern Harrier
CH	Cooper's Hawk
SS	Sharp-Shinned hawk
GH	Great Horned Owl
LE	Long-Eared Owl

Age of Parents (Col. 34- 35, 43 - 44, etc.)

AA - adult-adult
AJ - adult-juvenile
JJ - juvenile-juvenile

Number of young produced in successful nest (Col. 36, 45, etc.)

No.	Number of young produced (1, 2, 3, etc.)
S	Nest successful, number uncertain
F	Nest failed
?	Fate of nest unknown

Date of Hatching (Col. 37 - 39, 46 - 48, etc.)
(month and day mdd)

Blank Column (Col. 40, 49, etc.)

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activities: Annual Plant Cover & Biomass (Plants)
Format: j40_15
Period Covered: 1983

Parameter	Col.	Format	Units
bare ground % cover	1	I2	%
exposed rock % cover	3	I2	%
organic litter % cover	5	I2	%
cryptyogamic crust % cover	7	I2	%
total annual % cover	9	I2	%
total perennial % cover	11	I2	%
mean height of annuals	13	I3	cm
oven dry weight (.01 g) of annual biomass harvested	16	F5.2	g
5 fields of annual species taxon codes present	21	5A6	
sample plot id code	51	I2	
trapping grid id code	53	A4	
sample date	57	3I2	yr mo da
code form page	63	I2	

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Fall Vegetal Cover (Plants)
Format: j40_16
Period Covered: 1983

Parameters	Col.	Formats	Units
plant taxon code or substrate code	1	A6	
percent cover	7	I3	%
count of individuals for plants only	10	I3	
plot id number	13	A2	
in/out of boundary of trapping grid	15	A1	
sample date	16	3I2	yr mo da
trapping grid id code	22	I4	
code form page	26	I2	

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Stem Leader growth & current year production
Format: j40_19
Period Covered: 1983

Parameter	Col.	Format	Units
5 fields of leader measurements	1	5I3	mm
position of canopy harvested	16	2I2	NN/DD
oven dried weight (0.01_g) of the portion harvested	20	F5.2	g
plant id number	25	I2	
in/out of the trapping grid boundary	27	A1	
taxon code of the woody plant sampled	28	A6	
sample date	34	3I2	yr mo da
trapping grid id code	40	I4	
code form page	44	I2	

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Seed Production
Format: j40_17, j40_18
Period Covered: 1983

Parameter	Col.	Format	Units
taxon code	1	A6	GGGSSS
greatest plant diameter	7	I4	cm
diameter perpendicular to greatest	11	I4	cm
mean height of plant	15	I4	cm
% vegetation cover for sward samples	19	I3	%
no. of seeds counted	22	I3	
no. of flowers examined for seeds	25	I2	
no. of flowers counted	27	I3	
no. of inflorescences examined for flowers	30	I2	
no. of inflorescences counted	32	I3	
sample id number	35	I3	
sample date	38	3I2	yr-mo-da
location (trapping grid)	44	I4	
coding form page	48	I2	

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Plant Water Potential (Leaf and Soil)
Format: j40_8, j40_9, j54_4, j54_5
Period Covered: 1983, 1983, 1984, 1984

Parameter	Col.	Format	Units
"week" of sampling	1	I2	
date of sample	3	3I2	yymmdd
host plant code	9	I3	
vegetation type code	12	I3	
transect code	15	I3	
sample number	18	I3	
psychrometer chamber temperature	21	F5.1	degrees c
zero offset	26	F5.1	mv
cooling time	31	I3	sec
first microvolt reading	34	F5.1	mv
dewpoint	39	F5.1	mv
second microvolt reading	44	F5.1	mv
psychrometer id code	49	A4	
psychrometer calibration value	53	F5.2	
final water potential	58	F6.1	

18 - 20 for leaf water potential - same as insect data samples for said water potential 25 & 50 refer to soil depth of psychrometer.

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Terrestrial Biology
Format: j40_20
Period Covered: 1983

Parameter	Col.	Format	Units
This is a documentation file by Bio-Resources, Inc.			

III. Locations of Data Collection

Each sample contains a location code specifying the site of its collection. Most of the samples were taken along one of 29 White River transects or one of 9 Evacuation Creek transects. These locations are shown in Figure 4.1-1 of the Environmental Monitoring Manual produced by WRSOC. A few exceptions to this are shown in Table 1-1.

Table 1-1

Transect Designation	Location
WROO	Transect established in Cowboy Canyon
WR90	Backwater area (0-30 meters) along Transect WR20
WR98	Samples taken from Cowboy Canyon
WR99	River just below Ignatio Bridge
WR	Unspecified location on White River
EC	Unspecified location on Evacuation Creek
PRO1-PRO8	Refers to items used in Production-Respiration chambers

III APPENDIX

4.1. List of Invertebrates, Codes, and Functional Groups

Table 4-1. is a list of the codes that are used in the benthic and drift invertebrate data files. This list of codes represents the level of identification required to place an individual in a functional group category. For all of the aquatic insects, the first three columns of the code represent the order; the second three columns, the family; the third three, the genus; and finally the last three represent the species. For other invertebrates, this representation does not always hold (e.g. ANNOLI represents Annelida Oligochaeta, the phylum and class of aquatic earthworms). Terrestrial insects have generally been lumped under the code TER.

Often it is not possible (because of complex taxonomy or missing parts) or desirable (because additional useful information cannot be gained) to key invertebrates beyond a certain level to place them in functional groups. Thus, attempts are made to key invertebrates to the level shown in Table 4-1. If they cannot be keyed to this level, the most complete categorization possible is listed in the data file and the organism is counted as unknown during summarization. On the other hand, if individuals can be easily keyed beyond the level shown in the table, the complete taxonomic description is listed in the data file. Thus, an individual with the code EPHEPH would be placed in the unknown functional group category, while one with EPHEPHEPHINE would be placed in the omnivore function group as it is considered as EPHEPHEPH.

A few aquatic insects have both immature and adult life stages in the water and belong to different functional groups. In these instances, the life stage and its appropriate functional group is shown in Table 4-1.

Also shown in the table are the weight curves used to calculate biomass that are assigned to each taxonomic group. These curves are based on the total length (not including appendages) of an individual. They are based on a comprehensive study by Leonard Smock (Fresh Water Biology, 1980, 10:375-383).

Table 4-1. Aquatic Insects

CODE	LIFE[1] STAGE	FUNCT[2] GROUP	WEIGHT[3] CURVE	ORDER	FAMILY	GENUS
COLAMP		3	1	COLEOPTERA	AMPHIZOIDAE	
COLDYTHYD		3	1	COLEOPTERA	DYTISCIDAE	HYDATICUS
COLELM		4	1	COLEOPTERA	ELMIDAE	
COLHAL		1	1	COLEOPTERA	HALIPLIDAE	
COLHYDHYD	LA	3	1	COLEOPTERA	HYDROPHILIDAE	HYDROPHILUS
COLHYDHYD	AD	4	1	COLEOPTERA	HYDROPHILIDAE	HYDROPHILUS
CLLISOISO		4	9	COLLEMBOLA	ISOTOMIDAE	ISOTOMURUS
DIPCHI		4	2	DIPTERA	CHIRONOMIDAE	
DIPCUL		4	2	DIPTERA	CULICIDAE	
DIPEMPHEM		4	2	DIPTERA	EMPIDIDAE	HEMERODROMIA
DIPEPHNOT		4	2	DIPTERA	EPHYDRIDAE	NOTIPHILA
DIPHELPAL		4	2	DIPTERA	HELEIDAE	PALPOMYIA
DIPPSY		4	2	DIPTERA	PSYCHODIDAE	
DIPRHAATH		3	2	DIPTERA	RHAGIONIDAE	ATHERIX
DIPSIMSIM		2	2	DIPTERA	SIMULIIDAE	SIMULIUM
DIPSTRNEM		4	2	DIPTERA	STRATIOMYIDAE	NEMOTELUS
DIPSTRSTR		4	2	DIPTERA	STRATIOMYIDAE	STRATIOMYS
DIPSYR		5	2	DIPTERA	SYRPHIDAE	
DIPTAB		3	2	DIPTERA	TABANIDAE	
DIPTIPTIP		4	2	DIPTERA	TIPULIDAE	TIPULA
EPHBAEBAE		4	3	EPHEMEROPTERA	BAETIDAE	BAETIS
EPHBAEDAC		4	3	EPHEMEROPTERA	EPHEMERELLIDAE	DACTYLOBAETIS
EPHEPHEPH		4	3	EPHEMEROPTERA	EPHEMERELLIDAE	EPHEMERELLA
EPHHEPHEP		2	3	EPHEMEROPTERA	HEPTAGENIIDAE	HEPTAGENIA
EPHHEPRHI		4	3	EPHEMEROPTERA	HEPTAGENIIDAE	RHITHROGENA
EPHLEPPAR		4	3	EPHEMEROPTERA	LEPTOPHLEBIIDAE	PARALEPTOPHLEBIA
EPHLEPTRA		4	3	EPHEMEROPTERA	LEPTOPHLEBIIDAE	TRAVERELLA
EPHOLILAC		4	3	EPHEMEROPTERO	OLIGONEURIIDAE	LACHLANIA
EPHPOLEPH		2	3	EPHEMEROPTERA	POLYMITARCIDAE	EPHORON
EPHSIPANA		3	3	EPHEMEROPTERA	SIPHLONURIDAE	ANALETRIS
EPHSIPISO		4	3	EPHEMEROPTERA	SIPHLONURIDAE	ISONYCHIA
EPHTRILEP		1	3	EPHEMEROPTERA	TRICORYTHIDAE	LEPTOHYPHES
EPHTRITRI		1	3	EPHEMEROPTERA	TRICORYTHIDAE	TRICORYTHODES
HEMCOR		1	4	HEMIPTERA	CORIXIDAE	
HEMGER		3	4	HEMIPTERA	GERRIDAE	
HEMNAU		3	4	HEMIPTERA	NAUCORIDAE	
HEMNOT		3	4	HEMIPTERA	NOTONECTIDAE	
HEMVELRHA		4	4	HEMIPTERA	VELIIDAE	RHAGOVELIA
MEGCOR		3	5	MEGALOPTERA	COLYDALIIDAE	
NEUMYR		5	9	NEUROPTERA	MYRMELEONTIDAE	
ODOGOM		3	6	ODONATA	GOMPHIDAE	
ODOLES		3	6	ODONATA	LESTIDAE	
ODOLIB		3	6	ODONATA	LIBELLULIDAE	
PLECHLKAT		4	7	PLECOPTERA	CHLOROPERLIDAE	KATHROPERLA

Table 4-1. Aquatic Insects (continued)

CODE	LIFE[1] STAGE	FUNCT[2] GROUP	WEIGHT[3] CURVE	ORDER	FAMILY	GENUS
PLEPPRLACR		3	7	PLECOPTERA	PERLIDAE	ACRONEURIA
PLEPERISO		3	7	PLECOPTERA	PERLODIDAE	ISOGENUS
TRIBRABRA		4	8	TRICHOPTERA	BRACHYCENTRIDAE	BRACHYCENTRUS
TRIHYDHYD		4	8	TRICHOPTERA	HYDROPSYCHIDAE	HYDROPSYCHE
TRIHDRHYD		1	8	TRICHOPTERA	HYDROPTILIDAE	HYDROPTILA
TRILEPTRI		1	8	TRICHOPTERA	LEPTOCERIDAE	TRIAENODES
TRILIMLIM		4	8	TRICHOPTERA	LIMNEPHILIDAE	LIMNEPHILUS

Other Invertebrates

CODE	LIFE[1] STAGE	FUNCT[2] GROUP	WEIGHT[3] CURVE	CLASSIFICATION
ANNOLI		4	9	ANNELIDA OLIGOCHAETA
MOLGAS		4	9	MOLLUSCA GASTROPODA
NEM		4	9	NEMATODA
TER		5	10	TERRESTRIAL INVERTEBRATE
ARAHYD		3	9	ARACHNOIDEA HYDRACARINA

[1]Key to Life Stages
(blank)=all aquatic life stages
LA = larva
NY = nymph
PU = pupa
AD = adult

[2]Key to Functional Group
1 = Herbivore
2 = Detritivore
3 = Predator
4 = Omnivore
5 = Terrestrial

[3]Key to Wt Curves: biomass(mg)=a*(length(mm))^b

Wt Curve #	a	b
1	.1528	2.18
2	.0054	2.43
3	.0066	2.88
4	.0314	2.40
5	.0029	2.75
6	.0140	2.78
7	.0023	3.39
8	.0019	3.12
9	.0190	2.46
10	.0300	2.62

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: AQUATIC - BENTHIC INVERTEBRATE
Format: j14_1, j30_2, j43_1, j53_1
Period Covered: 8/27/81 — 1982 — 1983 — 1984

Parameters	Col.	Length	Format	Units
Header Record				
date	1-6	6	I6	yymmdd
transect #	8-11	4	A4	wrmec
distance along transect	13-16	4	F4.1	m
sample log #	18-26	9	A9	(not used in 1981)
sample # of replic	28-29	2	I2	
% of sample identified	31-33	4	I3	percent
code of sample type	35-36	2	A2	(see below)
# of secondary records	38-40	3	I3	
Secondary Record				
order code of invertebrate	1-3	3	A3	(see documents)
family code of invertebrate	4-6	3	A3	(see documents)
genus code of invertebrate	7-9	3	A3	(see documents)
spec. code of invertebrate	10-12	3	A3	(see documents)
life stage code	14-15	2	A2	(see below)
length of invertebrate	17-19	3	I3	mm
# of invertebrate in sample w/these characteristics	21-24	4	I4	
percent of whole sample	26-28	3	I3	percent

Life Stage Code

LA = larva
NY = nymph
PU = pupa
AD = adult
IS = instar shuck
EX = exuvial
CA = caddis fly larval case
(the last three categories are not considered to be live invertebrates)

Code or Type of Sampler Used

Code	Samples	Area Sampled cm^2
HE	Hess	1320.0
HS	New Hess	1297.0
SU	Surber	930.3
MS	Modified Surber	929.0
CT	Clear Tube	16.6
3C	3 Clear Tube	49.8
BT	Blue Tube	88.2

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: AQUATIC - BENTHIC ORGANIC
Format: j14_2, j30_3, j43_2, j53_2
Period Covered: 5/23/81 ~~1982~~ 1983 1984

Parameters	Col.	Length	Format	Units
date	1-6	6	I6	yymmdd
transect no.	8-11	4	A4	WR = White River EC = Evac. Creek
distance along transect	13-16	4	F4.1	m
sample log no.	18-26	9	A9	(not used in 1981)
sample of replic.	28-29	2	I2	
code of benthic samples	31-32	2	A2	(see below)
wet wt. of sample	34-39	6	F6.1	gm
dry wt. of sample	41-46	6	F6.1	gm
percent of orig. dried	48-50	3	I3	percent

Code of Benthic Samples

Code	Samples	Area Sampled cm^2
HE	Hess	1320.0
HS	New Hess	1297.0
SU	Surber	930.3
MS	Modified Surber	929.0
CT	Clear Tube	16.6
3C	3 Clear Tubes	49.8
BT	Blue Tube	88.2

U-a/U-b Formats

Tract : U-a/U-b
Monitoring Activity: AQUATIC - DRIFT INVERTEBRATE
Format: j14_3, j30_4
Period Covered: 5/3/81 1982

Parameters	Col.	Length	Format	Units
Header Records				
date	1-6	6	I6	yymmdd
sample location	8-11	4	A4	wr
sample log #	13-21	9	A9	(not used in 1981)
sample number of replic.	23-24	2	I2	
time net placed in river	26-29	4	I4	hhmm 24 hr
time net removed from river	31-34	4	I4	hhmm
code of drift net	36	1	A1	(see below)
% of sample identified	38-40	3	I3	percent
velocity of water at mouth of net	42-44	3	I3(?)	cm/s
no. of secondary records	46-48	3	I3	
Secondary Records				
order code of invertebrate	1-3	3	A3	see documentation
family code of invertebrate	4-6	3	A3	see documentation
genur code of invertebrate	7-9	3	A3	see documentation
spec. code of invertebrate	10-12	3	A3	see documentation
life stage code	14-15	2	A2	see below
length of invertebrate	17-19	3	I3	mm
no. of invertebrate in sample w/these characteristics	21-24	4	I4	
percent of whole sample	26-28	3	I3	percent

Life Stage Code

LA = larva
NY = nymph
PU = pupa
AD = adult
IS = instar shuck
EX = exuviae
CA = caddis fly larval case
(the last 3 categories are not considered to be invertebrate)

Code of Drift Net

Code	Samples	Area Sampled (cm^2)
C	Cowdell	1393.5
D	Designer	520.8
R	Round	506.7
S	Square	1393.5

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: AQUATIC - DRIFT ORGANIC MATTER
Format: j14_4, j30_5, j43_3, j53_3
Period Covered: 6/28/81 1982 1983 1984

Parameters	Col.	Length	Format	Units
date	1-6	6	I6	yymmdd
sample location	8-11	4	A4	WR = White River EC = evac cr
sample log no.	13-21	9	A9	(not used in 1981)
sample no. of replic.	23-24	2	I2	
time drift net placed in river	26-29	4	I4	hhmm 24 hr
time drift net removed fm river	31-34	4	I4	hhmm
drift net code	36	1	A1	see below
depth of top of drift net	38-40	3	I3	cm
area of opening utilized	42-45	4	I4	cm^2
vol. of water at mouth of drift net	47-50	4	I4	cm/sec
wet wt. of sample	52-57	6	F6.1	gm
dry wt. of sample	59-64	6	F6.1	gm
percent of orig. sample dried	66-68	3	I3	percent

Drift Net Type Code

Code	Net	Area of net openings am^2
R	Round	506.7
S	Square	1393.5
D	Designer	520.8
C	Cowdell	1393.5

if opening is blank - entire opening is utilized.

U-a/U-b Formats

act: U-a/U-b
Monitoring Activity: AQUATIC - CHLOROPHYLL
Format: j14_5, j30_6, j43_4, j53_4
riod Covered: 4/13/81 1982 1983 1984

rameters	Col.	Length	Format	Units
te	1-6	6	I6	yymmdd
ansect #	8-11	4	A4	(see below)
distance along transect	13-16	4	F4.1	m
sample log #	18-26	9	A9	(see below)
sample # of replic	28-29	2	I2	(not used in 1981)
chlorophyll	31-35	5	F5.1	(see (A) below)
lophytin (relative amt)	37-41	5	F5.1	(see (B) below)

Transect #

= White River
EC = Evacuation Creek
PR = Production - Respiration Experiment

last character is 'c' in benthic samples
'w' in water samples

A) Chlorophyll a not corrected for pheophytin a
(mg/m^2 for benthic samples
ug/l for water samples)
B) Relative amount of phlophytin a after acidification
(mg/m^2 for benthic samples)
(ug/l for water samples)

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: AQUATIC - PHYSICAL DATA
Format: j14_6, j30_9, j43_6, j53_6
Period Covered: 4/13/81 – 1982 – 1983 – 1984

Parameters	Col.	Length	Format	Units
		Header Record		
date	1-6	6	I6	yymmdd
time	8-11	4	I4	hhmm 24/hr clock
project no.	13-16	4	A4	ERI #
transect	18-21	4	A4	WR = White River EC = Evac. Creek
air temperature	23-25	3	F3.0	C
water temperature	27-29	3	F3.0	C
cloud cover	31-33	3	F3.0	percent
depth intervals for oil	35-37	3	F3.0	cm
no. of records to follow	39-40	2	I2	
		Secondary Records		
code for edge of water	1	1	A1	w = water * = benthic
distance along transect	2-5	4	F4.1	m
stadia rod reading	6-9	4	I3	cm from level
no. of vel. readings	10-11	2	I2	
code (alrendant substrate)	12-13	2	A2	see below
percent substrate	14-16	3	I3	bottom
code (2nd substrate)	17-18	2	A2	see below
percent 2nd substrate	19-21	3	I3	bottom
velocity of surface	22-24	3	I3	cm/sec
velocity 1st interval	25-27	3	I3	cm/sec
velocity 2nd interval	28-30	3	I3	cm/sec
velocity 3rd interval	31-33	3	I3	cm/sec
velocity 4th interval	34-36	3	I3	cm/sec
velocity 5th interval	37-39	3	I3	cm/sec
velocity 6th interval	40-42	3	I3	cm/sec
velocity 7th interval	43-45	3	I3	cm/sec
velocity 8th interval	46-48	3	I3	cm/sec
velocity 9th interval	49-51	3	I3	cm/sec
velocity 10th interval	52-54	3	I3	cm/sec

Values not given are blank.
Substrate code

Code	Name	Description
BR	= bedrock	solid, unbroken rock
BO	= boulder	broken rock > 10 cm diameter
CO	= cobble	5 to 10 cm diameter
RU	= rubble	1 to 5 cm diameter
GR	= gravel	.5 to 1.0 cm diameter
SA	= sand	.1 to .5 cm diameter
SI	= silt	.01 to .1 cm diameter, sticky
CL	= clay	<.01 cm compacted

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: AQUATIC - RESPIRATION
Format: j14_7, j30_10
Period Covered: 5/1/81 1982

Parameters	Col.	Length	Format	Units
date	1-6	6	I6	yymmdd
transect loc. of chamber	8-11	3	A3	
distance across transect of chamber setup	13-16	4	F4.1	m
chamber #	18-19	2	I2	
depth of rock in chamber below water surface	21-23	3	I3	
run #	25-26	2	I2	
time	28-31	4	I4	hhmm (24 hr)
light reaching rock surface	33-38	6	F6.0	lux
change in oxygen in chamber	40-44	5	F5.1	mg/l
water temperatures	46-49	4	F4.1	C
dry wt of periphyton on rock	51-56	6	F6.2	gm
rock volume	58-62	5	F5.3	
surface area of rock	64-69	6	F6.1	cm^2

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: AQUATIC - SEDIMENT ORGANIC
Format: j14_8, j30_11, j43_7, j54_7
Period Covered: 4/13/81 1982 1983 1984

Parameters	Col.	Length	Format	Units
date	1-6	6	I6	yymmdd
transect no.	8-11	4	A4	WR = White River EC = Evac Creek
distance along transect	13-16	4	F4.1	m
sample log no.	18-26	9	A9	(not used in 1981)
sample no. of replic	28-29	2	I2	
crucible weight	31-38	8	F8.5	gm
wt. of crucible + sample pre-ignition	40-47	8	F8.5	gm
wt. of crucible + sample post-ignition	49-56	8	F8.5	gm

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: AQUATIC - SEDIMENT SIZE
Format: j14_9, j30_12, j30_13, j43_8, j54_8
Period Covered: 4/13/81 1982 – 1983 – 1983 1984

Parameters	Col.	Length	Format	Units
date	1-6	6	I6	yymmdd
transect no.	8-11	4	A4	WR + White River EC = Evac. Creek
distance along transect	13-16	4	F4.1	m
log no.	18-26	9	A9	not used in 1981
sample no. of replic	28-29	2	I2	
size > 12.5 mm	31-35	5	F5.1	dry weight (gm)
size <12.5 mm&> 4.0 mm	37-41	5	F5.1	dry weight (gm)
size <4.0 mm&> 2.0 mm	43-47	5	F5.1	dry weight (gm)
size <2.0 mm&> .5 mm	49-53	5	F5.1	dry weight (gm)
size <.5 mm&> .25 mm	55-59	5	F5.1	dry weight (gm)
size <.25 mm&> .125 mm	61-65	5	F5.1	dry weight (gm)
size <.125 mm&> .063 mm	67-71	5	F5.1	dry weight (gm)
size <.063 mm	73-77	5	F5.1	dry weight (gm)

for April 1981 to October 1982, the following applies:

size > 12.5 mm	31-35	5	F5.1	dry weight (gm)
size <12.5 mm &> 4.0 mm	37-41	5	F5.1	dry weight (gm)
size <4.0 mm&> 7.5 mm	43-47	5	F5.1	dry weight (gm)
size <.5 mm&> .25 mm	49-53	5	F5.1	dry weight (gm)
size <.25 mm	55-59	5	F5.1	dry weight (gm)
blank	61-77			

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: AQUATIC - TURBIDITY
Format: j14_10, j30_14, j43_9
Period Covered: 6/28/81 1982 - 1983

Parameters	Col.	Length	Format	Units
data	1-6	6	I6	yymmdd
transect number	8-11	4	A4	WR-White River EC-Evac. Creek PR-P/R Exp.
time	13-16	4	I4	hhmm (24 hr)
log number	18-26	9	A9	not used in 1981
number of replicates	28-29	2	I2	
fraction of light transmitted	31-34	4	F4.3	@ 660 nm
fraction of light transmitted	36-39	4	F4.3	@ 750 nm
fraction of light transmitted	41-44	4	F4.3	@ 435 nm
fraction of light transmitted	46-49	4	F4.3	@ 630 nm
fraction of light transmitted	51-54	4	F4.3	@ 645 nm

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: AQUATIC - WATER CHEMISTRY
Format: j14_11, j30_15, j43_10, j53_9
Period Covered: 5/3/81 1982 1983 1984

Parameters	Col.	Length	Format	Units
date	1-6	6	I6	yymmdd
transect no.	8-11	4	A4	WR = White River EC = Evac. Creek PR - P-R Chamber
time	13-16	4	I4	hhmm
log no.	18-26	9	A9	not used in 1981
no. of replicates	28-29	2	I2	
total phosphorous	31-34	4	I4	ug/l
total dissolved phosphorous	36-39	4	I4	ug/l
particulate phosphate	41-44	4	I4	ug/l
orthophosphate	46-48	3	I3	ug/l
NO_3	50-53	4	I4	ug/l
NO_2	55-58	4	I4	ug/l
NH_3	60-63	4	I4	ug/l
total inorganic nitrogen	65-68	4	I4	ug/l
total dissolved solids	70-73	4	I4	mg/l
total suspended solids	75-79	5	I5	mg/l
conductivity	81-84	4	I4	umhs/cm
pH	86-90	5	F5.2	

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: AQUATIC - SEDIMENT SIZE
Format: j14_9, j30_12, j30_13, j43_8, j54_8
Period Covered: 4/13/81 1982 — 1983 — 1983 1984

Parameters	Col.	Length	Format	Units
date	1-6	6	I6	yymmdd
transect no.	8-11	4	A4	WR + White River EC = Evac. Creek
distance along transect	13-16	4	F4.1	m
log no.	18-26	9	A9	not used in 1981
sample no. of replic	28-29	2	I2	
size > 12.5 mm	31-35	5	F5.1	dry weight (gm)
size <12.5 mm&> 4.0 mm	37-41	5	F5.1	dry weight (gm)
size <4.0 mm&> 2.0 mm	43-47	5	F5.1	dry weight (gm)
size <2.0 mm&> .5 mm	49-53	5	F5.1	dry weight (gm)
size <.5 mm&> .25 mm	55-59	5	F5.1	dry weight (gm)
size <.25 mm&> .125 mm	61-65	5	F5.1	dry weight (gm)
size <.125 mm&> .063 mm	67-71	5	F5.1	dry weight (gm)
size <.063 mm	73-77	5	F5.1	dry weight (gm)

for April 1981 to October 1982, the following applies:

size > 12.5 mm	31-35	5	F5.1	dry weight (gm)
size <12.5 mm &> 4.0 mm	37-41	5	F5.1	dry weight (gm)
size <4.0 mm&> 7.5 mm	43-47	5	F5.1	dry weight (gm)
size <.5 mm&> .25 mm	49-53	5	F5.1	dry weight (gm)
size <.25 mm	55-59	5	F5.1	dry weight (gm)
blank	61-77			

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: AQUATIC - TURBIDITY
Format: j14_10, j30_14, j43_9
Period Covered: 6/28/81 1982 - 1983

Parameters	Col.	Length	Format	Units
data	1-6	6	I6	yymmdd
transect number	8-11	4	A4	WR-White River EC-Evac. Creek PR-P/R Exp.
time	13-16	4	I4	hhmm (24 hr)
log number	18-26	9	A9	not used in 1981
number of replicates	28-29	2	I2	
fraction of light transmitted	31-34	4	F4.3	@ 660 nm
fraction of light transmitted	36-39	4	F4.3	@ 750 nm
fraction of light transmitted	41-44	4	F4.3	@ 435 nm
fraction of light transmitted	46-49	4	F4.3	@ 630 nm
fraction of light transmitted	51-54	4	F4.3	@ 645 nm

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: AQUATIC - WATER CHEMISTRY
Format: j14_11, j30_15, j43_10, j53_9
Period Covered: 5/3/81 1982 1983 1984

Parameters	Col.	Length	Format	Units
date	1-6	6	I6	yymmdd
transect no.	8-11	4	A4	WR = White River EC = Evac. Creek PR - P-R Chamber
time	13-16	4	I4	hhmm
log no.	18-26	9	A9	not used in 1981
no. of replicates	28-29	2	I2	
total phosphorous	31-34	4	I4	ug/l
total dissolved phosphorous	36-39	4	I4	ug/l
particulate phosphate	41-44	4	I4	ug/l
orthophosphate	46-48	3	I3	ug/l
NO_3	50-53	4	I4	ug/l
NO_2	55-58	4	I4	ug/l
NH_3	60-63	4	I4	ug/l
total inorganic nitrogen	65-68	4	I4	ug/l
total dissolved solids	70-73	4	I4	mg/l
total suspended solids	75-79	5	I5	mg/l
conductivity	81-84	4	I4	umhs/cm
pH	86-90	5	F5.2	

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Periphyton
Format: j30_1, j30_8, j43_5
Period Covered: 1981, 1982, 1983

Parameter	Col.	Format	Units
Header Records			
sample date	1	3I2	yymmdd
transect number	8	A4	
distance along transect	13	F4.1	m
ERI log number	18	A9	
sample number of replicates	28	I2	
volume periphyton extracted	31	F4.1	
number of secondary records to follow	36	I3	

WR = White River
EC = Evacuation Creek
PR = rock from production respiration

Secondary Record

Parameter	Col.	Formats	Units
taxonomic code	1	A9	1-3 represent phylum or subphylum 5-8 - genus
diameter of algae cell	11	F3.1	
length of algae cell	15	F3.1	
count of cells in sample with these characteristics	19	I3	
the field number of mulitple Microscope field counted in 1980 - total number of fields counted	25	I3	
objective lens magnification of microscope	27	I3	
replicate no. of the subsample	31	I2	
volume of subsample	34	F4.1	
code for area of microscope field counted	39	A1	

F = entire
D = 100 squares of whipple disc

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activities: Aquatic Biology
Format: j31_1
Period Covered: 1974 - 1976

Parameter	Col.	Format	Units
Header records			
sample date	1	I6	yy-mm-dd
transect number F 01 - F 05 = vtn transect codes	8	A4	
filler	13-16	4X	blank
filler	18-26	9X	blank
sample number of replicates	28	I2	blank if no replicates taken
% sample identified	31	F3.0	%
code of type of samples	35	A2	
number of secondary records that follow	38	I3	

code samples	Area samples(cm^2)
SU surber	930.3
KS windowscreen	-----

Secondary Records

Parameter	Col.	Format	Units
order code of invertebrate	1	A3	
family code of invertebrate	4	A3	
genus code of invertebrate	7	A3	
species code of invertebrate	10	A3	
blank code of invertebrate	14-15	2X	
blank code of invertebrate	17-19	3X	
number of invertebrate	21	I4	
% of whole sample	26	F3.0	%

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Algae
Format: j31_2
Period Covered: 1974-1976

Parameter	Col.	Format	Units
genus & species of algae	1	A31	
relative abundance in White River	36	A1	
relative abundance in Evacuation Creek	40	A1	

A = abundant
C = common
I = infrequent
R = rare

4. STATION ID AND NAME LISTING

HYDROMETEOROLOGY STATIONS:

0000000000RA-2 PREC. STORAGE GAUGE
0000000000RA-4 PREC. STORAGE GAUGE IN UPPER SOUTHAM CANYON
0000000000RA-8 PREC. STORAGE GAUGE
0000000000RB-1 PREC. STORAGE GAUGE NR. EAST BNDRY. TRACT Ub
0000000000RP-1 PREC. STORAGE GAUGE NR. MOUTH OF EVAC. CREEK
0000000000RS-1 PREC. STORAGE GAUGE AT MOUTH OF HELL'S HOLE CYN.
0000000000RS-2 PREC. STORAGE GAUGE NR. MOUTH OF EVAC. CREEK
0000000000RS-3 PREC. STORAGE GAUGE NORTH OF TRACTS (NEAR S-3)
0000000000RS-4 PREC. STORAGE GAUGE NR. MOUTH OF PLANT SITE WASH
0000000000RS-6 PREC. STORAGE GAUGE IN UPPER EVACUATION CREEK
0000000000RS-7 PREC. STORAGE GAUGE 2 MILES EAST OF EVAC. CREEK
0000000000RS-8 PREC. STORAGE GAUGE IN UPPER EVACUATION CREEK
0000000000RS-9 PREC. STORAGE GAUGE IN UPPER SOUTHAM CANYON
0000000000RV-7 PREC. STORAGE GAUGE 1 MILE NORTH OF TRACTS
0000000000RV-8 PREC. STORAGE GAUGE NR. MOUTH OF EVAC. CREEK
0000000000ARA-2 AUTOMATIC PREC. GAUGE IN SOUTHAM CANYON
0000000000ARA-4 AUTOMATIC PREC. GAUGE NR. MOUTH PLANT SITE WASH
0000000000ARA-8 AUTOMATIC PREC. GAUGE NR. S.E. CORNER TRACT Ub
0000000000ARF-1 AUTOMATIC PREC. GAUGE NR. MOUTH OF EVAC. CREEK
0000000000ARS-4 AUTOMATIC PREC. GAUGE NR. MOUTH PLANT SITE WASH
0000000000ARS-9 AUTOMATIC PREC. GAUGE IN UPPER SOUTHAM CANYON
0000000000EVP-2 EVAPORATION PAN IN SOUTHAM CANYON
0000000000EVP-6 EVAPORATION PAN
0000000000RA-13 PREC. STORAGE GAUGE IN PLANT SITE WASH
0000000000RS-10 PREC. STORAGE GAUGE IN ASPHALT WASH
0000000000RS-11 PREC. STORAGE GAUGE 1 MILE WEST OF TRACT Ua
0000000000RS-12 PREC. STORAGE GAUGE NR. MOUTH OF ASPHALT WASH
0000000000RS-13 PREC. STORAGE GAUGE AT MOUTH OF SOUTHAM CANYON
0000000000RS-15 PREC. STORAGE GAUGE
0000000000ARA-13 AUTOMATIC PREC. GAUGE IN PLANT SITE WASH
0000000000ARS-12 AUTOMATIC PREC. GAUGE NR. MOUTH OF ASPHALT WASH
0000000000EVP-13 EVAPORATION PAN IN PLANT SITE WASH

SURFACE WATER STATIONS:

0000009306395 WHITE RIVER NEAR COLORADO STATE LINE, UTAH
0000009306400 WHITE RIVER ABOVE HELL'S HOLE CANYON
0000009306405 HELL'S HOLE CANYON AT MOUTH, NR. WATSON, UT.
0000009306410 EVACUATION CREEK ABOVE MISSOURI CK NR DRAGON, UT
0000009306415 EVACUATION CREEK BLW PARK CYN NR WATSON UT
0000009306420 EVACUATION CREEK AT WATSON, UTAH
0000009306425 EVACUATION CREEK TRIBUTARY, NR WATSON, UTAH
0000009306430 EVACUATION CREEK NEAR MOUTH NEAR WATSON, UT
0000009306500 WHITE RIVER BELOW EVACUATION CREEK, NR WATSON
0000009306510 WHITE RIVER BELOW WAGON HOUND CANYON
0000009306600 WHITE RIVER ABOVE SOUTHAM CANYON WASH
0000009306602 PLANT SITE WASH NEAR WATSON UT
0000009306605 SOUTHAM CANYON WASH NR. WATSON, UTAH
0000009306610 SOUTHAM CANYON WASH AT MOUTH NR WATSON, UT
0000009306615 WHITE RIVER ABOVE ASPHALT WASH
0000009306620 ASPHALT WASH BELOW CENTER FORK, NR WATSON, UT
0000009306625 ASPHALT WASH NEAR MOUTH, NR. WATSON, UT.
0000009306700 WHITE RIVER BLW ASPHALT WASH NR WATSON, UT

4. STATION ID AND NAME LISTING (continued ...)

GROUND WATER WELLS:

395311109043601 EVACUATION CREEK ALLUVIUM NR. MISSOURI CR.ECMC-1
395035109074500 G-16B
395035109074501 G-16
395035109074502 G-16A
395040109075201 EVACUATION CREEK ALLUVIUM NR. PARK CYN. ECPC-1
395040109075202 EVACUATION CREEK ALLUVIUM NR. PARK CYN. ECPC-2U
395157109120301 G-6
395201109120401 G-19
395226109091201 G-13
395226109091202 G-13A
395229109091201 G-20
395359109093201 G-12
395409109121601 AG-7
395442109130601 X-10 (EXPLORATION HOLE)
395450109105901 G-7
395453109111001 P-3
395500109124401 G-15
395502109124302 G-4A
395506109150601 X-1 (EXPLORATION HOLE)
395510109094901 G-14
395515109094901 G-18
395515109094902 G-18A
395519109120501 X-9 (EXPLORATION HOLE)
395530109134901 G-21
395531109124301 G-4
395548109080701 P-4
395554109172701 AG-3-1 LOWER
395554109172702 AG-3-2
395554109172703 AG-3-3 UPPER
395603109120901 G-5
395607109132601 G-2
395607109132602 G-2A
395612109102401 X-5 (EXPLORATION HOLE)
395614109111401 G-11
395616109131201 G-1
395617109134401 P-2 UPPER
395617109134402 P-2 LOWER
395619109085401 X-6 (EXPLORATION WELL)
395619109111301 G-22

395626109115301 UF-6-1
395626109115302 UF-6-2
395627109115901 UF-1-1
395627109115902 UF-1-2
395627109115903 UF-1-3
395627109115904 UF-1-4
395628109115501 UF-2-1
395628109115502 UF-2-2
395628109115503 UF-2-3
395628109120101 AG-10
395628109162901 AG-4
395629109120001 UF-3-1
395629109120002 UF-3-2
395630109120101 UF-4-1
395630109120102 UF-4-2
395630109120103 UF-4-3
395633109115701 UF-1
395634109120601 UF-5-1
395634109120602 UF-5-2
395635109101501 G-10
395635109125801 X-11 (EXPLORATION HOLE)
395638109111601 X-4 (EXPLORATION HOLE)
395651109140201 AG-6-1 LOWER
395651109140202 AG-6-2 UPPER
395657109135701 AG-2-LOWER
395657109135702 AG-2-UPPER
395707109093101 G-8
395707109093102 G-8A
395710109093201 AG-8
395715109094301 X-3 (EXPLORATION HOLE)
395716109111801 ALLUVIAL TEST WELL
395720109110001 X-2 (EXPLORATION HOLE)
395733109095401 P-1
395751109094501 G-17
395803109081101 AG-1-1 (LOWER)
395803109081102 AG-1-2 (UPPER)
395804109071701 HHC-1 LOWER
395804109071702 HHC-2 UPPER

Daily Values Format Description

The data format described herein pertain to water data collected on a continuous or once daily basis. In addition, some data reduced to monthly totals have been included. The files contain data for discharge, water temperature, specific conductance, sediment discharge, ground water levels, precipitation, and evaporation.

All data are identified by a station number (ID). Surface water stations are assigned a 8-digit USGS number, such as 09306395. These numbers increase in a downstream direction. Ground water stations are assigned a 15-digit number, corresponding to the latitude (6 digits) and longitude (7 digits) of the well location. The last 2 digits comprise a sequential number for sites within a 1-second grid.

Precipitation stations beginning with a "R" represent storage gauges and those beginning with a "AR" are automatic gauges. Evaporation pans are designated by the prefix "EVP".

Each record is identified by a 5-digit parameter code. A statistic code is also used to indicate the frequency of data collection or the extreme values for the day. Parameter codes and statistic codes that are used with daily values data are listed in Item 4.

Item 4. Parameter codes and Statistic Codes Used with Daily Values Data

Parameter Code	Description
00010	Water temperature (° C)
00060	Discharge (cfs)
00095	Specific Conductance (umhos @ 25°)
80154	Suspended Sediment Concentration (mg/l)
80155	Suspended Sediment Discharge (tons/day)
72019	Water Level (ft.below LSD)
00045	Precipitation, Accumulated (In.)
00197	Evaporation, Accumulated (In.)

Statistic Code	Description
00001	Maximum value for each day
00002	Minimum value for each day
00003	Mean value for each day
00006	Daily total
00007	Monthly total
00011	Once daily (Random hour)

Daily values data are formatted into 2 types of card images. The code card (identified by a "2" in column 1) is used to identify the type and frequency of the data that follows. The data card (identified by a "3" in column 1) is used to define the daily values data. The format of these cards are described in more detail in Figure 1 and 2.

Instantaneous Water Quality Format Description

The data format described herein pertain to water data collected or measured at a particular instant in time. Thus, each data set can be identified by a unique date and time. Although this file is primarily used for storage of water quality data, other types of data, such as stream bed material data and physical attributes pertaining to a measurement (i.e., cross section location, sampling depth, stream width) are also stored in the water quality file. Each of the various data types is identified by a parameter code. A list of parameter codes and names is contained in the attached computer listing.

Each data set is further identified by a station number (ID). Surface water stations are assigned an eight-digit USGS number, such as 09306395. These numbers increase in a downstream direction. Ground water stations (wells) are assigned a 15-digit number, corresponding to the latitude (six digits) and longitude (seven digits) of the well location. The last two digits comprise a sequential number for sites within a one-second grid. A listing of WRSP station IDs and station names is attached. The data sets are sorted by station ID, then by date and time. Each line of data is formatted as follows.

2. Revised Documentation of the Water Quality File (as of May 1984)

To remain compatible with the U.S. Geological Survey (USGS) water data storage system, WATSTORE, the WRSP Water Quality File was revised slightly during 1983. The reformatting of the data input allowed for additional codes to be associated with each hydrologic record (unique station, date, and time). Many of these new codes were assigned default values, when the USGS conversion to the new format was performed (April 18, 1983). These revisions pertain only to the Water Quality File. The daily values file remains unaffected by these changes, and therefore, the Daily Values format is not described here.

The Water Quality file is used for storage and retrieval of water data collected or measured at a particular instant in time. Thus, each data set can be identified by a unique date and time. Although this file is primarily used for storage of water quality data, other types of data, such as stream bed material data and physical attributes pertaining to a measurement (i.e., cross section location, sampling depth, stream width) are also stored in the water quality file. Each of the various data types is identified by a parameter code. A list of parameter codes and names is contained in the attached computer listing.

Each data set is further identified by a station number (ID). Surface water stations are assigned on eight-digit USGS number, such as 09306395. These numbers increase in a downstream direction. Ground water stations (wells) are assigned a 15-digit number, corresponding to the latitude (six digits) and longitude (seven digits) of the well location. The last two digits comprise a sequential number for sites within a one-second grid. A listing of WRSP station IDs and station names is attached. The data sets are sorted by station ID, then by date and time.

Data Formats. Two types of records exist for each data set stored in the Water Quality file. The first record is the analysis information record (or Type 1 record), where all the fixed information pertaining to a water sample or measurement is stored. Following the analysis information record, are one or more parameter description records (or Type * records), where all the variable information pertaining to the physical or chemical constitutents are stored.

I. The Type 1 Record or Analysis Information Record

Column Position	Identifier
1	Record Type (1)
2-16	Station ID, if the Station ID is less than 15 digits start in Col. 3
17	Medium Code
18-27	Begin Date Time
18-19	Begin Year, last two digits, use leading zero
20-21	Begin Month, use leading zero
22-23	Begin Day, use leading zero
24-27	Begin Time, 2400 system, use leading zero
28-35	End Date Time (for composites only)
28-29	End Month, use leading zero
30-31	End Day, use leading zero
32-35	End Time, 2400 system, use leading zero
36-43	Geologic Unit Code (optional)
44	Analysis Status Code
45	Analysis Source Code
46	Hydrologic Condition Code
47	Sample Type Code
48	Hydrologic Event Code
49-51	Not used
52-53	Left two digits of year (default = 19)
54-80	Not used.

Medium Codes. All analyses in the Water Quality File prior to conversion (April 18, 1983) were assigned a medium code of '0', Not determined.

Value	Medium
0	Not determined
A	Artificial
B	Solids (street sweepings, etc.)
C	Animal tissue
D	Plant tissue
E	Core material
F	Interstitial water
G	Soil
H	Bottom material
J	Sludge
K	Soil moisture
1	Suspended sediment
2	Leachate
3	Dry deposition
4	Landfill effluent
5	Elutriation
6	Ground water
7	Wet deposition
8	Bulk deposition
9	Surface Water

Geologic Unit Codes

These codes are optional. A complete list of geologic unit codes are published by the USGS. They are used to identify aquifer formations for entry of ground water data.

Analysis Status Codes. All analyses in the Water Quality File prior to conversion were assigned an analysis status code of '7', Reviewed, approved.

Value	Analysis Status
A	Not determined
H	Initial entry
1	Retrieved, in review
3	Data in temporary hold status
7	Reviewed, approved for transfer to EPA STORET
9	Proprietary data

Analysis Source Codes. All analyses in the Water Quality File prior to conversion were assigned an analysis status code of 'A', Not determined.

Value	Analysis Source
A	Not determined
B	Non-USGS field only
C	Non USGS lab only
D	Non-USGS lab and field
F	USGS field and non-USGS field
G	USGS field and non-USGS lab
H	USGS field and non-USGS lab and field
1	USGS lab and non-USGS field
2	USGS lab and non-USGS lab
3	USGS lab and non-USGS lab and field
4	USGS lab and field and non-USGS field
5	USGS lab and field and non-USGS lab
6	USGS lab and field and non-USGS lab and field
7	USGS field only
8	USGS lab only
9	USGS lab and field

Hydrologic Condition Codes. All analyses in the Water-Quality File prior to conversion were assigned a hydrologic condition code of 'A', Not determined.

Value	Hydrologic Condition
A	Not determined
4	Stable, low stage
5	Falling stage
6	Stable, high stage
7	Peak stage
8	Rising stage
9	Stable, normal stage

Sample Type Codes. All analyses in the Water-Quality File prior to conversion were assigned a sample type code of '9', Regular.

Value	Sample Type
A	Not determined
H	Composite (time)
1	Spike
3	Reference
5	Duplicate
7	Replicate
9	Regular

Hydrologic Event Codes. All analyses in the Water-Quality File prior to conversion were assigned a hydrologic event code of '9', Routine sample.

Value	Hydrologic Event
A	Spring breakup
B	Under ice cover
C	Glacial lake outbreak
D	Mudflow
E	Tidal action
H	Dambreak
1	Drought
2	Spill
3	Regulated flow
4	Snowmelt
5	Earthquake
6	Hurricane
7	Flood
8	Volcanic action
9	Routine sample

II. Type * Record or Parameter Description Record

Column	Identifier
1	Record Type (*)
2-26, 27-51, 52-76	Three 25-character fields for parameter description. Each set of parameter information must be separated by a comma. The format is: Pnnnnn=parameter value (K:Q:D:N), Where:

nnnnn = 5 digit parameter code (see attachment for identification of parameter codes)
K = Remark (optional but positional)
Q = Quality Assurance Code (optional but positional)
D = Method Code (optional but positional)
N = Precision code (optional but positional): if no precision code is given, the default precision stored in the parameter code dictionary will be assumed.

Remarks Codes. If necessary, each value may be qualified by use of a special remark code. A complete list of allowable remark codes follows. The remark code "U" is no longer allowable; a detection limit must be specified (i.e, <0.01)

Value	Description
Blank	Not remarked
0,E	Estimated value
1,<	Actual value is known to be less than the value shown
2,>	Actual value is known to be greater than the value show
3,M	Presence of material verified but not quantified
4,N	Presumptive evidence of presence of material
U	Material specifically analyzed for but not detected
B,K	Results based on colony count outside the acceptable range (Non-ideal colony count)

Quality Assurance Codes. All parameters in the Water-Quality File prior to conversion were assigned a quality assurance code of 'A', Not-reported.

Valid quality assurance codes are as follows:

A	Not reported
B	Non-USGS Lab value - failed edit
C	Non-USGS Field value - failed edit
D	USGS Lab value - failed edit
E	USGS Field value - failed edit
F	Non-USGS Lab value - in review
G	Non-USGS Field value - in review
H	USGS Lab value - in review
I	USGS Field value - in review
1	Non-USGS Lab value - approved for transfer to EPA STORE
2	Non-USGS Field value - approved for transfer to EPA STO
3	USGS Lab value - approved for transfer to EPA STORET
4	USGS Field value - aproved for transfer to EPA STORET
6	Non-USGS Lab value - proprietary
7	Non-USGS Field value - proprietary
8	USGS Lab value - proprietary
9	USGS Field value - proprietary

Method Code

Value	
Blank	Not used (as of May 1984). Method codes may be issued by the USGS at a later date.

Precision Code. The precision (number of significant figures and decimal positions) for reporting all data, including zero values, is established by the USGS Branch office related to the discipline of the data and is stored in the parameter code dictionary. The rules for precision are periodically updated by Water Resources Division memoranda and reflect chanes due to improvements in analytical techniques and publications standards.

However, the user has the option to enter his own precision value (a number from 1 to 9) by coding the last field of the parameter description. A precision in excess of 6 will have no meaning due to the storage of the data in floating point reresentation in the Water-Quality File.

Value

Blank

3. EXAMPLE OF FORMATTED DATA FROM THE WATER QUALITY FILE.

```
1 09306395      08210051600                 7AA99   19
$P80154=     642( :A: :3),P00061=     625( :A: :3),P     =         ( : : : ),
1 09306395      08210121100                 7AA99   19
$P00340=      21( :A: :2),P00076=      39( :A: :2),P00080=      10( :A: :2),
$P00095=     625( :A: :3),P00300=      11( :A: :2),P00340=      21( :A: :2),
$P00400=     7.9( :A: :2),P00403=     8.5( :A: :2),P00530=     157( :A: :3),
$P00556=       1(1:A: :1),P00607=    0.82( :A: :2),P00608=    0.08( :A: :2),
$P00613=    0.02(1:A: :2),P00623=     0.9( :A: :1),P00624=      44( :A: :2),
$P00625=      45( :A: :2),P00631=     0.1(1:A: :1),P00665=    0.08( :A: :2),
$P00666=    0.01(1:A: :2),P00671=    0.01(1:A: :2),P00691=     3.4( :A: :2),
$P00720=    0.01(1:A: :2),P00745=     0.5(1:A: :1),P00915=      62( :A: :2),
$P00925=      24( :A: :2),P00930=      47( :A: :2),P00931=     1.3( :A: :2),
$P00932=      29( :A: :2),P00935=     1.5( :A: :2),P00940=      21( :A: :2),
$P00945=     160( :A: :3),P00945=     160( :A: :3),P00950=     0.2( :A: :1),
$P00955=      14( :A: :2),P01000=       1( :A: :1),P01005=      43( :A: :2),
$P01010=       1(1:A: :1),P01020=      50( :A: :2),P01025=       1(1:A: :1),
$P01030=      10(1:A: :2),P01040=      10( :A: :2),P01046=      34( :A: :2),
$P01049=       2( :A: :1),P01056=       3( :A: :1),P01060=       1( :A: :1),
$P01065=       1(1:A: :1),P01075=       1( :A: :1),P01080=     740( :A: :3),
$P01085=       1(1:A: :1),P01090=      12( :A: :2),P01106=      20( :A: :2),
$P01130=      24( :A: :2),P01145=       2( :A: :1),P32730=       1(1:A: :1),
$P70300=     434( :A: :3),P71846=     0.1( :A: :1),P71886=    0.25( :A: :2),
$P71870=     0.1(1:A: :1),P90095=     682( :A: :3),P90410=     181( :A: :3),
$P00010=       8( :A: :1),P00020=      11( :A: :2),P00025=     639( :A: :3),
$P00028=   80020( :A: :5),P00061=     610( :A: :3),P00405=     4.4( :A: :2),
$P00301=     111( :A: :3),P     =         ( : : : ),P     =         ( : : : ),
1 09306395      08210291000                 7AA99   19
$P00010=       4( :A: :1),P00020=       2( :A: :1),P00025=     633( :A: :3),
$P00028=   80020( :A: :5),P00010=       4( :A: :1),P00020=       2( :A: :1),
$P00025=     633( :A: :3),P00028=   80020( :A: :5),P00061=     625( :A: :3),
$P00095=     700( :A: :3),P00300=    10.2( :A: :3),P00400=     8.1( :A: :2),
$P00403=     8.5( :A: :2),P00631=     0.1(1:A: :1),P00671=    0.01(1:A: :2),
$P00915=      62( :A: :2),P00925=      23( :A: :2),P00930=      45( :A: :2),
$P00931=     1.3( :A: :2),P00932=      28( :A: :2),P00935=     1.4( :A: :2),
$P00940=      21( :A: :2),P00945=     150( :A: :3),P00950=     0.3( :A: :1),
$P00955=      14( :A: :2),P90095=     663( :A: :3),P90410=     175( :A: :3),
$P01020=      40( :A: :2),P00301=      94( :A: :2),P00405=     2.7( :A: :2),
$P80154=     334( :A: :3),P     =         ( : : : ),P     =         ( : : : ),
```

5. WATER QUALITY PARAMETER FILE AS OF: 05/09/84 PAGE: 1

CODE	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	DEC	RNG
00003	DEPTH	OF	SAMPLE	(FT FM	SUR-	FACE)	1	
00004	STREAM	WIDTH	(FEET)				0	R
00008	LAB	ACCOUNT	NUMBER				0	
00009	X-SECT.	LOCATN.	FT. FM.	LT. BK	LOOKING	DNSTRM.	0	
00010	WATER	TEMPER-	ATURE	(DEG C)			1	
00020	AIR	TEMPER-	ATURE	(DEG C)			1	
00025	BARO-	METRIC	PRES-	SURE	(mm of	Hg)	0	
00027	COLLEC-	TING	AGENCY	CODE			0	
00028	ANALY-	ZING	AGENCY	CODE			0	
00029	PROJECT	NUMBER					0	
00042	ALTI-	TUDE,	FT ABV	MSL			0	
00045	PRECIP-	ITATION	ACCUMU-	LATED	(IN)		2	
00046	PRECIP-	ITATION	TOTAL,	(INCHES	/WEEK)		2	
00049	SURFACE	AREA	(MI2)				0	
00050	EVAP-	ORATION	TOTAL	(INCHES	/ DAY)		2	
00055	STREAM	VELOCI-	TY	MEAN	(FPS)		2	
00056	STREAM	AREA	(FT2)				0	R
00059	YIELD	OF	WELL	(GPM)			0	R
00060	MEAN	DAILY	STREAM-	FLOW	(CFS)		0	R
00061	STREAM	FLOW,	INSTAN-	TANEOUS	(CFS)		0	R
00062	NUMBER	OF	SEC-	TIONS			0	
00063	NUMBER	OF	SAMPLE	POINTS			0	
00064	STREAM	DEPTH,	MEAN	(FT)			1	
00065	GAGE	HEIGHT,	FEET	ABV	DATUM		2	
00066	GAGE	HEIGHT	CHANGE	(FEET)			2	
00070	TURBI-	DITY,	(JTU)				0	
00076	TURBI-	DITY	(NTU)				0	R
00080	COLOR	(PCU)					0	
00095	SPECI-	FIC	CONDUC-	TANCE	FIELD	(UMHOS)	0	
00197	EVAPOR-	ATION,	ACCUMU-	LATED	(IN)		2	
00300	DIS-	SOLVED	OXYGEN	(MG/L)			1	
00301	DIS-	SOLVED	OXYGEN,	% SAT-	URATION		0	
00310	OXYGEN	DEMAND	BIOCHEM	5-DAY	(MG/L)		1	
00335	OXYGEN	DEMAND	CHEM	(MG/L)			1	
00340	OXYGEN	DEMAND,	CHEM-	ICAL	(MG/L)		0	R
00349	OXYGEN	DEMAND	BIOCHEM	30-DAY	(MG/L)		1	
00400	PH,	FIELD	(UNITS)				1	
00403	PH,	LAB	(UNITS)				1	
00405	CARBON	DIOXIDE	DISS				1	

80020 USGS Central Lab
1028 USGS

5. WATER QUALITY PARAMETER FILE AS OF: 05/09/84 PAGE: 2

	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	DEC	RNG
0410	ALKA-	LINITY,	FIELD	(MG/L	AS	CACO3)	0	
[illegible]	ALKA-	LINITY,	CARBON-	ATE (MG	/L AS	CACO3)	0	
	ACIDITY	TOTAL	(MG/L	AS	CACO3)		0	
0440	BICAR-	BONATE	(MG/L	AS	HCO3)		0	
0445	CAR-	BONATE	(MG/L	AS	CO3)		0	
	DIS-	SOLVED	SOLIDS	RESIDUE	@ 105 C	(MG/L)	0	
0530	SUS-	PENDED	SOLIDS,	RESIDUE	@ 105 C	(MG/L)	0	
0550	OIL AND	GREASE,	TOTAL	(MG/L)			0	
	OIL AND	GREASE,	TOTAL	RECOV.	GRAVIM.	(MG/L)	0	
[illegible]	PERI-	PHYTON	BIOMASS	ASH	WEIGHT	(G/M2)	3	
0573	PERI-	PHYTON	BIOMASS	DRY	WEIGHT	(G/M2)	3	
[illegible]	NITRO-	GEN	TOTAL	(AS N)	(MG/L)		0	R
[illegible]	NITRO-	GEN	DISS	(AS N)	(MG/L)		0	R
0605	NITRO-	GEN,	ORGANIC	TOTAL	(AS N)	(MG/L)	0	R
[illegible]	NITRO-	GEN,	ORGANIC	DISS	(AS N)	(MG/L)	0	R
[illegible]	AMMONIA	DISS	(AS N)	(MG/L)			0	R
0610	AMMONIA	TOTAL	(MG/L	AS N)			3	
0613	NITRITE	DISS	(MG/L	AS N)			0	R
[illegible]	NITRITE	TOTAL	(AS N)	(MG/L)			3	
0618	NITRATE	DISS	(AS N)	(MG/L)			0	R
0620	NITRATE	TOTAL	(AS N)	(MG/L)			0	R
[illegible]3	AMMONIA	+ORGAN.	NITROGN	DISS.	(AS N)	(MG/L)	0	R
0624	AMMONIA	+ORGAN.	NITROGN	SUSP.	(AS N)	(MG/L)	0	R
0625	AMMONIA	+ ORG.	NITRO.	TOTAL	(MG/L	AS N)	0	R
[illegible]0	NITRITE	PLUS	NITRATE	TOTAL	(AS N)	(MG/L)	0	R
[illegible]1	NITRITE	PLUS	NITRATE	DISS	(MG/L	AS N)	0	R
0635	AMMONIA	+ORGAN.	NITROGN	TOTAL	IDETERM	MG/L -N	2	
[illegible]0	PHOS-	PHATE	TOTAL	(MG/L	AS	PO4)	0	R
[illegible]0	PHOS-	PHATE,	ORTHO,	DISS	AS PO4	(MG/L)	0	R
0665	PHOS-	PHORUS,	TOTAL	(MG/L	AS P)		0	R
[illegible]6	PHOS-	PHORUS	DISS.	(AS P)	(MG/L)		3	
[illegible]1	PHOS-	PHORUS,	ORTHO	DISS	(AS P)	(MG/L)	0	R
0680	TOTAL	ORGANIC	CARBON	(TOC)	(MG/L)		0	R
0681	ORGANIC	CARBON,	DIS-	SOLVED,	(MG/L)		0	R
[illegible]3	ORGANIC	CARBON	SUSP	TOTAL	(MG/L)		0	R
0685	TOTAL	IN-	ORGANIC	CARBON	(MG/L)		0	R
0689	SUS-	PENDED	ORGANIC	CARBON	(SOC)	(MG/L)	0	R
[illegible]6	HYDRO-	PHOBICS	TOTAL	(DOC)	(MG/L)		1	
0697	HYDRO-	PHOBICS	BASES	(DOC)	(MG/L)		1	

CODE	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	DEC	RNG
00698	HYDRO-	PHOBICS	ACIDS	(DOC)	(MG/L)		1	
00699	HYDRO-	PHOBICS	NEUTRAL	(DOC)	(MG/L)		1	
00700	HYDRO-	PHILICS	TOTAL	(DOC)	(MG/L)		1	
00701	HYDRO-	PHILICS	BASES	(DOC)	(MG/L)		1	
00702	HYDRO-	PHILICS	ACIDS	(DOC)	(MG/L)		1	
00703	HYDRO-	PHILICS	NEUTRAL	(DOC)	(MG/L)		1	
00720	CYANIDE	TOTAL	(MG/L	AS CN)			3	
00740	SULFITE	(MG/L	AS SO3)				0	R
00745	SULFIDE	TOTAL	(MG/L	AS S)			1	
00746	SULFIDE	DISS	(MG/L	AS S)			0	R
00900	HARD-	NESS	TOTAL	(MG/L	AS	CACO3)	0	
00902	HARD-	NESS,	NONCAR.	(MG/L	AS	CACO3)	0	
00915	CAL-	CIUM,	DISS	(MG/L)			0	R
00925	MAGNE-	SIUM,	DISS	(MG/L)			0	R
00930	SODIUM,	DISS	(MG/L)				0	R
00931	SODIUM	ADSORP-	TION	RATIO			0	R
00932	PERCENT	SODIUM					0	
00933	SODIUM	PLUS	POTAS-	SIUM,	DISS.	(MG/L)	0	R
00935	POTAS-	SIUM,	DISS	(MG/L)			0	R
00940	CHLOR-	IDE,	DISS	(MG/L)			0	R
00945	SUL-	FATE,	DISS	(MG/L)			0	R
00950	FLUOR-	IDE,	DISS	(MG/L)			1	
00955	SILICA,	DISS	(MG/L	AS	SIO2)		0	R
01000	ARSENIC	DISS	(UG/L)				0	
01001	ARSENIC	SUS-	PENDED	TOTAL	(UG/L)		0	
01002	ARSENIC	TOTAL	(UG/L)				0	
01003	ARSENIC	TOTAL	IN BOT-	TOM MA-	TERIAL	(UG/G)	0	
01005	BARIUM,	DISS	(UG/L)				0	
01006	BARIUM	SUSP.	RECOV-	ERABLE	(UG/L)		0	
01007	BARIUM,	TOTAL	(UG/L)				0	
01008	BARIUM,	TOTAL	IN BOT-	TOM MAT	(UG/G)		0	
01009	BARIUM,	TOTAL	RECOV-	ERABLE	(UG/L)		0	R
01010	BERYL-	LIUM,	DISS	(UG/L)			0	R
01011	BERYL-	LIUM,	SUS-	PENDED	(UG/L)		0	
01012	BERYL-	LIUM,	TOTAL	(UG/L)			0	
01013	BERYL-	LIUM,	TOTAL	IN BOT-	TOM MAT	(UG/G)	0	
01015	BISMUTH	DISS-	OLVED	(UG/L)			0	
01020	BORON,	DISS	(UG/L)				0	
01023	BORON,	TOTAL	IN BOT-	TOM MA-	TERIAL	(UG/G)	0	

CODE	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	DEC RNG
01025	CADMIUM	DISS	(UG/L)				1
01026	CADMIUM	SUS-	PENDED	RECOV-	ERABLE	(UG/L)	0
01027	CADMIUM	TOTAL	(UG/L)				0
01028	CADMIUM	TOTAL	IN BOT-	TOM MAT	(UG/G)		0
01029	CHRO-	MIUM,	TOTAL	IN BOT-	TOM MAT	(UG/G)	0
01030	CHRO-	MIUM,	DISS	(UG/L)			0
01031	CHRO-	MIUM,	SUS-	PENDED	RECOV.	(UG/L)	0
01034	CHROM-	IUM,	TOTAL	(UG/L)			0
01035	COBALT,	DISS	(UG/L)				0
01036	COBALT,	SUSP.	RECOV-	ERABLE	(UG/L)		0
01037	COBALT,	TOTAL	(UG/L)				0
01038	COBALT,	TOTAL	IN BOT-	TOM MAT	(UG/G)		0
01040	COPPER	DISS	(UG/L)				0
01041	COPPER,	SUS-	PENDED	RECOV-	ERABLE	(UG/L)	0
01042	COPPER,	TOTAL	(UG/L)				0
01043	COPPER,	TOTAL	IN BOT-	TOM MA-	TERIAL	(UG/G)	0
01044	IRON,	SUSP.	RECOV-	ERABLE	(UG/L)		0
01045	IRON	TOTAL	(AS FE)	(UG/L)			0
01046	IRON	DISS	(UG/L)				0
01049	LEAD	DISS	(UG/L)				0
01050	LEAD,	SUS-	PENDED	RECOV-	ERABLE	(UG/L)	0
01051	LEAD,	TOTAL	(UG/L)				0
01052	LEAD,	TOTAL	IN BOT-	TOM MA-	TERIAL	(UG/G)	0
01053	MANGAN-	ESE,	TOTAL	IN BOT-	TOM MAT	(UG/G)	0
01054	MAN-	GANESE	SUS-	PENDED	RECOV.	(UG/L)	0
01055	MANGAN-	ESE,	TOTAL	(UG/L)			0
01056	MAN-	GANESE,	DISS	(UG/L)			0
01060	MOLYB-	DENUM,	DISS	(UG/L)			0
01061	MOLYB-	DENUM,	SUS-	PENDED	(UG/L)		0
01062	MOLYB-	DENUM,	TOTAL	(UG/L)			0
01063	MOLYB-	DENUM,	TOTAL	IN BOT-	TOM MAT	(UG/G)	0
01065	NICKEL,	DISS	(UG/L)				0
01066	NICKEL,	SUS-	PENDED	RECOV-	ERABLE	(UG/L)	0
01067	NICKEL,	TOTAL	(UG/L)				0
01068	NICKEL,	TOTAL	IN BOT-	TOM MAT	(UG/G)		0
01075	SILVER,	DISS	(UG/L)				1
01076	SILVER,	SUS-	PENDED	RECOV-	ERABLE	(UG/L)	0
01077	SILVER,	TOTAL	(UG/L)				0
01078	SILVER,	RECOV.	FM	BOTTOM	MAT	(UG/G)	0

CODE	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	DEC	RNG
00698	HYDRO-	PHOBICS	ACIDS	(DOC)	(MG/L)		1	
00699	HYDRO-	PHOBICS	NEUTRAL	(DOC)	(MG/L)		1	
00700	HYDRO-	PHILICS	TOTAL	(DOC)	(MG/L)		1	
00701	HYDRO-	PHILICS	BASES	(DOC)	(MG/L)		1	
00702	HYDRO-	PHILICS	ACIDS	(DOC)	(MG/L)		1	
00703	HYDRO-	PHILICS	NEUTRAL	(DOC)	(MG/L)		1	
00720	CYANIDE	TOTAL	(MG/L	AS CN)			3	
00740	SULFITE	(MG/L	AS SO3)				0	R
00745	SULFIDE	TOTAL	(MG/L	AS S)			1	
00746	SULFIDE	DISS	(MG/L	AS S)			0	R
00900	HARD-	NESS	TOTAL	(MG/L	AS	CACO3)	0	
00902	HARD-	NESS,	NONCAR.	(MG/L	AS	CACO3)	0	
00915	CAL-	CIUM,	DISS	(MG/L)			0	R
00925	MAGNE-	SIUM,	DISS	(MG/L)			0	R
00930	SODIUM,	DISS	(MG/L)				0	R
00931	SODIUM	ADSORP-	TION	RATIO			0	R
00932	PERCENT	SODIUM					0	
00933	SODIUM	PLUS	POTAS-	SIUM,	DISS.	(MG/L)	0	R
00935	POTAS-	SIUM,	DISS	(MG/L)			0	R
00940	CHLOR-	IDE,	DISS	(MG/L)			0	R
00945	SUL-	FATE,	DISS	(MG/L)			0	R
00950	FLUOR-	IDE,	DISS	(MG/L)			1	
00955	SILICA,	DISS	(MG/L	AS	SIO2)		0	R
01000	ARSENIC	DISS	(UG/L)				0	
01001	ARSENIC	SUS-	PENDED	TOTAL	(UG/L)		0	
01002	ARSENIC	TOTAL	(UG/L)				0	
01003	ARSENIC	TOTAL	IN BOT-	TOM MA-	TERIAL	(UG/G)	0	
01005	BARIUM,	DISS	(UG/L)				0	
01006	BARIUM	SUSP.	RECOV-	ERABLE	(UG/L)		0	
01007	BARIUM,	TOTAL	(UG/L)				0	
01008	BARIUM,	TOTAL	IN BOT-	TOM MAT	(UG/G)		0	
01009	BARIUM,	TOTAL	RECOV-	ERABLE	(UG/L)		0	R
01010	BERYL-	LIUM,	DISS	(UG/L)			0	R
01011	BERYL-	LIUM,	SUS-	PENDED	(UG/L)		0	
01012	BERYL-	LIUM,	TOTAL	(UG/L)			0	
01013	BERYL-	LIUM,	TOTAL	IN BOT-	TOM MAT	(UG/G)	0	
01015	BISMUTH	DISS-	OLVED	(UG/L)			0	
01020	BORON,	DISS	(UG/L)				0	
01023	BORON,	TOTAL	IN BOT-	TOM MA-	TERIAL	(UG/G)	0	

CODE	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	DEC	RNG
01080	STRON-	TIUM,	DISS	(UG/L)			0	
01085	VANA-	DIUM,	DISS	(UG/L)			0	R
01090	ZINC,	DISS	(UG/L)				0	
01091	ZINC,	SUS-	PENDED	(UG/L)			0	
01092	ZINC,	TOTAL	(UG/L)				0	
01093	ZINC,	TOTAL	IN BOT-	TOM MAT	(UG/G)		0	
01095	ANTI-	MONY,	DISS.	(UG/L)			0	
01100	TIN	DISS	(UG/L)				0	
01105	ALUM-	INUM,	TOTAL	(UG/L)			0	
01106	ALUM-	INUM	DISS	(UG/L)			0	
01107	ALUM-	INUM,	SUS-	PENDED	RECOV.	(UG/L)	0	
01109	ALUMI-	NUM,	RECOV	FM BOT	MAT	(UG/G)	0	
01120	GALLIUM	DISS.	(UG/L)				0	
01125	GER-	MANIUM	DISS	(UG/L)			0	
01130	LITHIUM,	DISS	(UG/L)				0	
01131	LITHIUM	SUS-	PENDED	RECOV-	ERABLE	(UG/L)	0	
01132	LITHIUM	TOTAL	(UG/L)				0	
01145	SELE-	NIUM	DISS	(UG/L)			0	
01146	SELE-	NIUM,	SUS-	PENDED	TOTAL	(UG/L)	0	
01147	SELEN-	IUM,	TOTAL	(UG/L)			0	
01148	SELEN-	IUM,	TOTAL	IN BOT-	TOM MAT	(UG/G)	0	
01150	TI-	TANIUM	DISS	(UG/L)			0	
01160	ZIR-	CONIUM	DISS	(UG/L)			0	
01170	IRON,	TOTAL	IN BOT-	TOM MAT	(UG/G)		0	
01515	GROSS	ALPHA	DISS	(PCI/L	AS	U-NAT)	0	R
01516	GROSS	ALPHA,	SUSP.	TOTAL	(PCI/L	U NAT.)	0	R
03515	GROSS	BETA	DISS	(PCI/L	AS	CS-137)	0	R
03516	GROSS	BETA	SUSP	(PCI/L	AS	CS-137)	0	R
09511	RADIUM	226,	DISS.	RADON	METHOD	(PCI/L)	0	R
10001	TOTAL	ANIONS	(MEQ/L)				2	
10002	TOTAL	CATIONS	(MEQ/L)				2	
10003	ANION-	CATION	BALANCE	(PER-	CENT	DIFF.)	2	
22703	URANIUM	NATURAL	DISS.	(UG/L)			0	R
28403	CESIUM	137,	DISS.	(PCI/L)			0	R
31501	TOTAL	COLI-	FORM	M-ENDO	(COL.	/100ML)	0	
31616	FECAL	COLI-	FORM	M-FC	(COL.	/100ML)	0	
31625	FECAL	COLI-	FORM,	MF .7UM	(COL./	100ML)	0	
31673	FECAL	STREP-	TOCOCCI	KF AGAR	(COL.	/100ML)	0	
31679	FECAL	STREP-	TOCOCCI	M-ENTR.	(COL.	/100ML)	0	

CODE	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	DEC	RNG
32226	CHLORO-	PHYLL B	PERI-	PHYTON,	SPECTR.	(MG/M2)	3	
32228	CHLORO-	PHYLL A	PERI-	PHYTON,	SPECTR.	(MG/M2)	3	
32230	CHLORO-	PHYLL A	PHYTO-	PLANK-	TON		2	
32231	CHLORO-	PHYLL B	PHYTO-	PLANK-	TON		2	
32240	TANNIN	AND	LIGNIN	(MG/L)			0	R
32730	PHENOLS	TOTAL	(UG/L)				0	
38260	METHYL.	BLUE	ACTIVE	SUBSTAN	(MBAS)	(MG/L)	0	R
39250	NAPHTH-	ALENES,	POLY-	CHLORI-	NATED	(UG/L)	0	R
39330	ALDRIN	TOTAL	(UG/L)				0	R
39333	ALDRIN	IN	BOTTOM	MATRL.	(UG/KG)		0	R
39340	LINDANE	TOTAL	(UG/L)				0	R
39343	LINDANE	IN	BOTTOM	MATRL.	(UG/KG)		0	R
39350	CHLOR-	DANE	TOTAL	(UG/L)			0	R
39351	CHLOR-	DANE IN	BOTTOM	MATRL.	(UG/KG)		0	R
39360	DDD	TOTAL	(UG/L)				0	R
39363	DDD	IN	BOTTOM	MATRL.	(UG/KG)		0	R
39365	DDE	TOTAL	(UG/L)				0	R
39368	DDE	IN	BOTTOM	MATRL.	(UG/KG)		0	R
39370	DDT	TOTAL	(UG/L)				0	R
39373	DDT	IN	BOTTOM	MATRL.	(UG/KG)		0	R
39380	DIEL-	DRIN	TOTAL	(UG/L)			0	R
39383	DIEL-	DRIN	IN	BOTTOM	MATRL.	(UG/KG)	0	R
39390	ENDRIN	TOTAL	(UG/L)				0	R
39393	ENDRIN	IN	BOTTOM	MATRL.	(UG/KG)		0	R
39400	TOXA-	PHENE	TOTAL	(UG/L)			0	R
39403	TOXA-	PHENE	IN	BOTTOM	MATRL.	(UG/KG)	0	R
39410	HEPTA-	CHLOR	EPOXIDE	TOTAL	(UG/L)		0	R
39412	HEPTA-	CHLOR,	SUS-	PENDED	TOTAL	(UG/L)	0	R
39413	HEPTA-	CHLOR	IN	BOTTOM	MATRL.	(UG/KG)	0	R
39420	HEPTA-	CHLOR	EPOXIDE	TOTAL			0	R
39423	HEPTA-	CHLOR	EPOXIDE	IN BOT.	MATRL.	(UG/KG)	0	R
39516	PCB	TOTAL	(UG/L)				0	R
39519	PCB	IN	BOTTOM	MATRL.	(UG/KG)		0	
39730	2,4-D	TOTAL	(UG/L)				0	R
39731	2,4-D	IN	BOTTOM	MATRL.	(UG/KG)		0	
39740	2,4,5-T	TOTAL	(UG/L)				0	R
39741	2,4,5-T	IN	BOTTOM	MATRL.	(UG/KG)		0	
39760	SILVEX	TOTAL	(UG/L)				0	R
39761	SILVEX	IN	BOTTOM	MATRL.	(UG/KG)		0	

CODE	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	DEC	RNG
70300	TOTAL	DISS	SOLIDS,	RESIDUE	@ 180c	(MG/L)	0	
70301	TOTAL	DISS.	SOLIDS,	CALC.	SUM	(MG/L)	0	
70302	TOTAL	DISS	SOLIDS	(TONS /	DAY)		0	R
70303	TOTAL	DISS	SOLIDS	(TONS /	AC-FT)		0	R
70337	SUSP	SED	FALL	DIAM	% FINER	.002 MM	0	
70338	SUSP	SED	FALL	DIAM	% FINER	.004 MM	0	
70340	SUSP	SED	FALL	DIAM	% FINER	.016 MM	0	
70341	SUSP	SED	FALL	DIAM	% FINER	.031 MM	0	
70342	SUSP	SED	FALL	DIAM	% FINER	.062 MM	0	
70343	SUSP	SED	FALL	DIAM	% FINER	.125 MM	0	
70344	SUSP	SED	FALL	DIAM	% FINER	.250 MM	0	
70345	SUSP	SED	FALL	DIAM	% FINER	.500 MM	0	
70346	SUSP	SED	FALL	DIAM	% FINER	1.00 MM	0	
70347	SUSP	SED	FALL	DIAM	% FINER	2.00 MM	0	
70507	PHOSPH-	ORUS,	ORTHO,	TOTAL	(MG/L)		0	R
70950	BIOMASS	CHLORO-	PHYLL	RATIO,	PERIPH.	(UNITS)	2	
70953	CHLORO-	PHYLL-A	PHYTO-	PLANKTN	CHR-FLR	(UG/L)	0	R
70954	CHLORO-	PHYLL-B	PHYTO-	PLANKTN	CHR-FLR	(UG/L)	0	R
70955	CHLORO-	PHYLL-A	PERI-	PHYTON	CHR-SPE	(MG/M2)	3	
70956	CHLORO-	PHYLL-B	PERI-	PHYTON,	CHR-SPE	(MG/M2)	3	
71825	ACIDITY	TOTAL,	HEATED	(MG/L	AS H)		0	R
71830	HYDROX-	IDE	ION	(MG/L	AS OH)		0	
71846	AMMONIA	DISS	AS NH4	(MG/L)			0	R
71851	NITRATE	DISS	AS NO3	(MG/L)			0	R
71856	NITRITE	DISS	AS NO2	(MG/L)			0	R
71865	IODIDE,	DISS.	(MG/L)				0	R
71870	BROMIDE	DISS	(MG/L)				0	R
71886	PHOS-	PHORUS	TOTAL	(AS	PO4)	(MG/L)	0	R
71887	NITRO-	GEN,	TOTAL	(AS	NO3)	(MG/L)	0	R
71890	MERCURY	DISS	(UG/L)				1	
71895	MERCURY	SUS-	PENDED	RECOV-	ERABLE	(UG/L)	0	R
71900	MERCURY	TOTAL	(UG/L)				0	R
71921	MERCURY	TOTAL	IN BOT-	TOM MAT	(UG/G)		0	R
71922	CHROM-	IUM,	TOTAL	IN BOT-	TOM MAT	(UG/G)	0	R
71923	IRON,	RECOV	FM	BOTTOM	MAT	(UG/G)	0	R
72000	ELEVA-	TION	OF LAND	SURFACE	DATUM	(FEET)	2	
72001	DEPTH	OF	HOLE,	TOTAL	(FEET)		0	R
72005	SAMPLE	SOURCE	CODE				0	
72006	SAMP-	LING	CONDI-	TION	CODE		2	

40 Special

0.01 Dry Hole

4.00 Flowing well

5. WATER QUALITY PARAMETER FILE AS OF: 05/09/84 PAGE: 8

E	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	DEC	RNG
72008	DEPTH	OF	WELL	(FEET)			0	R
5	SAMPLE	DEPTH					0	
9	WATER	LEVEL	(FEET	BELOW	LSD)		2	
72020	ELEVA-	TION OF	STATIC	WATER	LEVEL	(FEET)	2	
0	URANIUM	DISS.	DIRECT	FLUORO-	METRIC	(PCI/L)	0	R
0	URANIUM	DISS.	EXTRACT	FLUORO-	METRIC	(UG/L)	0	R
80030	GROSS	ALPHA	DISS	(UG/L	AS	U-NAT)	0	R
80040	GROSS	ALPHA	SUSP	(UG/L	AS	U-NAT)	0	R
0	GROSS	BETA,	DISS	(PCI/L	AS SR90	/Y90)	0	R
80050	GROSS	BETA,	SUSP	(PCI/L	AS SR90	/Y90)	0	R
0154	SEDI-	MENT,	SUS-	PENDED	(MG/L)		0	
5	SUSP	SEDI-	MENT	DIS-	CHARGE	(T/DAY)	0	R
4	BED	MATRL.	SIEVE	DIAM.	% <.062	MM	1	
0165	BED	MATRL.	SIEVE	DIAM.	% <.125	MM	1	
E	BED	MATRL.	SIEVE	DIAM.	% < .25	MM	1	
7	BED	MATRL.	SIEVE	DIAM.	% < .50	MM	1	
0168	BED	MATRL.	SIEVE	DIAM.	% < 1.0	MM	1	
6	BED	MATRL.	SIEVE	DIAM.	% < 2.0	MM	1	
0	BED	MATRL.	SIEVE	DIAM.	% < 4.0	MM	1	
0171	BED	MATRL.	SIEVE	DIAM.	% < 8.0	MM	1	
0172	BED	MATRL.	SIEVE	DIAM.	% < 16	MM	1	
S	BED	MATRL.	SIEVE	DIAM.	% < 32	MM	1	
0174	BED	MATRL.	SIEVE	DIAM.	% < 64	MM	1	
1024	DRAIN-	AGE	AREA	(MI2)			0	R
8	POTAS-	SIUM 40	DISS	(PCI/L)			0	R
9209	ALGAL	GROWTH	POTEN-	TIAL,	USGS	(MG/L)	0	R
0095	SPECI-	FIC	CONDUC-	TANCE	LAB,	UMHSE25	0	
0	PH	LAB,	(UNITS)				1	
0	ALKALI-	NITY,	LAB	(MG/L	AS	CACO3)	0	
5902	NONCARB	HARD-	NESS	LAB	(MG/L	CACO3)	0	R

6. Stations and Parameters that have been revised for zero values to an acceptable detection limit

1974 to 1981 Water Year Data

Stations:

7 Surface Water	14 Ground Water Wells	
09306395	P-3	P-2 Upper
09306400	G-15	P-2 Lower
09306430	G-4A	G-10
09306605	G-14	AG-6-1
09306610	G-21	G-8A
09306625	G-5	P-1
09306700	G-11	AG-6-2

Parameter Codes:

01025	Cadmium, diss
01030	Chromium, diss
01040	Copper, diss
01075	Silver, diss
01090	Zinc, diss
01049	Lead, diss
01065	Nickel, diss
00608	Ammonia, Diss as N
00745	Sulfide, Total
00720	Cyanide, Total
00631	Nitrite & Nitrate, Diss.
00671	Ortho Phosphorus as P, Diss.
71890	Mercury, Diss.
01005	Barium diss.
01085	Vanadium, diss.
01106	Aluminum, diss
32730	Phenols
00556	Oil & Grease, total Recov. (1982 data only)
00550	Oil & Grease, total
00070	Turbidity (JTU)
01145	Selenium, Diss.
00080	Color

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Spring Annual Data
Format: j34_1, j44_1
Period Covered: 1977 - 1978, 1983

Parameter	Col.	Format	Units
% cover of annual vegetation	1	F6.2	%
dry biomass of annual vegetation	7	F6.2	g
sample number	13	I3	
location code	16	A4	
sample date	20	3I2	yy-mm-dd

Spring annual biomass and cover were sampled at 10 to 20 0.25m^2 quadrats placed at 10 meter intervals along a randomly placed transect each spring. After estimating total cover of annuals in a quadrat, the annual plants were collected, oven dried at 25° C for 14 days and weighed.

Raw data for 1975 & 1976 are not available. No data recorded for (G, J and S) of the four vegetation types in 1977 since growth annuals were negligible.

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Browse Utilization
Format: j34_2, j44_6
Period Covered: 1982, 1983

Parameter	Col.	Format	Units
shrub number	1	I2	
10 fields of leader growth measurements	3	10I3	mm
cage class 1 = no. cage	33	I1	
2 = caged			
form class (of available twigs)	34	I1	
1 = not hedged			
2 = light to moderately hedged			
3 = severely hedged			
4 = dead			
age class (based on stem diameter)	35	I1	
1 = seedling 1/8 inch or less			
2 = young 1/8 to 1/2 inch			
3 = mature over 1/2 inch			
4 = decadent 25% of crown dead			
% of leader utilized	36	F2.0	%
shrub taxon	38	A6	GGGSSS
location	44	A4	
sample date	48	3I2	yy-mm-dd

Browse utilization is determined by the code browse survey method.

Shrubs of each common species are sampled by locating the nearest plant to a random point on a permanent transect. Stem leader growth is recorded in millimeters for ten stems per plant. Plants may be caged to prevent browsing or uncaged. Form class records amount of hedging apparent on 2 - yr old wood immediately below the current leader. Age class is based on stem diameter. Leader use is recorded as a percent of twigs browsed.

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Vegetation Survey
Format: j34_3, j34_4, j34_5, j34_6
Period Covered: 1974, 1975, 1975, 1976

Parameters	Col.	Format	Units
height	1	I3	cm
cover	5	I5	$cm^2/4m^2$
density	10	I4	$no./4m^2$
taxon code	14	A6	GGGSSS
lifeform	20	I2	
plot no.	22	I2	
location code	24	A4	
date	28	3I2	yy-mm-dd

An extensive non-destructive vegetation survey was conducted four times during the baseline (Fall 1974 to Spring 1976). Average height, aerial cover and density were estimated for each species on $4m^2$ sample plots. Substrate cover was also estimated for bare ground, litter, standing dead litter and cryptogamic crust. Estimates of substrate cover include substrate surface under canopies of vegetation so that the sum of all covers recorded for a plot does not equal $4m^2$.

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Cryptogamic Community
Format: j34_7
Period Covered: 1981

Parameter	Col.	Format	Units
taxon code or % group id	1	A6	
commonness factor 1 = rare 2 = common 3 = abundant (for algae only)	7	I2	
20 fields of 3 spaces for frequency (0 - 4) of occurrence of a taxon in each of 20 quadrats (.5m X .5m) or for ocular estimate of cover of % groups in each quadrat	9	20I3	
location code	69	A4	
date	73	3I2	yy-mm-dd

In 1981, cover nad frequency of lichens, mosses and algae were recorded from 20 sample quadrats at each vegetation site, except riparian. The riparian sites were excluded for lack of a developed cryptogamic soil crust (due largely to frequent flooding disturbance and a relatively high vascular plant cover).

The total cover of cryptogamic species is usually estimated for the quadrat and the relative composition of mosses, algae, terricolous (soil) lichens, and saxicolous (rock) lichens are estimated. Then the frequency of each cryptogamic species is noted by recording the number of quarters of the quadrat containing each species. Algae are identified from a pooled soil sample from the 20 quadrats. The algae samples are cultured for 5 days in Bristols modified solution with a 12 hour/day light intensity of approximately 1,000 foot candles.

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Lichen Growth
Format: j34_8, j44_8
Period Covered: 1982, 1983

Parameter	Col.	Format	Units
taxon code	1	A6	GGGSSS
20 fields of 2 columns for presence 1 = present blank = absent 0 - 99% cover	7	20A2	
transect code	47	A2	NE,NW,SE
stand no. (1 - 7)	49	I2	
date	51	3I2	yy-mm-dd

Three transects radiating from the retort plant have been selected for monitoring the effects of air pollutants on the lichen community. Two transects (SE & NW) have been established in directions of prevailing winds and a third (NE) in a low frequency wind direction as a control. Sampling sites were located along each transect at distances of 0.5, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 6.0 miles from the retort site. Sites are numbered 1 - 7 in the same order.

At each site a 40m transect is permanently marked. Twenty quadrats (2cm X 100cm) are placed at 2m intervals along the transect. For each quadrat, a lichen species list is recorded and ocular estimates of total lichen cover and cover of lecanora peltata are made. A $10cm^2$ plot is marked and phototgraphed for future reference.

Lack of suitable habitat prevented establishment of a permanent transect at sites NE6, NE7, and SE7. Although cover and presence data will not be collected there, photographic plots will be used to evaluate any changes that may occur.

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Stem Leader Growth
Format: j34_9, j44_2, j44_3
Period Covered: 1977, 1983, 1983

Parameter	Col.	Format	Units
shrub no. at this location	1	I2	
20 measurements of leader length	3	20I3	mm
shrub taxon code	63	A6	GGGSSS
location code	69	A4	
date	73	3I2	yy-mm-dd

Shrub leader growth is measured in early October at each sample site. Each year, a new 200m transect is located by a random starting point and direction. At each ten meter interval, the nearest shrub is sampled by measuring 20 of the largest leaders. Current year's growth is delineated by the bud scars from the previous year. If fewer than 20 leaders are found on the sampled shrub, zeros are entered for the leaders that are lacking. The sample shrubs are flagged to avoid resampling in succeeding years.

For some shrub species, other than sagebrush, only two leaders per plant were measured. Additional data fields are blank.

j44_3 is (other leader growth)

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Shrub Litter Production
Format: j34_10, j34_11, j44_5
Period Covered: 1981, 1982, 1983

Parameter	Col.	Format	Units
shrub taxon code	1	A6	GGGSSS
sample No.	7	I2	
height of Shrub	9	I3	cm
maximum diameter	12	I3	cm
perpendicular diameter	15	I3	cm
total litter dry weight	18	F5.0	0.1g
leaf litter dry weight	23	F5.0	0.1g
stem litter dry weight	28	F5.0	0.1g
seed litter dry weight	33	F5.0	0.1g
inflorescence litter dry weight	38	F5.0	0.1g
inseparable litter dry weight	43	F5.0	0.1g
catchment code 1 = $1m^2$ 2 = $0.5m^2$	48	I1	
location code	49	A4	
start date of litter accumulation	53	3I2	yy-mm-dd
finish date of litter accumulation	59	3I2	yy-mm-dd

Litter catchment traps were placed under individual plants of seven species. In 1981, litter traps were triangular, 0.5 m^2 in area and constructed entirely of 0.25 inch mesh screen ("hardware cloth"). They were placed under the shrub or tree canopy with one point of the triangle at the base of the plant. In 1982, the triangular traps were used only for junipers.

The new litter traps were 0.1m by 0.5m with 15m high wood sides to reduce windblown gains and losses and fine window screen bottoms to retain smaller litter particles while allowing drainage. The new traps were placed simply next to an individual shrub or in pairs with a shrub in-between. In most cases the $0.5cm^2$ or $1.0m^2$ area of the traps extended beyond the aerial extent of the shrub being sampled.

Many of the old style traps under Juniper increasing the sample area under a Juniper canopy to 1.0m. Accumulated litter is collected for each indidvidual plant, separated according to plant part, oven dried for 14 days at 25°C and weighed to the nearest 0.1g.

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Perennials and Late Annuals
Format: j34_12
Period Covered: 1975

Parameter	Col.	Format	Units
taxon code	1	A6	GGGSSS
dry biomass	7	F6.2	g
frequency of occurrence out of 100 samples	13	I3	
location code	16	A4	
date	20	3I2	yy-mm-dd

Perennial and late annual production is available for the baseline period (1974 - 1975) only as mean biomass per vegetation type. The means are based on 100 samples per vegetation type. No measure of the variance is available.

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Soil Microbiology
Format: j34_14, j34_15, j44_9
Period Covered: 1981 1982 1983

Parameter	Col.	Format	Units
% soil moisture	1	F3.1	%
ph	4	F4.2	
electrical conductivity	8	F4.2	uhos/cm
fungi	12	I4	m hyphae/g
bacteria	16	F4.1	10^6 cells/g soil
respiration	20	F4.1	10^{-4}m equiv CO_2 /g/hr
dehydrogenase	24	F4.1	mg formazan/ liter
organic carbon	28	F4.2	%
algae	32	I4	cells/g soil
depth code 1 = 0-5cm 2 = 5-15cm	36	I1	
sample no.	37	F5.1	
location code	42	A4	LLLL
date	46	3I2	yy-mm-dd
number of diatoms/g soil	52	I4	(added 1983

Soil microbiology samples are collected in conjunction with BRI's soil invertebrate samples and core taken from under the same shrub. Core is separated into two depth classes and core from each class of two consecutive core locations are pooled. The number of samples collected on each date at each location is thus related to the number of soil invertebrate samples collected. Samples collected on the first sample date (Apr. 1981) are not directly comparable to soil invertebrate samples as described above.

Samples are sealed in labeled plastic bags and transported in a cooler to the lab. Samples are then sieved through a 2mm screen and the coarse fragments discarded. If soil is too wet to sieve, rocks, and roots are hand picked before moisture analysis, bacterial counts, respiration and hydrogenase assays. All air dried sub samples are sieved prior to other analysis.

Organic matter content is determined by the Walkey-Black method. Soil moisture is determined by weighing approximately 20g of fresh soil before and after drying at 100°C to a constant weight. Electrical conductivity and ph are measured on the centrifuged supernatent of 40g of air dry soil in 40ml distilled water. Total bacteria counts are based on number of colony forming units per gram of dry soil with standard method of soil dilution and plating. Fungal counts are obtained from a 5g dry weight equivalent of fresh soil. Respiration is measured on a 10g dry weight equivalent of fresh soil. Dehydrogenase activity is determined from a 6g dry weight equivalent of fresh soil.

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Baseline Soil Microbiology
Format: j34_16
Period Covered: 1975 - 1976

Parameter	Col.	Format	Units
soil moisture	1	F3.0	0.1%
ph	4	F4.0	0.1
water potential	8	F4.0	-0.1 bars
fungi	12	F4.0	10^3 g soil
proteolytic act	16	F4.0	0.1% hydrolysis
respiration	20	F4.0	10^{-1}moles CO_2/g/min
dehydrog. act	24	F4.0	10^3mg formazon/ml
organic C	28	F4.0	0.01%
soil horizon no. 0 = litter layer 1 = first soil horizon	36	I1	
pit no.	37	I2	
N-fix potential	39	F3.0	(0.001 N_2/ ha/hr
nitrification potential at surface	42	F4.0	0.1 ugN/g soil NH_4
date	46	3I2	yy-mm-dd
aerobic bacteria	52	F3.0	10^5/g soil
anaerobic bacteria	55	F3.0	10^3/g soil
streptomycetes	58	F3.0	10^4/g soil
total NH_4-N	61	F4.0	0.1ugN/g soil
fixed NH_4-N	65	F4.0	0.1ugN/g soil
exchangeable NH_4-N	69	F3.0	0.1ugN/g soil
total-N	72	F3.0	0.01%
NO_3-N	75	F3.0	0.1ugN/g soil
ATP at surface	78	F3.0	10^{-3}ugATP /g soil

missing data code: -99

U-a/U-b Formats

Trasct: U-a/U-b
Monitoring Activity: Soil Analysis
Format: j34_17
Period Covered: 1981

Parameter	Col.	Format	Units
NH_4-N	1	F4.0	ugN/g soil
NO_2-N	5	F4.0	ugN/g soil
NO_3-N	9	F4.0	ugN/g soil
total-N	13	F4.0	%
sand	17	F3.0	get % silt
clay	20	F3.0	% by subtraction
depth code 1 = 0-5 cm 2 = 5-15 cm	23	I1	
sample no.	24	I5	
location code	29	A4	
date	33	3I2	yy-mm-dd

U-a/U-b Format

Tract: U-a/U-b
Monitoring Activity: Baseline Soil Analysis
Format: j34_18
Period Covered:

Parameter	Col.	Format	Units
pit no.	1	I2	
depth range	3	I6	cm
silt	10	I2	%
clay	12	I2	%
sand	14	I2	%
over 2 mm	16	I2	%
textural class code S = sandy SL = sandy loam LS = loamy sand	18	A3	
ph	21	F3.0	o.1 saturated paste
organic C	24	F3.0	o.1 %
electrical conductivity	27	F3.0	10^2mhos/cm at 25 C
$CaCO_3$	30	F3.0	o.1 %
moisture tension	33	F3.0	o.1 % at 1/3 atmos
moisture tension	36	F3.0	o.1 % at 1/3 atmos
saturation moisture	39	F3.0	%
available P	42	F3.0	o.1 ppm
extractable Mg NH_4AC	45	F3.0	me/100 g
extractable Na NH_4AC	48	F3.0	me/100 g
extractable K NH_4AC	51	F3.0	me/100 g
exchangeable Mg NH_4AC	54	F3.0	me/100 g
exchangeable Na NH_4AC	57	F3.0	me/100 g
exchangeable K NH_4AC	60	F3.0	me/100 g
water soluable Mg NH_4AC	63	F3.0	me/100 g
water soluable Na NH_4AC	66	F3.0	me/100 g
water soluable K NH_4AC	69	F3.0	me/100 g
NO_3-N	72	F3.0	o.1 ppm
total-N	75	F3.0	0.01%

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Sagebrush Leader Growth
Format: j34_19, j34_20
Period Covered: 1975 - 1976

Two datasets are presented as brief, labeled tables containing mean ± sd. for sagebrush leader growth at each sampling site. No raw data available.

Format: jkc034_21

A summary listing of valid vascular plant taxon codes.

Format: jkc034_22

A summary listing of all location codes and their corresponding UTM coordinates.

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Chemical Composition of Sagebrush Leader
Format: j44_4
Period Covered: 1981 - 1983

Parameter	Col.	Format	Units
molybdenum content	1	F4.2	ppm
arsenic content	5	F2.1	ppm
sodium content	7	F4.3	%
calcium content	11	F4.3	%
magnesium content	15	F4.0	ppm
SO_4 content	19	F3.2	%
mercury content	22	F3.0	ppm
cadmium content	25	F3.1	ppm
boron content	28	F3.0	ppm
shrub taxon	38	A6	GGGSSS
location	44	A4	
sample date	48	3I2	yy-mm-dd

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Perennial & Late Annuals (Steep Sloping Areas)
Format: j34_13
Period Covered: 1976

Parameter	Col.	Format	Units
taxon code	1	A6	GGGSSS
% cover	7	F6.4	%
plot no.	13	I3	
location code	16	A4	
date	20	3I2	yy-mm-dd

Twelve 4 X 25m plots were sampled. Percent cover was estimated for 25 - 50 quadrats per plot with the mean value reported.

U-a/U-b Formats

Tract: U-a/U-b
Monitoring Activity: Caged Measurements for Browse Utilization Study
Format: j44_7
Period Covered: 1983

Parameter	Col.	Format	Units
shrub number	1	I2	
twenty fields of leader growth	3	20I3	mm
cage class	63	A1	
shrub taxon	64	A7	GGGSSS
location	70	A4	
sample date	74	3I2	yy-mm-dd