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CHEMICAL ANALYSES OF THERMAL SPRINGS AND WELLS IN OREGON

OPEN FILE REPORT O-79-3

UNIVERSITY OF UTAH
RESEARCH INSTITUTE
EARTH SCIENCE LAB.

Compiled by

U.S. Geological Survey

and

Oregon Department of Geology and Mineral Industries

1979

INTRODUCTION

Chemical analyses contained in this report were derived from specific samples collected of water, condensate, or gas from thermal surface springs or wells in Oregon. This information is the result of sampling by numerous individuals and agencies and reported on for this compilation by the U.S. Geological Survey and/or the Oregon Department of Geology and Mineral Industries.

The information presented is included in the Geothermal Resource Computer File (GEOTHERM). This file is stored on disk devices connected with the U.S. Geological Survey's 370-155 computer at Reston, Virginia.

Specific conductance is reported in $\mu\text{mhos/cm}$. Alkalinity is reported in either ppm or mg/l as CaCO_3 . Solute analyses as well as total dissolved solids are reported in either ppm or mg/l as noted. Water temperatures are Celsius ($^{\circ}\text{C}$).

The first 144 records (T-2) are shown in a different format than the remainder (T-5). Pages for T-2 are numbered from 1 to 139; pages for T-5 are numbered from 1 to 30. Even though the two formats share identical page numbers, chemical analyses have not been repeated.

Counties are listed alphabetically for each format and localities are treated similarly. Some springs may have more than one locality, and this is reflected on the data sheets.

This report will be updated from time to time by the acquisition of additional water chemistry data as obtained from newly identified thermal surface and well sources.

T-2

RECORD 00001

RECORD IDENTIFICATION
 RECORD NO.... 0015444
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... BOWEN, RICHARD G.
 DATE..... 77/09
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. FISHER HOT SPRING
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 44-58. N

COUNTRY NAME..... UNITED STATES
 COUNTY..... BAKER
 LONGITUDE..... 118-04. W

TOWNSHIP RANGE SECTION 1/4 1/4
 07S 38E 10

USGS WRD WELL-SPRING NUMBERING SYSTEM

07S/38E-10BA

MAP REFERENCE: CANYON CITY 1:250000, SUMPTER 1:62500

SAMPLE INFORMATION

SAMPLE NO..... 2125 ORE STATE BOARD OF HEALTH
 COLLECTION DATE..... 1972/06/14
 COLLECTOR(S)..... BROOKS, HOWARD
 POINT OF COLLECTION..... OVERFLOW FROM SPRING
 WATER SAMPLING TEMP.... 37.0
 WATER FLOW RATE..... 1893.

WATER ANALYSIS

W

ANALYSIS DATE..... 1972/07/18
 ANALYST(S)..... MOSE, ALLAN W.
 PH 1)..... 9.8
 SPECIFIC CONDUCTANCE.... 197.
 ALKALINITY..... 68.
 TOTAL DISSOLVED SOLIDS... 143.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
1.0	40.	N						
MG	CA	SR	BA	CA+MG				
L 0.1	1.4							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	L 0.03		L 0.03					
ZN	HG	B	H802	AL	PB	AS	S8	U
		2.8		0.07		L 0.005		
F	CL	BR	I					
0.4	1.8							
NH4	NO3	P04	SI02	S04	CU3	HC03		

38.9 12.

RECORD 00002

RECORD IDENTIFICATION
 RECORD NO.... 0015427
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... BOWEN, RICHARD G.
 DATE..... 77/09
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. KROPP HOT SPRING
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 45-00.8 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... BAKER
 LONGITUDE..... 117-53.1 W

TOWNSHIP RANGE SECTION 1/4 1/4
 06S 39E 25

USGS WRD. WELL-SPRING NUMBERING SYSTEM

06S/39E-25BD

MAP REFERENCE: NORTH POWDER 1:24000, GRANGEVILLE 1:250000

SAMPLE INFORMATION

SAMPLE NO..... 2202
 COLLECTOR(S)..... JOHNSON, SID
 POINT OF COLLECTION..... OVERFLOW
 WATER SAMPLING TEMP.... 43.0
 WATER FLOW RATE..... 19.

WATER ANALYSIS

ANALYSIS DATE..... 1972/11/16
 ANALYST(S)..... HOSE, ALAN W.
 PH 1)..... 7.3
 SPECIFIC CONDUCTANCE..... 445.
 ALKALINITY..... 43.
 TOTAL DISSOLVED SOLIDS... 392.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
L 0.1	93.	1.5							
MG	CA	SR	BA	CA+MG					
0.1	1.1								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	L 0.03		L 0.03						
ZN	HG	B	HB02	AL	PB	AS	SB	U	
		3.3		0.04		L 0.005			
F	CL	BR	I						
1.19	80.8								
NH4	N03	P04	SI02	S04	C03	HC03			

REFERENCES: ORE DEPT OF GEOL & MIN IND

RECORD 00009

RECORD IDENTIFICATION

RECORD NO.... 0015421
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. SWIM WARM SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 45-17.4 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... CLACKAMAS
 LONGITUDE..... 121-44.3 W

TOWNSHIP RANGE SECTION 1/4 1/4
 03S 8.5E 24

USGS WRD WELL-SPRING NUMBERING SYSTEM

03S/8.5E-24CA

MAP REFERENCE: MT. HOOD SOUTH 1:24000, THE DALLES 1:250000

OTHER LOCALITY INFORMATION: EAST SIDE OLD SWIMMING POOL

SAMPLE INFORMATION

SAMPLE NO..... WS-76-276
 COLLECTION DATE..... 1976/12/02
 COLLECTOR(S)..... BOWEN, RICHARD G.
 POINT OF COLLECTION..... EAST EDGE OF OLD POOL
 WATER SAMPLING TEMP.... 26.0
 WATER FLOW RATE..... 3.8
 WATER TREATMENT DATA: 2 LITER SAMPLES COLLECTED, 1 ACIDIFIED WITH HCL, 1 RAW WATER NON-FILTERED

WATER ANALYSIS

ANALYSIS DATE..... 1977/01/20
 ANALYST(S)..... BANERJEE, KALA C
 PH 1)..... 7.3
 2)..... 7.5 LAB
 SPECIFIC CONDUCTANCE..... 1300.
 ALKALINITY..... 179.
 TOTAL DISSOLVED SOLIDS... 988.

AT 26.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
0.13	136.	11.7							
MG	CA	SR	BA	CA+MG					
48.	60.								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	L 0.05		L 0.05						
ZN	HG	B	H802	AL	PB	AS	SB	U	
		0.32		L 0.02		L 0.005			

F	CL	BR	I			
0.23	161.					
O2	N2	CO2	SO2	H2S	H2	CH4
				T		
NH4	NO3	PO4	SI02	S04	CO3	HC03
0.05	L 0.02	0.09	72.3	205.		

OTHER SOLUTES & GASES H2S DETECTABLE
REFERENCES: URE DEPT OF ENVIRONMENTAL QUALITY ANALYSIS.

RECORD 00010

RECORD IDENTIFICATION
RECORD NO.... 0000781
CROSS INDEX NO..
RECORD TYPE.....

REPORTER
NAME..... SANFORD, LINDA
DATE..... 76/03
ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY
SAMPLE TYPE..... SPRING
NAME OF SAMPLE SOURCE.. EAST LAKE HOT SPRINGS
COUNTRY CODE.....
STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
COUNTY..... DESCHUTES

TOWNSHIP RANGE SECTION 1/4 1/4
21S 13E 29
MAP REFERENCE: CRESCENT 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1973/00/00
COLLECTOR(S)..... BARNES GROUP
WATER SAMPLING TEMP.... 62.0
WATER TREATMENT DATA: PRESSURE-FILTERED THROUGH A .45 MICROMETRE MEMBRANE FILTER, METAL ANALYSES ACIDIFIED,
DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1973/00/00
ANALYST(S)..... BARNES GROUP
PH 1)..... 6.49
SPECIFIC CONDUCTANCE..... 396.
ALKALINITY..... 184.

ISOTOPIC DATA

DEL O(18) OF WATER..... -9.42
DEL D OF WATER..... -76.2
DEL O(18) OF DISSOLVED S04... -9.42 0/00

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
0.01	32.	3.8	L 0.02	L 0.1	
MG	CA	SR	BA	CA+MG	
16.	38.	0.14	L 0.1		

0.15

58.

31.6

RECORD 00003

RECORD IDENTIFICATION
 RECORD NO.... 0000709
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. RADIUM HOT SPRINGS.
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 44-55.8 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... BAKER
 LONGITUDE..... 117-56.4 W

TOWNSHIP RANGE SECTION 1/4 1/4
 075 39E 28
 MAP REFERENCE: HAINES 1:24000, BAKER 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 58.
 WATER FLOW RATE..... 1100.
 WATER TREATMENT DATA: PRESSURE - FILTERED THROUGH A .45 MICROMETRE MEMBRANE, METAL ANALYSES ACIDIFIED, DILUTED.

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 9.56
 SPECIFIC CONDUCTANCE..... 290.

ISOTOPIC DATA

DEL O(18) OF WATER..... -17.85
 DEL D OF WATER..... -138.3

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.01	58.	1.1	L 0.02	L 0.1				
MG	CA	SR	BA	CA+MG				
0.1	1.5	L 0.05	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	L 0.02		L 0.02	L 0.01				
ZN	HG	B	HB02	AL	PB	AS	SB	U
	0.0005	0.42			L 0.06	L 0.01	L 0.2	
F	CL	BR	I					
1.3	17.	0.01	0.007					
NH4	NO3	PO4	SI02	S04	C03	HC03		
		0.092	78.	34.	27.	86.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00004

RECORD IDENTIFICATION

RECORD NO.... 0002206
CROSS INDEX NO..
RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
DATE..... 76/06
ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
NAME OF SAMPLE SOURCE.. RADIUM HOT SPRINGS
COUNTRY CODE.....
STATE/PROVINCE..... OREGON
LATITUDE..... 44-55.8 NCOUNTRY NAME..... UNITED STATES
COUNTY..... BAKER
LONGITUDE..... 117-56.4 WTOWNSHIP RANGE SECTION 1/4 1/4
07S 039E 28

OTHER LOCALITY INFORMATION: 1 MI. NORTH OF HAINES

SAMPLE INFORMATION

COLLECTION DATE..... 1955/05/01
WATER SAMPLING TEMP.... 57.2
WATER FLOW RATE..... 871.

WATER ANALYSIS W

PH 1)..... 9.7
SPECIFIC CONDUCTANCE..... 290.
TOTAL DISSOLVED SOLIDS... 244.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA 63.	K 2.0	RB	CS	NA+K				
MG N	CA 1.6	SR	BA	CA+MG					
MN+3	MN(TOT) N	FE+3	FE(TOT) N	CU					
ZN	HG	B	HBO2	AL N	PB	AS	SB	U L 0.0001	
F 1.0	CL 17.	BR	I						
NH4	NO3 0.2	PO4 N	SI02 80.	S04 31.	CO3 47.	HC03 5.			

REFERENCES: SCOTT AND BARKER, 1962

RECORD 00005

RECORD IDENTIFICATION

RECORD NO.... 0015420
CROSS INDEX NO..

REPORTER

NAME..... BOWEN, RICHARD G.
DATE..... 77/09

RECORD TYPE.....

ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. SAM-0 SPRING
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 44-46.6 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... BAKER
 LONGITUDE..... 117-48.5 W

TOWNSHIP RANGE SECTION 1/4 1/4
 09S 40E 16

USGS WRD WELL-SPRING NUMBERING SYSTEM
 09S/40E-16DA

MAP REFERENCE: BAKER 1:24000, BAKER 1:250000

SAMPLE INFORMATION

SAMPLE NO..... WS-77-022
 COLLECTION DATE..... 1977/02/11
 COLLECTOR(S)..... HULL, DONALD A.
 WATER SAMPLING TEMP.... 27.0

WATER ANALYSIS

ANALYSIS DATE..... 1977/04/27
 ANALYST(S)..... BANERJEE, KALA C.
 PH 1)..... Q 8.1
 SPECIFIC CONDUCTANCE..... 891.
 ALKALINITY..... 425.
 TOTAL DISSOLVED SOLIDS... 595.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
0.06	171.	12.2							
MG	CA	SR	BA	CA*MG					
6.	16.2								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	0.05		L 0.1						
ZN	HG	B	HB02	AL	PB	AS	SB	U	
		1.6		0.43		L 0.005			
F	CL	BR	I						
1.2	15.9								
NH4	NO3	PO4	SI02	S04	CO3	HC03			
0.5		0.09	67.6	0.7					

RECORD 00006

RECORD IDENTIFICATION

RECORD NO..... 0000697
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. AUSTIN HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 45-01.2 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... CLACKAMAS
 LONGITUDE..... 122-00.6 W

TOWNSHIP RANGE SECTION 1/4 1/4
 06S 007E 30

MAP REFERENCE: FISH CREEK MTN. 1:62500, VANCOUVER 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 86.0
 WATER FLOW RATE..... 950.
 DEPOSITS OR ALTERATION: TRAVERTINE
 WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH NITRIC ACID, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.63
 SPECIFIC CONDUCTANCE..... 1720.

ISOTOPIC DATA

DEL O(18) OF WATER..... -12.22
 DEL D OF WATER..... -94.5

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.4	300.	7.1	0.03	L 0.1				
MG	CA	SR	BA	CA+MG				
0.1	35.	0.33	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	L 0.02		L 0.02	L 0.01				
ZN	HG	B	H802	AL	PB	AS	SB	U
	0.0002	2.6			L 0.06	0.59	L 0.2	
F	CL	BR	I					
1.4	430.	2.	0.03					
NH4	NO3	PO4	SI02	S04	C03	HC03		
		0.061	81.	140.	L 1.	56.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00007

RECORD IDENTIFICATION
 RECORD NO.... 0015422

REPORTER
 NAME..... BOWEN, RICHARD G.

CROSS INDEX NO..
RECORD TYPE.....

DATE..... 77/08
ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY.

SAMPLE TYPE..... SPRING
NAME OF SAMPLE SOURCE.. BAGBY HOT SPRING
COUNTRY CODE.....
STATE/PROVINCE..... OREGON
LATITUDE..... 44-56.3 N

COUNTRY NAME..... UNITED STATES
COUNTY..... CLACKAMAS
LONGITUDE..... 122-10.4 W

TOWNSHIP RANGE SECTION 1/4 1/4
 07S 05E 26

USGS WRD WELL-SPRING NUMBERING SYSTEM

07S/05E-26BB
MAP REFERENCE: BATTLE AX 1:62500, SALEM 1:250000

SAMPLE INFORMATION

SAMPLE NO..... 1659
COLLECTION DATE..... 1970/03/02
COLLECTOR(S)..... BOWEN, RICHARD
POINT OF COLLECTION..... SPRING ORIFICE
WATER SAMPLING TEMP..... 57.2
WATER FLOW RATE..... 151.

WATER ANALYSIS

ANALYSIS DATE..... 1970/04/01
ANALYST(S)..... HOSE, A. W.
PH 1)..... Q 9.7
SPECIFIC CONDUCTANCE..... 290.
ALKALINITY..... 56.
TOTAL DISSOLVED SOLIDS... 240.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA 54.	K 0.8	RB	CS	NA+K				
MG 0.1	CA 3.7	SR	BA	CA+MG					
MN+3	MN(TOT)	FE+3 L 0.02	FE(TOT)	CU					
ZN	HG	B 0.6	HBO2	AL 0.2	PB	AS	SB	U	
F 0.68	CL 14.6	BR	I						
NH4 L 0.01	NO3	PO4 0.06	SI02 81.5	S04 30.7	CO3 36.	HC03			

RECORD 00008

RECORD IDENTIFICATION

REPORTER

RECORD NO.... 0015446
 CROSS INDEX NO..
 RECORD TYPE.....

NAME..... BOWEN, RICHARD G.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. GEOTHERMAL GRADIENT TEST NEAR AUSTIN HOT SPRINGS
 COUNTRY CODE..... COUNTRY NAME..... UNITED STATES
 STATE/PROVINCE..... OREGON COUNTY..... CLACKAMAS
 LATITUDE..... 45-02.2 N LONGITUDE..... 121-58.0 W

TOWNSHIP RANGE SECTION 1/4 1/4
 06S 07E 21

USGS WRD WELL-SPRING NUMBERING SYSTEM

06S/07E-21CD

MAP REFERENCE: HIGH ROCK 1:62500, THE DALLES 1:250000

SAMPLE INFORMATION

SAMPLE NO..... WS 76-226
 COLLECTION DATE..... 1976/08/13
 COLLECTOR(S)..... BOWEN, RICHARD G.
 WATER
 POINT OF COLLECTION.... OPEN HOLE PUMP TEST ZONES 120-130,400-450 FT
 WATER SAMPLING TEMP.... 35.6

WATER ANALYSIS

ANALYSIS DATE..... 1976/10/19
 ANALYST(S)..... JOHNSON, ELLEN M.
 PH 1)..... 7.6
 SPECIFIC CONDUCTANCE.... 282.
 ALKALINITY..... 133.
 TOTAL DISSOLVED SOLIDS... 795.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.01	48.	2.6						
MG	CA	SR	BA	CA+MG				
2.6	12.							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
			18.					
ZN	HG	B	HB02	AL	PB	AS	SB	U
		0.42		L 0.05		0.07		
F	CL	BR	I					
0.71	2.							
O2	N2	CO2	SO2	H2S	H2	CH4		
		6.						
NH4	NO3	PO4	SI02	S04	CO3	HC03		
0.11	0.39	0.02	36.	0.6				

MN+3	MN(TOT) 0.10	FE+3	FE(TOT) L 0.02	CU	0.01				
ZN	HG 0.0003	B	0.93	H802	AL	PB L 0.06	AS	SB L 0.2	U
F	CL 0.2	BR	0.4	I					
NH4	N03	P04	SI02 36.	S04 58.	C03	HC03			

OTHER SOLUTES & GASES O2+AR=6.

GAS ANALYSIS		G	
UNITS USED.....	VOLUME %		
CO2 56.	H2S	N2 30.	O2
H2	CH4 9.	C2H6	HE

OTHER GASES: O2 + AR--6.

REFERENCES: MARINER AND OTHERS, 1975

RECORD 00011

RECORD IDENTIFICATION

RECORD NO.... 0000719
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. BLUE MOUNTAIN HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 44-21.3 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... GRANT
 LONGITUDE..... 118-34.3 W

TOWNSHIP RANGE SECTION 1/4 1/4
 14S 34E 13

MAP REFERENCE: PRAIRIE CITY 1:62500, CANYON CITY 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 58.0
 WATER FLOW RATE..... 250.
 DEPOSITS OR ALTERATION: TRAVERTINE
 WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH NITRIC ACID, DILUTED
 OTHER SAMPLE INFORMATION: MIXED WATERS.

WATER ANALYSIS

W.

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.96
 SPECIFIC CONDUCTANCE..... 610.

ISOTOPIC DATA
 DEL O(18) OF WATER..... -16.13
 DEL D OF WATER..... -126.6

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
0.07	140.	3.3	L 0.02	L 0.1					
MG	CA	SR	BA	CA+MG					
0.2	2.2	L 0.05	L 0.1						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	L 0.02		L 0.02	L 0.01					
ZN	HG	B	HB02	AL	PB	AS	S8	U	
	0.0004	1.6			L 0.06	L 0.01	L 0.2		
F	CL	BR	I						
10.6	15.	0.04	0.01						
NH4	NO3	PO4	SI02	SO4	CO3	HC03			
		0.12	47.	11.	3.	323.			

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00012

RECORD IDENTIFICATION
 RECORD NO..... 0000715
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. RITTER HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 44-53.7 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... GRANT
 LONGITUDE..... 119-08.6 W

TOWNSHIP RANGE SECTION 1/4 1/4
 08S 30E 08
 MAP REFERENCE: RITTER 1:62500, CANYON CITY 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1973/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 41.0
 WATER FLOW RATE..... 130.
 DEPOSITS OR ALTERATION: NO DEPOSITS.
 WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH
 NITRIC ACID, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1973/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 9.68
 SPECIFIC CONDUCTANCE..... 319.

ISOTOPIC DATA

DEL O(18) OF WATER..... -14.83
 DEL D OF WATER..... -119.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.01	72.	0.82	L 0.02	L 0.1				
MG	CA	SR	BA	CA+MG				
L 0.05	1.4	L 0.05	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	L 0.02		L 0.02	0.01				
ZN	HG	B	H802	AL	PB	AS	S8	U
	0.0005	2.6		L 0.06			L 0.2	
F	CL	BR	I					
4.0	29.							
NH4	NO3	PO4	SI02	S04	C03	HC03		
			70.	9.	28.	86.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00013

RECORD IDENTIFICATION

RECORD NO.... 0000693
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. WEBERG HOT SPRING
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 44-00.0 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... GRANT
 LONGITUDE..... 119-38.8 W

TOWNSHIP RANGE SECTION 1/4 1/4
 18S 26E 18
 MAP REFERENCE: BURNS 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 46.0
 WATER FLOW RATE..... 40.
 DEPOSITS OR ALTERATION: TRAVERTINE

WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH NITRIC ACID, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 6.53
 SPECIFIC CONDUCTANCE..... 2570.

ISOTOPIC DATA

DEL O(18) OF WATER..... -15.14
 DEL D OF WATER..... -122.1

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.7	610.	36.	0.09	L 0.1				
MG	CA	SR	BA	CA+MG				
7.8	38.	2.1	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.06		0.24	0.18				
ZN	HG	B	HB02	AL	PB	AS	SB	U
	0.0003	15.		L 0.06	0.04	L 0.2		
F	CL	BR	I					
3.9	50.	0.1	0.1					
NH4	NO3	PO4	SI02	S04	C03	HC03		
		0.12	82.	13.	1.	1710.		

OTHER SOLUTES & GASES O2+AR=1.0

GAS ANALYSIS

UNITS USED..... VOLUME %

CO2	H2S	N2	O2
95.		1.	
H2	CH4	C2H6	HE
	2.		

OTHER GASES: O2+AR--1

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00014

RECORD IDENTIFICATION

RECORD NO.... 0000681
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING

NAME OF SAMPLE SOURCE.. ALVORD HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-32.57 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 118-31.63 W

TOWNSHIP RANGE SECTION 1/4 1/4
 34S 34E 32
 MAP REFERENCE: ADEL 11250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 76.0
 WATER FLOW RATE..... 500.
 DEPOSITS OR ALTERATION: SINTER, TRAVERTINE
 WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH
 NITRIC ACID, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 6.73
 SPECIFIC CONDUCTANCE..... 4590.
 ALKALINITY..... 1196.

ISOTOPIC DATA

DEL O(18) OF WATER..... -13.23
 DEL D OF WATER..... -123.6

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
2.1	960.	69.	0.33	0.2					
MG	CA	SR	BA	CA+MG					
2.2	13.	0.92	L 0.1						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	0.02		0.12	0.05					
ZN	HG	B	HB02	AL	PB	AS	SB	U	
	0.0001	30.		0.003	L 0.06	0.04	L 0.2		
F	CL	BR	I						
10.2	780.	2.	0.09						
NH4	NO3	PO4	SI02	S04	CO3	HC03			
0.90		0.43	120.	220.	1.	1196.			

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00015

RECORD IDENTIFICATION

RECORD NO.... 0015429
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... PETERSON, NORMAN V.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. ALVORD HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-32.57 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 118-31.63 W

TOWNSHIP RANGE SECTION 1/4 1/4
 34S 34E 32

OTHER LOCALITY INFORMATION: EAST SIDE OF ROAD 9 MILES NORTH OF ANDREWS

SAMPLE INFORMATION

SAMPLE NO..... 1009
 COLLECTION DATE..... 1955/11/09
 POINT OF COLLECTION..... MAIN ORIFICE
 WATER SAMPLING TEMP.... 82.2

WATER ANALYSIS

ANALYSIS DATE..... 1955/11/09
 ANALYST(S)..... HARRIS, JOHN
 PH 1)..... 7.3
 SPECIFIC CONDUCTANCE.... 4490.
 TOTAL DISSOLVED SOLIDS... 2910.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K				
	1040.	66.							
MG	CA	SR	BA	CA+MG					
1.0	13.								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	N		0.09						
ZN	HG	B	HB02	AL	PB	AS	SB	U	
		28.							0.0001
F	CL	BR	I						
7.2	760.								
NH4	NO3	PO4	SI02	S04	C03	HC03			
	1.1	4.5	135.	211.		1250.			

OTHER SOLUTES & GASES CHEMICAL-BETA-GAMMA(UUCURIES/L): RA=140.
 REFERENCES: USGS? FIELD NOTES

RECORD 00016

RECORD IDENTIFICATION

RECORD NO..... 0015441
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... PETERSON, NORMAN V.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

NAME OF SAMPLE SOURCE.. ALVORD HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-32.57' N

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 118-31.63 W

TOWNSHIP RANGE SECTION 1/4 1/4
 34S 34E 32
 MAP REFERENCE: ADEL 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 76.0
 WATER FLOW RATE..... 500.
 DEPOSITS OR ALTERATION: SINTER, TRAVERTINE
 WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH
 NITRIC ACID, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 6.73
 SPECIFIC CONDUCTANCE..... 4590.
 ALKALINITY..... 1196.

ISOTOPIC DATA

DEL O(18) OF WATER..... -13.23
 DEL D OF WATER..... -123.6

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
2.1	960.	69.	0.33	0.2					
MG	CA	SR	BA	CA+MG					
2.2	13.	0.92	L 0.1						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	0.02		0.12	0.05					
ZN	HG	B	HB02	AL	PB	AS	SB	U	
	0.0001	30.		0.003	L 0.06	0.04	L 0.2		
F	CL	BR	I						
10.2	780.	2.	0.09						
NH4	NO3	P04	SI02	S04	C03	HC03			
0.90		0.43	120.	220.	1.	1196.			

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00015

RECORD IDENTIFICATION

RECORD NO..... 0015429
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... PETERSON, NORMAN V.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING

NAME OF SAMPLE SOURCE.. ALVORD HOT SPRINGS

COUNTRY CODE.....

COUNTRY NAME..... UNITED STATES

STATE/PROVINCE..... OREGON

COUNTY..... HARNEY

LATITUDE..... 42-32.57 N

LONGITUDE..... 118-31.63 W

TOWNSHIP RANGE SECTION 1/4 1/4

34S 34E 32

OTHER LOCALITY INFORMATION: EAST SIDE OF ROAD 9 MILES NORTH OF ANDREWS

SAMPLE INFORMATION

SAMPLE NO..... 1009

COLLECTION DATE..... 1955/11/09

POINT OF COLLECTION..... MAIN ORIFICE

WATER SAMPLING TEMP.... 82.2

WATER ANALYSIS

ANALYSIS DATE..... 1955/11/09

ANALYST(S)..... HARRIS, JOHN

PH 1)..... 7.3

SPECIFIC CONDUCTANCE.... 4490.

TOTAL DISSOLVED SOLIDS... 2910.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K				
	1040.	66.							
MG	CA	SR	BA	CA+MG					
1.0	13.								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	N		0.09						
ZN	HG	B	HB02	AL	PB	AS	SB	U	
		28.							0.0001
F	CL	BR	I						
7.2	760.								
NH4	NO3	PO4	SI02	S04	C03	HC03			
	1.1	4.5	135.	211.		1250.			

OTHER SOLUTES & GASES CHEMICAL-BETA-GAMMA(UUCURIES/L): RA=140.
 REFERENCES: USGS? FIELD NOTES

RECORD 00016

RECORD IDENTIFICATION

RECORD NO..... 0015441

CROSS INDEX NO..

RECORD TYPE.....

REPORTER

NAME..... PETERSON, NORMAN V.

DATE..... 77/08

ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. CITY OF HINES WELL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-34.32 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 119-05.21 W

TOWNSHIP RANGE SECTION 1/4 1/4
 23S 30E 23
 MAP REFERENCE: BURNS 1:24000, BURNS 1:62500

SAMPLE INFORMATION

SAMPLE NO..... PNW 16607
 COLLECTION DATE..... 1968/07/24
 COLLECTOR(S)..... HANSON, BILL
 DEPTH..... 105.
 WATER SAMPLING TEMP.... 17.0
 WATER FLOW RATE..... 2555.
 WATER TREATMENT DATA: YIELD 675 GPM

WATER ANALYSIS

PH 1)..... 7.8
 SPECIFIC CONDUCTANCE..... 289.
 TOTAL DISSOLVED SOLIDS... 221.

AT 17.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA 35.	K 6.9	RB	CS	NA+K				
MG 5.7	CA 15.	SR	BA	CA+MG					
MN+3	MN(TOT)	FE+3	FE(TOT) 0.05	CU					
ZN	HG	B 0.53	H802	AL	PB	AS	SB	U	
F 0.5	CL 13.	BR	I						
NH4	N03 3.8	P04	SI02 60.	S04 18.	C03 N	HCO3 128.			

REFERENCES: LEONARD, 1970

RECORD 00017

RECORD IDENTIFICATION

RECORD NO.... 0000727
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. CRANE HOT SPRINGS
 COUNTRY CODE.....

COUNTRY NAME..... UNITED STATES

STATE/PROVINCE..... OREGON
 LATITUDE..... 43-26.43 N

COUNTY..... HARNEY
 LONGITUDE..... 118-38.35 W

TOWNSHIP RANGE SECTION 1/4 1/4
 24S 33E 34
 MAP REFERENCE: CRANE, ORE. (15.); BURNS, ORE. (2 DEG.)

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP..... 78.0
 WATER FLOW RATE..... 550.
 WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH NITRIC ACID, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 8.1
 SPECIFIC CONDUCTANCE..... 810.
 ALKALINITY..... 202.

ISOTOPIC DATA

DEL O(18) OF WATER..... -16.17
 DEL D OF WATER..... -133.5

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
0.09	170.	3.9	0.03	L 0.1					
MG	CA	SR	BA	CA+MG					
0.1	3.7	0.06	L 0.1						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	L 0.02		L 0.02	0.01					
ZN	HG	B	HB02	AL	PB	AS	SB	U	
	0.0005	7.9		0.022	L 0.06	0.09	L 0.2		
F	CL	BR	I						
9.0	79.	0.1	0.02						
NH4	NO3	PO4	SI02	S04	C03	HC03			
3.2		0.09	83.	86.	3.	202.			

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00018

RECORD IDENTIFICATION

RECORD NO.... 0015435
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... PETERSON, NORMAN V.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING

24S 32E 08

SAMPLE INFORMATION

SAMPLE NO..... USGS PNW 16829
 COLLECTION DATE..... 1968/09/12
 COLLECTOR(S)..... LEONARD & HANSON
 DEPTH..... 857.
 WATER SAMPLING TEMP.... 46.0
 WATER FLOW RATE..... 132.
 OTHER SAMPLE INFORMATION: STRONG SULFUR ODOR

WATER ANALYSIS

PH 1)..... 9.6
 SPECIFIC CONDUCTANCE..... 602.
 TOTAL DISSOLVED SOLIDS... 396.

AT 46.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
	135.	1.6							
MG	CA	SR	BA	CA+MG					
0.2	0.8								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
			0.20						
ZN	HG	B	HB02	AL	PB	AS	SB	U	
		4.11							
F	CL	BR	I						
12.	11.								
NH4	NO3	PO4	SI02	S04	CO3	HC03			
	0.2		72.	29.	84.	94.			

REFERENCES: LEONARD, 1970

RECORD 00020

RECORD IDENTIFICATION

RECORD NO.... 0015439
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... PETERSON, NORMAN V.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT, GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. HINES LUMBER CO. WELL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-32.24 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 119-04.53 W

TOWNSHIP RANGE SECTION 1/4 1/4
 23S 30E 35

MAP REFERENCE: BURNS 1:24000, BURNS 1:62500

SAMPLE INFORMATION

SAMPLE NO..... USGS PNW 16606
 COLLECTION DATE..... 1968/07/24
 COLLECTOR(S)..... HANSON, BILL
 DEPTH..... 61.
 WATER
 POINT OF COLLECTION.... SURFACE
 WATER SAMPLING TEMP.... 25.0
 WATER FLOW RATE..... 6624.

WATER ANALYSIS W
 PH 1)..... 7.8 AT 25.
 SPECIFIC CONDUCTANCE..... 222.
 TOTAL DISSOLVED SOLIDS... 180.

SOLUTE ANALYSIS (WATER)				UNITS USED..... MG/L				
LI	NA	K	RB	CS	NA+K			
	33.	4.						
MG	CA	SR	RA	CA+MG				
2.	11.							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
			0.02					
ZN	HG	B	HBO2	AL	PB	AS	SB	U
		0.38						
F	CL	BR	I					
0.5	7.							
NH4	NO3	PO4	SI02	S04	CO3	HC03		
	1.5		55.	14.	N	105.		

REFERENCES: LEONARD, 1970

RECORD 00021

RECORD IDENTIFICATION
 RECORD NO.... 0000782
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. HOT BORAX LAKE
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-19.7 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 118-36.5 W

TOWNSHIP RANGE SECTION 1/4 1/4
 37S 33E 15
 MAP REFERENCE: ADEL 1:250000

SAMPLE INFORMATION
 COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP

WATER SAMPLING TEMP.... 36.0
 WATER FLOW RATE..... 3500.
 DEPOSITS OR ALTERATION: SINTER
 WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH
 NITRIC ACID, DILUTED

WATER ANALYSIS W
 ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.28
 SPECIFIC CONDUCTANCE..... 2410.

ISOTOPIC DATA
 DEL O(18) OF WATER..... -11.57
 DEL D OF WATER..... -115.8

SOLUTE ANALYSIS (WATER)				UNITS USED..... MG/L				
LI	NA	K	RB	CS	NA+K			
0.65	500.	31.	0.23	0.1				
MG	CA	SR	BA	CA+MG				
0.3	16.	0.42	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.03		L 0.02	0.03				
ZN	HG	B	HB02	AL	PB	AS	SB	U
	0.0004	16.6		L 0.06	0.01	L 0.2		
F	CL	BR	I					
9.0	300.	2.	0.2					
NH4	NO3	P04	SI02	S04	C03	HC03		
		0.89	190.	350.	L 1.	420.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00022

RECORD IDENTIFICATION
 RECORD NO.... 0002208
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. HOT BORAX LAKE
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-19.7 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 118-36.5 W

TOWNSHIP RANGE SECTION 1/4 1/4
 37S 33E 15
 OTHER LOCALITY INFORMATION: 5 MI. NORTHEAST OF FIELDS

SAMPLE INFORMATION

SAMPLE NO..... LAB NO. ICC-46
 COLLECTION DATE..... 1953/09/03
 COLLECTOR(S)..... HEWETT, D. F.
 POINT OF COLLECTION..... SW SIDE OF HOT BORAX LAKE SPRINGS
 WATER
 POINT OF COLLECTION.... WEST SIDE OF SPRINGS
 WATER SAMPLING TEMP.... R 29.4

WATER ANALYSIS W
 ANALYSIS DATE..... 1953/09/25
 ANALYST(S)..... BERMAN, S. AND KRAMER, H.
 PH 1)..... 7.7
 SPECIFIC CONDUCTANCE..... 2227.
 TOTAL DISSOLVED SOLIDS... 1559.

SOLUTE ANALYSIS (WATER)		UNITS USED..... PPM					
LI	NA	K	RB	CS	NA+K		
L 1.5	488.	23.					
MG	CA	SR	BA	CA+MG			
N	17.						
ZN	HG	B	H802	AL	PB	AS	SB U
		17.9					
F	CL	BR	I				
8.	286.						
NH4	NO3	P04	SI02	S04	C03	HC03	
	2.5		184.	343.	N	424.	

REFERENCES: PERSONAL FILE OF DON WHITE, USGS, MENLO PARK

RECORD 00023

RECORD IDENTIFICATION
 RECORD NO.... 0002209
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. HOT BORAX LAKE
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-19.7 N
 TOWNSHIP RANGE SECTION 1/4 1/4
 37S 33E 15

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 118-36.5 W

SAMPLE INFORMATION
 SAMPLE NO..... LAB NO. 8743
 COLLECTION DATE..... 1953/09/03
 COLLECTOR(S)..... HEWETT, D. F.
 POINT OF COLLECTION..... HOT SPRING
 WATER

POINT OF COLLECTION.... MOST NORTHERN OF NUMEROUS SPRINGS EXTENDING 2000 FT.
 WATER SAMPLING TEMP.... R 73.9
 WATER FLOW RATE..... R 29.

WATER ANALYSIS W
 ANALYSIS DATE..... 1953/09/18
 ANALYST(S)..... MARTIN, R. N.
 PH 1)..... 7.6
 SPECIFIC CONDUCTANCE..... 2050.
 TOTAL DISSOLVED SOLIDS... 1440.

SOLUTE ANALYSIS (WATER)			UNITS USED..... PPM			
LI	NA	K	RB	CS	NA+K	
L 1.5	430.	27.				
MG	CA	SR	BA	CA+MG		
N	15.					
ZN	HG	B	HB02	AL	PB	AS SB U
		12.				
F	CL	BR	I			
7.0	255.					
NH4	NO3	PO4	SI02	S04	C03	HC03
	1.2		119.	319.	N	382.

COMMENTS: METHOD FOR LI DETECTION ONLY SENSITIVE TO 1 OR 2 PPM, SO UNABLE TO FIND LI IN THIS SAMPLE
 REFERENCES: PERSONAL FILE OF DON WHITE, USGS, MENLO PARK

RECORD 00024

RECORD IDENTIFICATION
 RECORD NO.... 0002210
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. HOT BORAX LAKE
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-19.7 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 118-36.5 W

TOWNSHIP RANGE SECTION 1/4 1/4
 37S 33E 15

SAMPLE INFORMATION
 SAMPLE NO..... LAB NO. 8742
 COLLECTION DATE..... 1953/09/03
 COLLECTOR(S)..... HEWETT, D. F.
 POINT OF COLLECTION..... HOT SPRING
 WATER
 POINT OF COLLECTION.... MOST SOUTHERN OF NUMEROUS SPRINGS EXTENDING 2000 FT.
 WATER SAMPLING TEMP.... 79.4

WATER ANALYSIS W
 ANALYSIS DATE..... 1953/09/18
 ANALYST(S)..... MARTIN, R. N.
 PH 1)..... 8.1
 SPECIFIC CONDUCTANCE..... 2160.
 TOTAL DISSOLVED SOLIDS... 1520.

SOLUTE ANALYSIS (WATER) UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K				
L 1.5	456.	30.							
MG	CA	SR	BA	CA+MG					
0.3	14.								
ZN	HG	B	HBO2	AL	PB	AS	SB	U	
		14.							
F	CL	BR	I						
7.0	270.								
NH4	NO3	PO4	SI02	S04	CO3	HC03			
	1.3		173.	339.	N	414.			

REFERENCES: PERSONAL FILE OF DON WHITE, USGS, MENLO PARK

RECORD 00025

RECORD IDENTIFICATION
 RECORD NO..... 0002211
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. HOT BORAX LAKE
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-19.7 N

TOWNSHIP RANGE SECTION 1/4 1/4
 37S 033E 15

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 118-36.5 W

SAMPLE INFORMATION
 COLLECTION DATE..... 1961/06/28
 COLLECTOR(S)..... VAN DENBURGH, A. S.
 POINT OF COLLECTION..... AT WEST BANK
 WATER SAMPLING TEMP.... 31.1
 OTHER SAMPLE INFORMATION: LAKE IS 200-300 YD IN DIAMETER AND 1-2 FT DEEP. MAN-MADE DRAIN FLOWS 2 CFS.

WATER ANALYSIS W
 PH 1)..... 7.8
 SPECIFIC CONDUCTANCE..... 2410.
 TOTAL DISSOLVED SOLIDS... 1680.

SOLUTE ANALYSIS (WATER) UNITS USED..... PPM

LI	NA 516.	K 27.	RB	CS	NA+K			
MG 0.5	CA 16.	SR	BA	CA+MG				
ZN	HG	B 18.	HB02	AL	PB	AS	SB	U ¹
F 9.7	CL 305.	BR	I					
NH4	NO3	PO4 2.2	SI02 193.	SO4 367.	CO3 N	HC03 450.		

REFERENCES: PERSONAL FILE OF DON WHITE, USGS, MENLO PARK

RECORD 00026

RECORD IDENTIFICATION

RECORD NO..... 0015437
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... PETERSON, NORMAN V.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. HOTCHKISS SPRING
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY

TOWNSHIP RANGE SECTION 1/4 1/4
 23S 30E 35
 MAP REFERENCE: BURNS 1:62500

SAMPLE INFORMATION

SAMPLE NO..... PNW 16836 USGS
 COLLECTION DATE..... 1968/09/13
 COLLECTOR(S)..... HANSON, W.B.
 POINT OF COLLECTION..... SEEP IN SPRING
 WATER SAMPLING TEMP..... 22.0

WATER ANALYSIS

ANALYSIS DATE..... W 1968/00/00
 PH 1)..... 7.5
 SPECIFIC CONDUCTANCE..... 210.
 TOTAL DISSOLVED SOLIDS... 165.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA 35.	K 3.2	RB	CS	NA+K
MG 1.4	CA 8.2	SR	BA	CA+MG	
MN+3	MN(TOT)	FE+3	FE(TOT)	CU	

			0.02					
ZN	HG	B	HB02	AL	PB	AS	SB	U
		0.23						
F	CL	BR	I					
0.6	7.							
NH4	NO3	P04	SI02	S04	C03	HC03		
	2.1		46.	16.	N	92.		

REFERENCES: LEONARD, 1970

RECORD 00027

RECORD IDENTIFICATION
 RECORD NO.... 0015438
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... PETERSON, NORMAN V.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. HOTCHKISS WELL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY

TOWNSHIP RANGE SECTION 1/4 1/4
 24S 30E 01
 MAP REFERENCE: BURNS 1:62500

SAMPLE INFORMATION
 SAMPLE NO..... USGS PNW 16835
 COLLECTION DATE..... 1968/09/11
 COLLECTOR(S)..... LEONARD AND HANSON
 DEPTH..... 172.
 WATER
 POINT OF COLLECTION.... SURFACE
 WATER SAMPLING TEMP.... 27.
 WATER FLOW RATE..... 2271.

WATER ANALYSIS W
 PH 1)..... 8.1
 SPECIFIC CONDUCTANCE..... 194.
 TOTAL DISSOLVED SOLIDS... 155.

AT 27.

SOLUTE ANALYSIS (WATER) UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
	31.	2.9						
MG	CA	SR	BA	CA+MG				
1.4	8.8							
ZN	HG	B	HB02	AL	PB	AS	SB	U
		0.06						
F	CL	BR	I					

0.5 5.
 NH4 NO3 P04 SI02 S04 C03 HC03
 1.1 46. 12. N 93.
 REFERENCES: LEONARD, 1970

RECORD 00028

RECORD IDENTIFICATION
 RECORD NO..... 0015434
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... PETERSON, NORMAN V.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. ISLAND RANCH WELL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-25.23 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 118-55.58 W

TOWNSHIP RANGE SECTION 1/4 1/4
 25S 32E 07
 MAP REFERENCE: LAWEN 1:250000

SAMPLE INFORMATION

SAMPLE NO..... PNW 17450
 COLLECTION DATE..... 1969/08/12
 COLLECTOR(S)..... LEONARD, A.
 DEPTH..... 410.
 WATER
 POINT OF COLLECTION... SURFACE
 WATER SAMPLING TEMP... 41.0
 WATER FLOW RATE..... 11.

WATER ANALYSIS

W
 ANALYST(S)..... USGS
 PH 1)..... 9.3
 SPECIFIC CONDUCTANCE..... 1450.
 TOTAL DISSOLVED SOLIDS... 957.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
	386.	4.4						
MG	CA	SR	BA	CA*MG				
0.2	0.5							
ZN	HG	B	H802	AL	PB	AS	SB	U
						N		
F	CL	BR	I					
19.	9.							
NH4	NO3	P04	SI02	S04	C03	HC03		
	0.1		54.	8.	144.	674.		

REFERENCES: LEONARD, 1970

RECORD 00029

RECORD IDENTIFICATION

RECORD NO.... 0000579
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. MICKEY SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-40.54 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 118-20.67 W

TOWNSHIP RANGE SECTION 1/4 1/4
 33S 35E 13
 MAP REFERENCE: ADEL 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 73.0
 WATER FLOW RATE..... 100.
 DEPOSITS OR ALTERATION: TRAVERTINE
 WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH
 NITRIC ACID, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 8.05
 SPECIFIC CONDUCTANCE..... 2490.

ISOTOPIC DATA

DEL O(18) OF WATER..... -13.42
 DEL D OF WATER..... -124.3

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
1.1	550.	35.	0.20	0.1					
MG	CA	SR	BA	CA+MG					
0.1	0.9	0.15	L 0.1						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	L 0.02		L 0.02	0.05					
ZN	HG	B	HBO2	AL	PB	AS	SB	U	
	0.0001	10.5		0.058	L 0.06	0.01	L 0.2		
F	CL	BR	I						
16.	240.	1.	0.09						

NH4 NO3 PO4 SI02 S04 CO3 HCO3
 0.39 0.74 200. 230. 11. 774.

OTHER SOLUTES & GASES AR+O2=18.

GAS ANALYSIS G
 UNITS USED..... VOLUME %
 CO2 H2S N2 O2
 23. 60.
 H2 CH4 C2H6 HE
 1.

OTHER GASES: O2 + AR = 18
 REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00030

RECORD IDENTIFICATION
 RECORD NO.... 0015433
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... PETERSON, NORMAN V.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. MICKEY SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-40.54 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 118-20.67 W

TOWNSHIP RANGE SECTION 1/4 1/4
 33S 35E 13

SAMPLE INFORMATION

SAMPLE NO..... 1711
 COLLECTION DATE..... 1970/07/01
 COLLECTOR(S)..... BOWEN, R. G.
 POINT OF COLLECTION..... NORTHERLY CLEAR POOL
 WATER SAMPLING TEMP.... 85.

WATER ANALYSIS

ANALYSIS DATE..... 1970/07/31
 ANALYST(S)..... AWH-OREGON DEPT OF QUALITY
 PH 1)..... 8.5
 SPECIFIC CONDUCTANCE.... 2200.
 ALKALINITY..... 630.
 TOTAL DISSOLVED SOLIDS... 1748.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI NA K RB CS NA+K
 L 0.2 478. 20.
 MG CA SR BA CA+MG

1.2	1.							
MN*3	MN(TOT) 0.02	FE*3	FE(TOT) 0.06	CU				
ZN	HG	B 9.2	HB02	AL L 0.01	PB	AS 2.5	SB	U
F 19.6	CL 230.	BR	I					
NH4 0.02	NO3 0.02	PO4 1.3	SI02 167.	SO4 205.	CO3	HC03		

REFERENCES: OREGON DEPT OF GEOLOGY FILES

RECORD 00031

RECORD IDENTIFICATION
 RECORD NO.... 0015457
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... MARINER, ROBERT H.
 DATE..... 79/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

KGRA..... ALVORD
 SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. MICKEY SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY

TOWNSHIP RANGE SECTION 1/4 1/4
 33S 035E 13
 MAP REFERENCE: ADEL 1:250000

SAMPLE INFORMATION

SOURCE TYPE..... W
 COLLECTION DATE..... 1976/09/09
 COLLECTOR(S)..... MARINER, R.H., AND EVANS, W.C.
 WATER SAMPLING TEMP.... 86.

DEPOSITS OR ALTERATION: SINTER
 WATER TREATMENT DATA: FIELD FILTERED, FIELD ALKALINITY DETERMINATION, SILICA DILUTION, FIELD AMMONIA DETERMINATION

WATER ANALYSIS

ANALYSIS DATE..... W 1977/01/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 8.31
 SPECIFIC CONDUCTANCE..... 2200.
 ALKALINITY..... 804.

AT 86.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
0.90	550.	31.	0.18	0.1	
MG	CA	SR	BA	CA+MG	
L 1.	1.0				

ZN	HG	R	HB02	AL	PB	AS	SB	U
		11.						
F	CL	BR	I					
16.	240.							
O2	N2	CO2	S02	H2S	H2	CH4		
				L 1.				
NH4	NO3	PO4	SI02	S04	CO3	HC03		
L 0.5			214.	210.				

REFERENCES: UNPUBLISHED DATA OF R. MARINER, U.S. GEOL. SURVEY, MENLO PARK

RECORD 00032

RECORD IDENTIFICATION

RECORD NO.... 0002219
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. NW OF HOT BORAX LAKE
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-19.7 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 118-36.5 W

TOWNSHIP RANGE SECTION 1/4 1/4
 37S 038E 15

SAMPLE INFORMATION

SAMPLE NO..... LAB NO. 358
 COLLECTION DATE..... 1957/05/27
 COLLECTOR(S)..... WHITE, DON
 WATER
 POINT OF COLLECTION.... HOTTEST SPRING 1000 FT NNW OF HOT LAKE FROM LARGE TRAVERTINE CONE.
 WATER SAMPLING TEMP.... 87.0
 WATER FLOW RATE..... 19.

WATER ANALYSIS

ANALYSIS DATE..... 1958/02/05
 ANALYST(S)..... SCHUCH, J. P.
 PH 1)..... 7.5
 SPECIFIC CONDUCTANCE..... 2190.
 TOTAL DISSOLVED SOLIDS... 1520.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K
N	426.	29.			
MG.	CA	SR	BA	CA+MG	
N	9.6	N			
MN+3	MN(TOT)	FE+3	FE(TOT)	CU	

	0.10		N					
ZN	HG	B	HB02	AL	PB	AS	SB	U
		15.		N		1.0		
F	CL	BR	I					
6.5	265.	1.8	0.2					
NH4	N03	P04	SI02	S04	C03	HC03		
0.69	N	1.4	160.	328.	N	425.		

REFERENCES: PERSONAL FILE OF DON WHITE, USGS, MENLO PARK

RECORD 00033

RECORD IDENTIFICATION
 RECORD NO.... 0015440
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... PETERSON, NORMAN V.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. O J THOMAS WELL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY

TOWNSHIP RANGE SECTION 1/4 1/4
 22S 32E 34
 MAP REFERENCE: HARNEY 1:250000

SAMPLE INFORMATION

SAMPLE NO..... USGS PNW 16831
 COLLECTION DATE..... 1968/09/13
 COLLECTOR(S)..... HANSON, W. B.
 DEPTH..... 305.
 WATER
 POINT OF COLLECTION... SURFACE
 WATER SAMPLING TEMP... 72.0
 WATER FLOW RATE..... R 95.
 OTHER SAMPLE INFORMATION: WATER USED FOR GREENHOUSE

WATER ANALYSIS

PH 1)..... 9.5
 SPECIFIC CONDUCTANCE..... 716.
 TOTAL DISSOLVED SOLIDS... 499.

AT 72.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
	157.	1.8			
MG	CA	SR	BA	CA+MG	
0.2	1.0				
MN+3	MN(TOT)	FE+3	FE(TOT)	CU	
			0.03		

ZN	HG	B	HB02	AL	PB	AS	SB	U
		3.99				0.06		
F	CL	RR	I					
2.8	38.							
NH4	NO3	PO4	SI02	SO4	CO3	HC03		
	N		89.	89.	92.	49.		

REFERENCES: LEONARD, 1970

RECORD 00034

RECORD IDENTIFICATION
 RECORD NO.... 0000683
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. UNNAMED HOT SPRING NEAR HOT BORAX LAKE
 COUNTRY CODE..... COUNTRY NAME..... UNITED STATES
 STATE/PROVINCE..... OREGON COUNTY..... HARNEY
 LATITUDE..... 42-20.14 N LONGITUDE..... 118-35.96 W

TOWNSHIP RANGE SECTION 1/4 1/4
 37S 33E 15

MAP REFERENCE: ADEL 1:250000, BORAX LAKE 1:24000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 96.0
 WATER FLOW RATE..... 15.
 WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH NITRIC ACID, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.30
 SPECIFIC CONDUCTANCE..... 2020.

ISOTOPIC DATA

DEL O(18) OF WATER..... -14.36
 DEL D OF WATER..... -125.4

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
0.51	450.	28.	0.18	0.1	
MG	CA	SR	BA	CA+MG	
0.3	14.	0.60	L 0.1		
MN+3	MN(TOT)	FE+3	FE(TOT)	CU	

	0.04		L 0.02	0.01				
ZN	HG	B	H802	AL	PB	AS	SB	U
	0.0008	15.		0.020	L 0.06		L 0.2	
F	CL	BR	I					
7.2	250.							
NH4	NO3	PO4	SI02	SO4	CO3	HC03		
0.17		1.2	160.	434.	4.	374.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00035

RECORD IDENTIFICATION
 RECORD NO.... 0000729
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. UNNAMED HOT SPRING NEAR HARNEY LAKE
 COUNTRY CODE..... UNITED STATES
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-10.9 N
 COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 119-06.2 W

TOWNSHIP RANGE SECTION 1/4 1/4
 27S 29.5E 36

MAP REFERENCE: CRANE 1:62500, BURNS 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 68.0
 WATER FLOW RATE..... 550.
 DEPOSITS OR ALTERATION: TRAVERTINE
 WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH NITRIC ACID, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.26
 SPECIFIC CONDUCTANCE..... 2970.

ISOTOPIC DATA

DEL D OF WATER..... -128.5

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
0.45	630.	13.	0.08	L 0.1	
MG	CA	SR	BA	CA+MG	
1.8	12.	0.11	L 0.1		

MN+3	MN(TOT) 0.04	FE+3	FE(TOT) 0.05	CU	0.02			
ZN	HG 0.0001	B 11.3	HB02	AL 0.005	PB L 0.06	AS 0.60	SB L 0.2	U
F 3.3	CL 590.	BR 29.	I 0.2					
NH4 1.8	NO3	PO4 0.092	SI02 92.	S04 140.	CO3 1.	HC03 566.		

OTHER SOLUTES & GASES 02*AR=1

GAS ANALYSIS G
UNITS USED..... VOLUME %

CO2 9.	H2S	N2 91.	O2
H2	CH4 1.	C2H6	HE

OTHER GASES: 02*AR--1

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00036

RECORD IDENTIFICATION
RECORD NO.... 0000731
CROSS INDEX NO..
RECORD TYPE.....

REPORTER
NAME..... SANFORD, LINDA
DATE..... 76/03
ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING	
NAME OF SAMPLE SOURCE.. UNNAMED HOT SPRING NEAR TROUT CREEK	
COUNTRY CODE.....	COUNTRY NAME..... UNITED STATES
STATE/PROVINCE..... OREGON	COUNTY..... HARNEY
LATITUDE..... 42-11.3 W	LONGITUDE..... 118-09.2 W

TOWNSHIP RANGE SECTION 1/4 1/4
39S 37E 16
MAP REFERENCE: ADEL 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
COLLECTOR(S)..... BARNES GROUP
WATER SAMPLING TEMP.... 52.0
WATER FLOW RATE..... 200.
WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH NITRIC ACID, DILUTED

WATER ANALYSIS W

ANALYSIS DATE..... 1972/00/00
ANALYST(S)..... BARNES GROUP

PH 1)..... 6.77
 SPECIFIC CONDUCTANCE..... 1168.

ISOTOPIC DATA
 DEL O(18) OF WATER..... -16.17
 DEL D OF WATER..... -127.4

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.68	270.	10.8	0.10	0.1				
MG	CA	SR	BA	CA+MG				
0.8	18.	0.30	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	L 0.02		0.08	0.03				
ZN	HG	B	HBO2	AL	PB	AS	SB	U
	0.0003	0.89		0.002	L 0.06		L 0.2	
F	CL	BR	I					
12.8	24.							
NH4	NO3	PO4	SI02	S04	C03	HC03		
0.026		0.06	105.	204.	1.	439.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00037

RECORD IDENTIFICATION

RECORD NO.... 0015428
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... PETERSON, NORMAN V.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. UNNAMED HOT SPRING NEAR TROUT CREEK
 COUNTRY CODE..... COUNTRY NAME..... UNITED STATES
 STATE/PROVINCE..... OREGON COUNTY..... HARNEY
 LATITUDE..... 42-11.3 N LONGITUDE..... 118-09.2 W

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 37E 16

SAMPLE INFORMATION

SAMPLE NO..... 1772
 COLLECTION DATE..... 1970/08/20
 COLLECTOR(S)..... BOWEN, R. G.
 POINT OF COLLECTION..... SPRING ORIFICE

WATER ANALYSIS

ANALYSIS DATE..... W 1970/11/18
 ANALYST(S)..... AWH OREGON DEPT. OF ENV. QUALITY
 PH 1)..... 8.3
 SPECIFIC CONDUCTANCE..... 1060.

ALKALINITY..... 360.
 TOTAL DISSOLVED SOLIDS... 893.

SOLUTE ANALYSIS (WATER) UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
L 0.5	230.	25.						
MG	CA	SR	BA	CA+MG				
0.9	18.4							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
		0.09	0.03					
ZN	HG	B	H802	AL	PB	AS	SB	U
		1.6		L 0.01		0.036		
F	CL	BR	I					
12.0	226.							
NH4	NO3	PO4	SI02	S04	C03	HC03		
	0.05	0.04	79.	177.				

RECORD 00038

RECORD IDENTIFICATION

RECORD NO..... 0015345
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
 DATE..... 78/06
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. WARM SPRING NEAR VENATOR
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-23.7 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... HARNEY
 LONGITUDE..... 118-18.52 W

TOWNSHIP RANGE SECTION 1/4 1/4
 23S 025S 16
 MAP REFERENCE: BURNS 1:250000
 OTHER LOCALITY INFORMATION: 3 MILES NORTH OF VENATOR

SAMPLE INFORMATION

COLLECTION DATE..... 1977/06/08
 WATER SAMPLING TEMP.... 41.0

WATER ANALYSIS W

PH 1)..... 9.1
 SPECIFIC CONDUCTANCE..... 650.
 TOTAL DISSOLVED SOLIDS... 1360.

SOLUTE ANALYSIS (WATER) UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
	100.	1.0			

MG 0.1	CA 2.7	SR	BA	CA+MG				
MN+3	MN(TOT) N	FE+3	FE(TOT) 0.03	CU				
ZN	HG	B 2.2	H802	AL	PB	AS 0.095	SB	U
F 1.1	CL 70.	BR	I					
NH4	NO3	P04 0.06	SI02 0 370.	S04 51.	C03 38.	HC03 57.		

OTHER SOLUTES & GASES NO2+NO3=.24, PHOSPHATE+ORTHO AS P=.06
 REFERENCES: GONTHIER AND OTHERS, 1977

RECORD 00039

RECORD IDENTIFICATION

RECORD NO.... 0015344
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... PETERSON, NORMAN V.
 DATE..... 77/09
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. JACKSON HOT SPRING
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-12.7 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... JACKSON
 LONGITUDE..... 122-43.7 W

TOWNSHIP RANGE SECTION 1/4 1/4
 38S 01E 31
 MAP REFERENCE: ASHLAND 1:62500

SAMPLE INFORMATION

COLLECTION DATE..... 1952/04/22
 WATER SAMPLING TEMP.... 35.0

WATER ANALYSIS W

ANALYSIS DATE..... 1952/00/00
 PH 1)..... 9.3
 SPECIFIC CONDUCTANCE.... 460.
 TOTAL DISSOLVED SOLIDS... 318.

AT 35.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA 95.	K 1.2	RB	CS	NA+K
MG 1.4	CA 2.8	SR	BA	CA+MG	
MN+3	MN(TOT)	FE+3	FE(TOT)	CU	

			0.07					
ZN	HG	B	H802	AL	PB	AS	SB	U
		2.9						
F	CL	BR	I					
2.0	80.							
NH4	NO3	PO4	SI02	S04	CO3	HC03		
	0.2		65.	26.	36.	11.		

REFERENCES: ROBISON, 1972

RECORD 00040

RECORD IDENTIFICATION
 RECORD NO..... 0015309
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. ABE BOEHM
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-03.83 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-45.67 W

TOWNSHIP RANGE SECTION 1/4 1/4
 40S 09E 28

SAMPLE INFORMATION

COLLECTION DATE..... 1974/05/30
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 47.
 WATER SAMPLING TEMP.... 25.0
 OTHER SAMPLE INFORMATION: DOMESTIC USE

WATER ANALYSIS

ANALYST(S)..... W USGS
 PH 1)..... 7.1
 SPECIFIC CONDUCTANCE..... 2700.

ISOTOPIC DATA

DEL O(18) OF WATER..... -7.38
 DEL D OF WATER..... -73.2

SOLUTE ANALYSIS (WATER)

				UNITS USED.....	MG/L
LI	NA	K	RB	CS	NA+K
0.16	480.	18.			
MG	CA	SR	BA	CA+MG	
47.	180.				
MN+3	MN(TOT)	FE+3	FE(TOT)	CU	
	2.4		0.1		

ZN	HG	B	H802	AL	PB	AS	SB	U
		1.4						
F	CL	BR	I					
0.2	170.							
NH4	NO3	PO4	SI02	S04	CO3	HC03		
			100.	300.	1.	1460.		

REFERENCES: SAMMEL, 1976

RECORD 00041

RECORD IDENTIFICATION
 RECORD NO.... 0015325
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. ALFRED JACOBSEN
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-07.58 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-44.42 W

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 09E 34

SAMPLE INFORMATION

COLLECTION DATE..... 1974/05/20
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 47.
 WATER SAMPLING TEMP.... 30.0
 OTHER SAMPLE INFORMATION: DOMESTIC USE

WATER ANALYSIS

ANALYST(S)..... USGS
 PH 1)..... 7.6
 SPECIFIC CONDUCTANCE..... 290.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
	49.	12.						
MG	CA	SR	BA	CA+MG				
2.4	5.7							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.050		0.12					
ZN	HG	B	H802	AL	PB	AS	SB	U
		0.05				0.001		
F	CL	BR	I					

DEPTH..... 250.
 WATER SAMPLING TEMP.... 20.0
 OTHER SAMPLE INFORMATION: DOMESTIC AND STOCK USE

WATER ANALYSIS W
 ANALYST(S)..... USGS
 PH 1)..... 7.7
 SPECIFIC CONDUCTANCE..... 245.

SOLUTE ANALYSIS (WATER)				UNITS USED.....				MG/L
LI	NA	K	RB	CS	NA+K			
	19.	6.4						
MG	CA	SR	BA	CA+MG				
13.	9.1							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.030		0.04					
ZN	HG	B	H802	AL	PB	AS	SB	
		0.02			N	N	U	
F	CL	BR	I					
N	4.2							
NH4	NO3	PO4	S102	S04	C03	HC03		
			26.	6.4	N	140.		

REFERENCES: SAMMEL, 1976

RECORD 00044

RECORD IDENTIFICATION
 RECORD NO.... 0015327
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. CLAUDE SHUCK
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-11.33 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-39.83 W

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 10E 08

SAMPLE INFORMATION
 COLLECTION DATE..... 1974/05/30
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 323.
 WATER SAMPLING TEMP.... 24.0
 OTHER SAMPLE INFORMATION: DOMESTIC SUPPLY

WATER ANALYSIS W

ANALYST(S)..... USGS
 PH 1)..... 8.2
 SPECIFIC CONDUCTANCE..... 220.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
	25.	6.2							
MG	CA	SR	BA	CA+MG					
4.1	9.7								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	0.010		0.05						
ZN	HG	B	HBO2	AL	PB	AS	SB	U	
		0.02				0.002			
F	CL	BR	I						
0.2	2.8								
NH4	NO3	PO4	SI02	S04	CO3	HC03			
			57.	15.	1.	110.			

REFERENCES: SAMMEL, 1976

RECORD 00045

RECORD IDENTIFICATION

RECORD NO.... 0015337
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. CLYDE DEHILINGER
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-06.75 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-39.67 W

TOWNSHIP RANGE SECTION 1/4 1/4
 40S 10E 05

SAMPLE INFORMATION

COLLECTION DATE..... 1974/06/05
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... E 30.
 WATER SAMPLING TEMP.... 24.0
 OTHER SAMPLE INFORMATION: STOCK USE

WATER ANALYSIS

W
 ANALYST(S)..... USGS
 PH 1)..... 7.9
 SPECIFIC CONDUCTANCE..... 240.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA 40.	K 6.5	RB	CS	NA+K			
MG 3.1	CA 8.1	SR	BA	CA+MG				
MN+3	MN(TOT) N	FE+3	FE(TOT) 0.02	CU				
ZN	HG	B 0.04	HB02	AL	PB	AS	SB	U
F N	CL 4.9	BR	I					
NH4	NO3	PO4	SI02 72.	S04 2.3	CO3 N	HC03 150.		

REFERENCES: SAMMEL, 1976

RECORD 00046

RECORD IDENTIFICATION

RECORD NO.... 0015336
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. DAN O'CONNOR
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 40S 09E 23

SAMPLE INFORMATION

COLLECTION DATE..... 1974/05/07
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 26.
 WATER SAMPLING TEMP.... 24.0
 OTHER SAMPLE INFORMATION: STOCK USE

WATER ANALYSIS

PH 1)..... 7.6
 SPECIFIC CONDUCTANCE..... 260.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA 32.	K 8.1	RB	CS	NA+K
MG 6.6	CA 12.	SR	BA	CA+MG	

F CL BR I
 9.1
 NH4 NO3 PO4 SI02 S04 C03 HC03
 42. 14. N 130.

REFERENCES: SAMMEL, 1976

RECORD 00047

RECORD IDENTIFICATION

RECORD NO..... 0015300
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. EAGLE POINT SPRING
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 36S 07E 23

SAMPLE INFORMATION

COLLECTION DATE..... 1972/08/22
 COLLECTOR(S)..... GARDNER, MURRAY
 WATER SAMPLING TEMP.... 0 35.
 WATER FLOW RATE..... 19.

WATER ANALYSIS

ANALYST(S)..... W USGS
 PH. 1)..... 8.3
 SPECIFIC CONDUCTANCE..... 0 305.

ISOTOPIC DATA

DEL D OF WATER..... -109.7

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
Q	62.	5.7						
MG	CA	SR	BA	CA+MG				
L 0.1	0.6							
ZN	HG	B	HB02	AL	PB	AS	SB	U
		0.140						
F	CL	BR	I					
0.75	16.							
NH4	NO3	PO4	SI02	S04	C03	HC03		
			Q 38.	L 2.	N	136.		

REFERENCES: SAMMEL, 1976

RECORD IDENTIFICATION
 RECORD NO.... 0015305
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. FALCON HEIGHTS SCHOOL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 40-07.83 N.

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-45.08 W

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 09E 34

SAMPLE INFORMATION

COLLECTION DATE..... 1974/05/07
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 320.
 WATER SAMPLING TEMP.... 37.0
 WATER FLOW RATE..... 322.
 OTHER SAMPLE INFORMATION: IRRIGATION

WATER ANALYSIS W

PH 1)..... 7.8
 SPECIFIC CONDUCTANCE..... 350.

ISOTOPIC DATA

DEL O(18) OF WATER..... -15.69
 DEL D OF WATER..... -120.5

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
	57.	7.1						
MG	CA	SR	BA	CA+MG				
4.5	7.7							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.030		0.19					
ZN	HG	B	HBO2	AL	PB	AS	SB	U
		0.1				0.003		
F	CL	BR	I					
0.2	8.9							
NH4	NO3	PO4	SI02	S04	C03	HCO3		
			80.	24.	N	170.		

REFERENCES: SAMMEL, 1976

RECORD 00049

RECORD IDENTIFICATION
 RECORD NO.... 0015343
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. GEORGE CARTER
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-00.58 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-36.92 W

TOWNSHIP RANGE SECTION 1/4 1/4
 41S 10E 14

SAMPLE INFORMATION

COLLECTION DATE..... 1974/06/06
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 20.
 WATER SAMPLING TEMP.... 22.
 OTHER SAMPLE INFORMATION: DOMESTIC USE:

WATER ANALYSIS

ANALYST(S)..... W USGS
 PH 1)..... 8.2
 SPECIFIC CONDUCTANCE..... 660.

SOLUTE ANALYSIS (WATER)

				UNITS USED.....			MG/L
LI	NA	K	RB	CS	NA+K		
	99.	7.9					
MG	CA	SR	BA	CA+MG			
2.3	29.						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU			
	0.020		0.02				
ZN	HG	B	HB02	AL	PB	AS	SB
		0.15				N	U
F	CL	BR	I				
N	98.						
NH4	NO3	PO4	SI02	S04	C03	HC03	
			41.	95.	N	100.	

REFERENCES: SAMMEL, 1976

RECORD 00050

RECORD IDENTIFICATION

REPORTER

RECORD NO.... 0015333
 CROSS INDEX NO..
 RECORD TYPE.....

NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. GEORGE STACY CO.
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-09.42 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-37.58 W

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 10E 32

SAMPLE INFORMATION

COLLECTION DATE..... 1974/06/05
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 279.
 WATER SAMPLING TEMP.... 25.0
 OTHER SAMPLE INFORMATION: INDUSTRIAL USE

WATER ANALYSIS

ANALYST(S)..... W USGS
 PH 1)..... 8.3
 SPECIFIC CONDUCTANCE..... 170.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA 20.	K 4.0	RB	CS	NA+K			
MG 2.0	CA 13.	SR	BA	CA+MG				
MN+3	MN(TOT) 0.010	FE+3	FE(TOT) 0.04	CU				
ZN	HG	B 0.01	HB02	AL	PB	AS 0.001	SB	U
F N	CL 2.0	BR	I					
NH4	NO3	PO4	SI02 34.	S04 11.	CO3 N	HC03 94.		

REFERENCES: SAMMEL, 1976

RECORD 00051

RECORD IDENTIFICATION

RECORD NO.... 0015320
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. HOWARD HOLLIDAY
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-10.58 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-49.67 W

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 08E 13

SAMPLE INFORMATION

COLLECTION DATE..... 1974/05/22
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 WATER SAMPLING TEMP.... 25.0
 WATER FLOW RATE..... 57.
 OTHER SAMPLE INFORMATION: NEWCOMB AND HART, 1958; TEMP=21.1, EST. FLOW=189 LPM; MEASUREMENTS MADE 1954

WATER ANALYSIS

ANALYST(S)..... W USGS
 PH 1)..... 7.9
 SPECIFIC CONDUCTANCE..... 220.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.02	27.	2.9						
MG	CA	SR	BA	CA+MG				
3.1	12.							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	N		0.08					
ZN	HG	B	HBO2	AL	PB	AS	SB	U
		0.04				0.002		
F	CL	BR	I					
0.1	5.1							
NH4	NO3	PO4	SI02	S04	C03	HC03		
			27.	6.4	L 1.	120.		

REFERENCES: SAMMEL, 1976

RECORD 00052

RECORD IDENTIFICATION

RECORD NO.... 0015315
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. J. E. FRIESEN
 COUNTRY CODE.....

COUNTRY NAME..... UNITED STATES

STATE/PROVINCE..... OREGON

COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
38S 09E 28

SAMPLE INFORMATION

COLLECTION DATE..... 1955/02/19
DEPTH..... 172.
WATER SAMPLING TEMP.... 73.0
WATER FLOW RATE..... E 151.
OTHER SAMPLE INFORMATION: USED FOR HEATING

WATER ANALYSIS

ANALYST(S)..... USGS
PH 1)..... 8.7
SPECIFIC CONDUCTANCE.... 1230.
TOTAL DISSOLVED SOLIDS... 881.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K				
	221.	4.4							
MG	CA	SR	BA	CA+MG					
N	25.								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
			N						
ZN	HG	B	HB02	AL	PB	AS	SB	U	
		0.91							
F	CL	BR	I						
1.6	56.								
NH4	NO3	P04	SI02	S04	C03	HC03			
	N		87.	431.	8.	32.			

REFERENCES: NEWCOMB AND HART, 1958

RECORD 00053

RECORD IDENTIFICATION

RECORD NO.... 0015335
CROSS INDEX NO..
RECORD TYPE.....

REPORTER

NAME..... TESHIN, VICTOR
DATE..... 78/06
ORGANIZATION.: U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
NAME OF SAMPLE SOURCE.. J. K. O'NEIL
COUNTRY CODE.....
STATE/PROVINCE..... OREGONCOUNTRY NAME..... UNITED STATES
COUNTY..... KLAMATHTOWNSHIP RANGE SECTION 1/4 1/4
39S 10E 34

SAMPLE INFORMATION

COLLECTION DATE..... 1974/05/04
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 25.
 WATER SAMPLING TEMP.... 23.0
 OTHER SAMPLE INFORMATION: STOCK USE

WATER ANALYSIS

ANALYST(S)..... W USGS
 PH 1)..... 7.4
 SPECIFIC CONDUCTANCE..... 190.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
	26.	5.1						
MG	CA	SR	BA	CA+MG				
5.5	6.1							
ZN	HG	B	HB02	AL	PB	AS	SB	U
		Q						
F	CL	BR	I					
Q	2.8							
NH4	NO3	PO4	SI02	S04	CO3	HC03		
			50.	13.	1.	110.		

REFERENCES: SAMMEL, 1976

RECORD 00054

RECORD IDENTIFICATION

RECORD NO.... 0015442
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... PETERSON, NORMAN V.
 DATE..... 77/09
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. J. K. O'NEIL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 10W 34

USGS WRD WELL-SPRING NUMBERING SYSTEM

39S/10W-34BBD
 MAP REFERENCE: SWAN LAKE 1:62500

SAMPLE INFORMATION

SAMPLE NO..... OREGON STATE BOARD OF HEALTH 2070
 COLLECTION DATE..... 1972/03/01
 COLLECTOR(S)..... O'NEIL, J. K.

WATER ANALYSIS W
 ANALYSIS DATE..... 1972/03/16
 ANALYST(S)..... AWH
 PH 1)..... 7.6
 SPECIFIC CONDUCTANCE..... 222.
 ALKALINITY..... 83.
 TOTAL DISSOLVED SOLIDS... 159.

SOLUTE ANALYSIS (WATER)				UNITS USED..... MG/L			
LI	NA 22.4	K 5.4	RB	CS	NA+K		
MG 5.2	CA 6.4	SR	BA	CA+MG			
MN+3	MN(TOT) 0.02	FE+3	FE(TOT) 0.02	CU			
ZN	HG	B	H802	AL L 0.01	PB	AS N	SB U
F 0.2	CL 2.5	BR	I				
NH4	NO3 0.03	PO4 0.02	SI02 45.2	S04 8.5	CO3		HCO3

REFERENCES: OREGON DEPT OF GEOLOGY FILES

RECORD 00055

RECORD IDENTIFICATION
 RECORD NO.... 0015310
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. JACK LISKEY
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 40S 09E 34

SAMPLE INFORMATION
 COLLECTION DATE..... 1974/05/09
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 86.
 WATER SAMPLING TEMP.... 93.0
 WATER FLOW RATE..... 17034.
 OTHER SAMPLE INFORMATION: USE: IRRIGATION, STOCK

WATER ANALYSIS W

ANALYST(S)..... USGS
 PH 1)..... 8.9
 SPECIFIC CONDUCTANCE..... 1030.

ISOTOPIC DATA
 DEL O(18) OF WATER..... -14.95
 DEL D OF WATER..... -116.6

SOLUTE ANALYSIS (WATER)				UNITS USED..... MG/L				
LI	NA	K	RB	CS	NA+K			
0.08	200.	4.0						
MG	CA	SR	BA	CA+MG				
L 0.1	15.							
ZN	HG	B	HB02	AL	PB	AS	SB	U
		0.65						
F	CL	BR	I					
1.5	59.							
NH4	NO3	P04	SI02	S04	C03	HC03		
			90.	360.	2.	48.		

REFERENCES: SAMMEL, 1976

RECORD 00056

RECORD IDENTIFICATION
 RECORD NO.... 0015311
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. JACK LISKEY
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 41S 09E 02

SAMPLE INFORMATION
 COLLECTION DATE..... 1974/05/09
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 29.
 WATER SAMPLING TEMP.... 22.0
 WATER FLOW RATE..... 189.
 OTHER SAMPLE INFORMATION: DOMESTIC AND STOCK USE

WATER ANALYSIS
 ANALYST(S)..... USGS
 PH 1)..... 7.6
 SPECIFIC CONDUCTANCE..... 2400.

ISOTOPIIC DATA

DEL O(18) OF WATER..... -8.83
 DEL D OF WATER..... -87.2

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
Q	580.	12.							
MG	CA	SR	BA	CA+MG					
16.	35.								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
			0.09						
ZN	HG	B	HB02	AL	PB	AS	SB	U	
		Q							
F	CL	BR	I						
Q	140.								
NH4	NO3	PO4	SI02	S04	C03	HC03			
			100.	13.	N	1550.			

REFERENCES: PERSONAL FILES EDWARD SAMMEL

RECORD 00057

RECORD IDENTIFICATION

RECORD NO..... 0015339
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. JACK O'CONNOR
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 41S 09E 01

SAMPLE INFORMATION

COLLECTION DATE..... 1974/05/09
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... G 183.
 WATER SAMPLING TEMP.... 38.0
 OTHER SAMPLE INFORMATION: DOMESTIC AND STOCK USE

WATER ANALYSIS

ANALYST(S)..... W USGS
 PH 1)..... 8.3
 SPECIFIC CONDUCTANCE..... 640.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
	130.	3.0						
MG	CA	SR	BA	CA+MG				
0.6	7.5							
ZN	HG	B	H802	AL	PB	AS	SB	U
		Q						
F	CL	BR	I					
Q	50.							
NH4	NO3	P04	SI02	S04	C03	HC03		
			65.	140.	2.	110.		

REFERENCES: SAMMEL, 1976

RECORD 00058

RECORD IDENTIFICATION

RECORD NO.... 0015431
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... PETERSON, NORMAN V.
 DATE..... 77/09
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. KLAMATH ICE CO.
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 38S 09E 33

USGS WRD WELL-SPRING NUMBERING SYSTEM
 38S-9E-338C
 MAP REFERENCE: KLAMATH FALLS 1:62500

SAMPLE INFORMATION

COLLECTION DATE..... 1936/04/02
 DEPTH..... 335.
 WATER SAMPLING TEMP... 51.7
 WATER FLOW RATE..... 57.

WATER ANALYSIS

ANALYSIS DATE..... 1936/00/00
 ANALYST(S)..... CHARLTON LABORATORIES, PORTLAND, ORE.
 PH 1)..... 9.0
 TOTAL DISSOLVED SOLIDS... 784.

AT 51.7

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

MN+3	MN(TOT)	FE+3	FE(TOT)	CU
			N	

F CL BR I
 53.
 NH4 NO3 P04 SI02 S04 C03 HC03
 70. 380.

REFERENCES: NEWCOMB AND HART, 1958

RECORD 00059

RECORD IDENTIFICATION
 RECORD NO.... 0015331
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. LEN DOBRY
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 10E 28

SAMPLE INFORMATION

COLLECTION DATE..... 1974/05/04
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 187.
 WATER SAMPLING TEMP..... 21.0

WATER ANALYSIS

ANALYST(S)..... W USGS
 PH 1)..... 7.6
 SPECIFIC CONDUCTANCE..... 195.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
	32.	4.5						
MG	CA	SR	BA	CA+MG				
1.1	5.7							
ZN	HG	B	HB02	AL	PB	AS	SB	U
		Q						
F	CL	BR	I					
Q	3.4							
NH4	NO3	P04	SI02	S04	C03	HC03		
			65.	14.	N	100.		

REFERENCES: SAMMEL, 1976

RECORD 00060

RECORD IDENTIFICATION
 RECORD NO..... 0015332
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. LESTER BROOKSHIRE
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-08.50 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-39.83 W

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 10E 29

SAMPLE INFORMATION

COLLECTION DATE..... 1974/05/04
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 369.
 WATER SAMPLING TEMP.... 25.0
 OTHER SAMPLE INFORMATION: STOCK USE

WATER ANALYSIS

ANALYST(S)..... W USGS
 PH 1)..... 8.1
 SPECIFIC CONDUCTANCE..... 175.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA 21.	K 3.4	RB	CS	NA+K				
MG	CA 13.	SR	BA	CA+MG					
MN+3	MN(TOT) 0.02	FE+3	FE(TOT) 0.02	CU					
ZN	HG	B 0.006	HBO2	AL	PB	AS 0.002	SB	U	
F	CL 2.8	BR	I						
NH4	NO3	PO4	SI02 35.	S04 10.	C03 1.	HC03 95.			

REFERENCES: SAMMEL, 1976

RECORD 00061

RECORD IDENTIFICATION
 RECORD NO..... 0015319

REPORTER
 NAME..... TESHIN, VICTOR

CROSS INDEX NO..
RECORD TYPE.....

DATE..... 78/06
ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
NAME OF SAMPLE SOURCE.. LOIS MERRUYS
COUNTRY CODE.....
STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
38S 09E 33

SAMPLE INFORMATION

COLLECTION DATE..... 1954/12/22
DEPTH..... 161.
WATER SAMPLING TEMP.... 71.0
OTHER SAMPLE INFORMATION: USED FOR HEATING

WATER ANALYSIS

PH 1)..... 8.5
SPECIFIC CONDUCTANCE..... 1100.
TOTAL DISSOLVED SOLIDS... 812.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K				
	207.	3.8							
MG	CA	SR	BA	CA+MG					
N	22.								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
			N						
ZN	HG	B	HB02	AL	PB	AS	SB	U	
		0.74							
F	CL	BR	I						
1.4	50.								
NH4	NO3	P04	SI02	S04	CO3	HC03			
	0.2		83.	393.	4.	43.			

REFERENCES: NEWCOMB AND HART, 1958

RECORD 00062

RECORD IDENTIFICATION

RECORD NO..... 0015322
CROSS INDEX NO..
RECORD TYPE.....

REPORTER

NAME..... TESHIN, VICTOR
DATE..... 78/06
ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
NAME OF SAMPLE SOURCE.. MAZAMA SCHOOL

COUNTRY CODE.....
STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
39S 09E 11

SAMPLE INFORMATION

DEPTH..... 296.
WATER SAMPLING TEMP.... 61.0
OTHER SAMPLE INFORMATION: DOMESTIC USE

WATER ANALYSIS

ANALYST(S)..... OREGON STATE BOARD OF HEALTH
PH 1)..... 8.3
SPECIFIC CONDUCTANCE..... Q 895.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA 246.	K 6.0	RB	CS	NA+K		
MG 1.0	CA 5.4	SR	BA	CA+MG			
MN+3	MN(TOT)	FE+3	FE(TOT) 0.09	CU			
F 1.0	CL 35.	BR	I				
NH4	NO3	P04	SI02 92.	S04 256.	C03 N	HC03 120.	

REFERENCES: SAMMEL, 1976

RECORD 00063

RECORD IDENTIFICATION

RECORD NO.... 0015302
CROSS INDEX NO..
RECORD TYPE.....

REPORTER

NAME..... TESHIN, VICTOR
DATE..... 78/06
ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
NAME OF SAMPLE SOURCE.. MEDO-BELL DAIRY
COUNTRY CODE.....
STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
38S 09E 28

SAMPLE INFORMATION

COLLECTION DATE..... 1955/01/24
DEPTH..... 233.
WATER SAMPLING TEMP.... 81.0
OTHER SAMPLE INFORMATION: INDUSTRIAL USE

WATER ANALYSIS

W
 PH 1)..... 8.8
 SPECIFIC CONDUCTANCE..... 1160.
 TOTAL DISSOLVED SOLIDS... 833.

ISOTOPIC DATA

DEL O(18) OF WATER..... -14.95
 DEL D OF WATER..... -119.4

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA 213.	K 4.2	RB	CS	NA+K			
MG N	CA 23.	SR	BA	CA+MG				
MN+3	MN(TOT)	FE+3	FE(TOT) 0.04	CU				
ZN	HG	B 0.96	HR02	AL	PB	AS	SB	U
F 1.2	CL 54.	BR	I					
NH4	NO3 N	PO4	SI02 81.	S04 403.	C03 8.	HC03 32.		

OTHER SOLUTES & GASES ISOTOPES DONE AT DIFFERENT DATE
 REFERENCES: NEWCOMB AND HART, 1958

RECORD 00064

RECORD IDENTIFICATION

RECORD NO.... 0015430
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... PETERSON, NORMAN V.
 DATE..... 77/09
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. MELVIN FEIGI
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 40S 11E 03
 MAP REFERENCE: MALIN 1:62500

SAMPLE INFORMATION

SAMPLE NO..... GSL-3 (USGS)
 COLLECTION DATE..... 1970/10/08
 DEPTH..... 293.
 WATER SAMPLING TEMP.... 31.0
 WATER TREATMENT DATA: ACIDIFIED WITH 0.5 ML HNO3-160Z.

WATER ANALYSIS

PH 1)..... 8.8
 SPECIFIC CONDUCTANCE..... 273.
 TOTAL DISSOLVED SOLIDS... 270.

AT 31.

ISOTOPIC DATA

DEL O(18) OF WATER..... -16.80

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
	66.	1.0							
MG	CA	SR	BA	CA+MG					
N	1.2								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
			0.02						
ZN	HG	B	HB02	AL	PB	AS	SB	U	
		N							
F	CL	BR	I						
0.4	5.								
NH4	NO3	PO4	SI02	S04	CO3	HC03			
	2.9		110.	5.8	21.	110.			

OTHER SOLUTES & GASES ISOTOPE FROM SAMMEL, 1976
 REFERENCES: LEONARD AND HARRIS, 1974

RECORD 00065

RECORD IDENTIFICATION

RECORD NO..... 0015306
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. MELVIN MCCOLLUM
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-11.92 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-41.00 W

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 10E 07

SAMPLE INFORMATION

COLLECTION DATE..... 1974/05/28
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 68.
 WATER SAMPLING TEMP.... 25.0
 WATER FLOW RATE..... 379.

OTHER SAMPLE INFORMATION: USE: DOMESTIC AND IRRIGATION

WATER ANALYSIS W
 ANALYST(S)..... USGS
 PH 1)..... 7.5
 SPECIFIC CONDUCTANCE..... 300.

ISOTOPIC DATA
 DEL O(18) OF WATER..... -14.71
 DEL D OF WATER..... -113.2

SOLUTE ANALYSIS (WATER)				UNITS USED..... MG/L			
LI	NA	K	RB	CS	NA+K		
	20.	4.0					
MG	CA	SR	BA	CA+MG			
13.	24.						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU			
	0.07		1.4				
ZN	HG	B	HBO2	AL	PB	AS	SB
		0.02				0.002	U
F	CL	BR	I				
0.2	3.1						
NH4	NO3	PO4	SI02	S04	CO3	HC03	
			52.	53.	N	120.	

REFERENCES: SAMMEL, 1976

RECORD 00066

RECORD IDENTIFICATION
 RECORD NO.... 0015303
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. MILLS SCHOOL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 38S 09E 33

SAMPLE INFORMATION
 COLLECTION DATE..... 1975/08/07
 DEPTH..... 244.
 WATER SAMPLING TEMP.... 89.0
 WATER FLOW RATE..... 38.
 OTHER SAMPLE INFORMATION: USED FOR HEATING

WATER ANALYSIS W
 ANALYST(S)..... OREGON STATE BOARD OF HEALTH
 PH 1)..... 8.3
 SPECIFIC CONDUCTANCE..... Q 1200.

ISOTOPIC DATA
 DEL O(18) OF WATER..... -14.83
 DEL D OF WATER..... -121.8

SOLUTE ANALYSIS (WATER)				UNITS USED..... MG/L				
LI	NA	K	RB	CS	NA+K			
Q	370.	3.0						
MG	CA	SR	BA	CA+MG				
L 0.2	27.							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.03		0.03					
ZN	HG	B	HBO2	AL	PB	AS	SB	U
		0.96						
F	CL	BR	I					
1.2	54.							
NH4	NO3	P04	SI02	S04	CO3	HCO3		
			78.	462.		46.		

REFERENCES: SAMMEL, 1976

RECORD 00067

RECORD IDENTIFICATION
 RECORD NO..... 0015334
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. MONTE DEHILINGER
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-07.58 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-40.42 W

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 10E 32

SAMPLE INFORMATION
 COLLECTION DATE..... 1974/06/06
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 45.
 WATER SAMPLING TEMP.... 26.0
 OTHER SAMPLE INFORMATION: DOMESTIC USE

WATER ANALYSIS W
 ANALYST(S)..... USGS
 PH 1)..... 7.6
 SPECIFIC CONDUCTANCE..... 260.

SOLUTE ANALYSIS (WATER) UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
	22.	6.7						
MG	CA	SR	BA	CA+MG				
11.	17.							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	N		0.02					
ZN	HG	B	HB02	AL	PB	AS	SB	U
		0.02				0.004		
F	CL	BR	I					
N	3.6							
NH4	NO3	PO4	SI02	S04	C03	HC03		
			54.	7.1	N	160.		

REFERENCES: SAMMEL, 1976

RECORD 00068

RECORD IDENTIFICATION
 RECORD NO.... 0015321
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. MOYINA WATER CO.
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 09E 01

SAMPLE INFORMATION
 COLLECTION DATE..... 1966/08/24
 DEPTH..... 476.
 WATER SAMPLING TEMP.... G 50.
 OTHER SAMPLE INFORMATION: DOMESTIC USE

WATER ANALYSIS W
 PH 1)..... 7.4
 SPECIFIC CONDUCTANCE..... 222.

SOLUTE ANALYSIS (WATER) UNITS USED..... MG/L

LI	NA 38.	K 5.0	RB	CS	NA+K			
MG 2.3	CA 7.9	SR	BA	CA+MG				
MN+3	MN(TOT) L 0.05	FE+3	FE(TOT) 0.42	CU				
ZN	HG	8	HB02	AL	PB	AS L 0.005	SB	U
F 0.22	CL 1.8	BR	I					
NH4	NO3	PO4	SI02 64.	S04 5.6	CO3	HC03		

REFERENCES: SAMMEL, 1976

RECORD 00069

RECORD IDENTIFICATION
 RECORD NO.... 0015308
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. O.H. OSBORN
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-23.33 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-44.83 W

TOWNSHIP RANGE SECTION 1/4 1/4
 40S 09E 27

SAMPLE INFORMATION

COLLECTION DATE..... 1974/05/31
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 127.
 WATER SAMPLING TEMP.... 90.0
 WATER FLOW RATE..... 1703.
 OTHER SAMPLE INFORMATION: USE: STOCK

WATER ANALYSIS

ANALYST(S)..... W USGS
 PH 1)..... 9.5
 SPECIFIC CONDUCTANCE..... 920.

ISOTOPIC DATA

DEL O(18) OF WATER..... -14.95
 DEL D OF WATER..... -117.0

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K		
	190.	4.1					
MG	CA	SR	BA	CA+MG			
N	15.						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU			
	N-		0.26				
ZN	HG	B	HB02	AL	PB	AS	SB
		0.77				0.011	U
F	CL	BR	I				
1.5	56.						
NH4	NO3	PO4	SI02	S04	C03	HC03	
			90.	270.	9.	37.	

REFERENCES: SAMMEL, 1976

RECORD 00070

RECORD IDENTIFICATION

RECORD NO.... 0015419
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... PETERSON, NORMAN V.
 DATE..... 77/09
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. O.I.T. NO. 3
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 38S 09E 28

MAP REFERENCE: KLAMATH FALLS, ORE. 15' QUAD.

SAMPLE INFORMATION

SAMPLE NO..... 1139 OREGON STATE BOARD OF HEALTH
 COLLECTION DATE..... 1967/00/00
 COLLECTOR(S)..... PETERSON & GROH
 WATER SAMPLING TEMP.... 89.0

WATER ANALYSIS

ANALYST(S)..... W ROSE, ALAN W., OREGON STATE BOARD OF HEALTH
 PH 1)..... 8.6
 SPECIFIC CONDUCTANCE..... 1000.
 TOTAL DISSOLVED SOLIDS... 816.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K		
	331.	3.5					
MG	CA	SR	BA	CA+MG			
1.04	25.1						

MN+3	MN(TOT) L 0.02	FE+3	FE(TOT) 0.03	CU					
ZN	HG	B	HB02	AL 0.03	PB	AS 0.018	SB	U	
F 1.12	CL 48.	BR	I						
NH4 0.54	NO3 L 0.01	PO4	SI02 73.	S04 384.	CO3 16.	HC03 22.			

REFERENCES: PETERSON AND GROH, 1967

RECORD 00071

RECORD IDENTIFICATION
 RECORD NO.... 0015301
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. O.I.T. NO. 6
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 38S 09E 20

SAMPLE INFORMATION

COLLECTION DATE..... 1972/08/24
 DEPTH..... 550.
 WATER SAMPLING TEMP.... 88.0
 WATER FLOW RATE..... 946.
 OTHER SAMPLE INFORMATION: USED FOR HEAT

WATER ANALYSIS

PH 1)..... W 8.2
 SPECIFIC CONDUCTANCE..... 0 1050.

ISOTOPIC DATA

DEL D OF WATER..... -118.7

SOLUTE ANALYSIS (WATER)

LI	NA	K	RB	CS	NA+K				
Q	195.	3.9							
MG	CA	SR	BA	CA+MG					
L 0.1	24.2								
ZN	HG	B	HB02	AL	PB	AS	SB	U	
		1.0							

UNITS USED..... MG/L

F 1.45 CL 58. BR I
 NH4 NH3 PO4 SI02 S04 C03 HC03
 31. 400. N 44.

REFERENCES: SAMMEL, 1976

RECORD 00072

RECORD IDENTIFICATION
 RECORD NO.... 0015342
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY.

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. O'CONNOR LIVESTOCK CO.
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-01.0 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-41.0 W

TOWNSHIP RANGE SECTION 1/4 1/4
 41S 10E 07

SAMPLE INFORMATION

COLLECTION DATE..... 1974/06/06
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 235.
 WATER SAMPLING TEMP.... 30.0
 OTHER SAMPLE INFORMATION: USE: IRRIGATION; TEMP 27.9 AT 500' (1974/01/24)

WATER ANALYSIS

ANALYST(S)..... W
 USGS
 PH 1)..... 7.8
 SPECIFIC CONDUCTANCE..... 1300.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
	210.	7.0							
MG	CA	SR	BA	CA+MG					
6.4	58.								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	0.15		0.04						
ZN	HG	B	HBO2	AL	PB	AS	SB	U	
		0.69				0.001			
F	CL	BR	I						
N	160.								
NH4	NH3	PO4	SI02	S04	C03	HC03			

REFERENCES: SAMMEL, 1976

80.

210.

N

250.

RECORD 00073

RECORD IDENTIFICATION
 RECORD NO.... 0000705
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. OLENE GAP HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-15.0 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-45.0 W

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 10E 14
 MAP REFERENCE: MERRILL 1:62500, KLAMATH FALLS 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 74.0
 WATER FLOW RATE..... 200.
 WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH
 NITRIC ACID, DILUTED
 OTHER SAMPLE INFORMATION: TEMP. HAS BEEN MEASURED AS HIGH AS 87

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.68
 SPECIFIC CONDUCTANCE..... 1140.

ISOTOPIC DATA

DEL O(18) OF WATER..... -13.00
 DEL D OF WATER..... -113.3

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
0.15	190.	7.2	0.02	L 0.1					
MG	CA	SR	BA	CA+MG					
0.2	40.	0.58	L 0.1						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	L 0.02		L 0.02	0.01					
ZN	HG	B	HBO2	AL	PB	AS	SB	U	
		1.0			L 0.06	0.09	L 0.2		
F	CL	BR	I						
1.2	59.	0.08	0.01						

NH4 NO3 PO4 SI02 S04 C03 HC03
 0.18 98. 400. L 1. 53.
 REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00074

RECORD IDENTIFICATION
 RECORD NO.... 0015443
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... PETERSON, NORMAN V.
 DATE..... 77/09
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. OLENE GAP HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 10E 14

MAP REFERENCE: MERRILL 1:62500

OTHER LOCALITY INFORMATION: MAIN SPRING ORIFICE

SAMPLE INFORMATION

SAMPLE NO..... 1136 OREGON STATE BOARD OF HEALTH
 COLLECTION DATE..... 1967/00/00
 COLLECTOR(S)..... PETERSON & GROH
 POINT OF COLLECTION..... MAIN SPRING ORIFICE
 WATER SAMPLING TEMP.... 73.9
 WATER FLOW RATE..... 38.

WATER ANALYSIS

ANALYSIS DATE..... 1967/00/00
 ANALYST(S)..... ROSE, ALAN W., OREGON STATE BOARD OF HEALTH
 PH 1)..... 7.3
 SPECIFIC CONDUCTANCE.... 1000.
 TOTAL DISSOLVED SOLIDS... 812.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
	294.	4.5							
MG	CA	SR	BA	CA+MG					
1.09	34.9								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	0.06		0.03						
ZN	HG	B	HB02	AL	PB	AS	SB	U	
				0.03		0.027			
F	CL	BR	I						
1.12	58.								
NH4	NO3	PO4	SI02	S04	C03	HC03			

0.55- 0.91 79.
REFERENCES: PETERSON AND GROH, 1967

346. N 40.

RECORD 00075

RECORD IDENTIFICATION
RECORD NO.... 0015326
CROSS INDEX NO..
RECORD TYPE.....

REPORTER
NAME..... TESHIN, VICTOR
DATE..... 78/06
ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
NAME OF SAMPLE SOURCE.. OREGON WATER CORP.(4)
COUNTRY CODE.....
STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
39S 10E 06

SAMPLE INFORMATION

COLLECTION DATE..... 1970/08/27
DEPTH..... 223.
WATER SAMPLING TEMP.... 26.

WATER ANALYSIS

ANALYST(S)..... W OREGON STATE BOARD OF HEALTH
PH 1)..... 8.6

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K	
	36.					
MG	CA	SR	BA	CA+MG		
5.8	8.5					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU		
	L 0.005		0.33			
F	CL	BR	I			
0.32	3.0					
NH4	NO3	PO4	SI02	S04	CO3	HC03
			63.	6.5		

REFERENCES: SAMMEL, 1976

RECORD 00076

RECORD IDENTIFICATION
RECORD NO.... 0015316
CROSS INDEX NO..
RECORD TYPE.....

REPORTER
NAME..... TESHIN, VICTOR
DATE..... 78/06
ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. OREGON WATER CORP.(1)
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 38S 09E 32

SAMPLE INFORMATION

COLLECTION DATE..... 1930/03/03
 DEPTH..... 259.
 WATER SAMPLING TEMP.... Q 21.
 OTHER SAMPLE INFORMATION: PUBLIC SUPPLY; TEMP MEASURED IN 1975

WATER ANALYSIS

SPECIFIC CONDUCTANCE..... 200.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
	29.				
MG	CA	SR	BA	CA+MG	
4.	10.				
MN+3	MN(TOT)	FE+3	FE(TOT)	CU	
			L 0.05		
F	CL	BR	I		
	8.				
NH4	NO3	P04	SI02	S04	C03
			46.	N	N
					HC03
					117.

REFERENCES: SAMMEL, 1976

RECORD 00077

RECORD IDENTIFICATION

RECORD NO.... 0015317
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. OREGON WATER CORP. (2)
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 38S 09E 32

SAMPLE INFORMATION

COLLECTION DATE..... 1971/09/00
 DEPTH..... 133.
 WATER SAMPLING TEMP.... 21.0

WATER ANALYSIS W
 ANALYST(S)..... OREGON STATE BOARD OF HEALTH
 PH 1)..... 8.3

SOLUTE ANALYSIS (WATER) UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
	26.				
MG	CA	SR	BA	CA+MG	
6.8	11.2				
MN+3	MN(TOT)	FE+3	FE(TOT)	CU	
	L 0.01		0.08		
F	CL	BR	I		
0.01	5.3				
NH4	NO3	PO4	SI02	S04	C03 HC03
			24.	1.2	

REFERENCES: SAMMEL, 1976

RECORD 00078

RECORD IDENTIFICATION
 RECORD NO.... 0015318
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. OREGON WATER CORP.(3)
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 38S 09N 32

SAMPLE INFORMATION

COLLECTION DATE..... 1971/09/00
 DEPTH..... 191.
 WATER SAMPLING TEMP.... 20.0
 OTHER SAMPLE INFORMATION: SAMPLE(1975/08/08): TEMP=22, SP COND=205

WATER ANALYSIS W
 ANALYST(S)..... OREGON STATE BOARD OF HEALTH
 PH 1)..... 8.4
 SPECIFIC CONDUCTANCE..... Q 205.

SOLUTE ANALYSIS (WATER) UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
	26.				

MG 5.8	CA 11.2	SR	BA	CA*MG		
MN*3	MN(TOT) L 0.01	FE*3	FE(TOT) 0.05	CU		
F 0.02	CL 5.3	BR	I			
NH4	NO3	PO4	SI02 25.	S04 0.6	C03	HC03

REFERENCES: SAMMEL, 1976

RECORD 00079

RECORD IDENTIFICATION
 RECORD NO.... 0015341
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. POPE'S MEAT CO.
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-02.25 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH
 LONGITUDE..... 121-37.17 W

TOWNSHIP RANGE SECTION 1/4 1/4
 41S 10E 03

SAMPLE INFORMATION

COLLECTION DATE..... 1974/06/06
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 344.
 WATER SAMPLING TEMP.... 22.0
 OTHER SAMPLE INFORMATION: COMMERCIAL USE

WATER ANALYSIS

ANALYST(S)..... W USGS
 PH 1)..... 8.5
 SPECIFIC CONDUCTANCE..... 190.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA 30.	K 3.2	RB	CS	NA*K		
MG 1.4	CA 8.6	SR	BA	CA*MG			
MN*3	MN(TOT) N	FE*3	FE(TOT) 0.02	CU			
ZN	HG	B	HB02	AL	PB	AS	SB U

RECORD TYPE.....

ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING

NAME OF SAMPLE SOURCE.. ROENICKE HOT SPRING

COUNTRY CODE.....

STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES

COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
39S 10E 14

OTHER LOCALITY INFORMATION: SPRING OWNED BY L. JONES

SAMPLE INFORMATION

COLLECTION DATE..... 1972/10/11

COLLECTOR(S)..... GARDNER, MURRAY

WATER SAMPLING TEMP.... Q 65.0

WATER ANALYSIS

PH 1)..... 8.2

SPECIFIC CONDUCTANCE..... Q 1300.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
	217.	5.0							
MG	CA	SR	BA	CA+MG					
0.1	35.								
ZN	HG	B	HBO2	AL	PB	AS	SB	U	
		1.9							
F	CL	BR	I						
1.5	65.								
NH4	NO3	PO4	SI02	S04	CO3	HC03			
			48.	430.	N	50.			

REFERENCES: SAMMEL, 1976

RECORD 00083

RECORD IDENTIFICATION

RECORD NO..... 0015432

CROSS INDEX NO..

RECORD TYPE.....

REPORTER

NAME..... PETERSON, NORMAN V.

DATE..... 77/09

ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL

NAME OF SAMPLE SOURCE.. ROY SMITH WELL

COUNTRY CODE.....

STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES

COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
36S 11E 16

USGS WRD WELL-SPRING NUMBERING SYSTEM
 36S/11E-16BCB
 MAP REFERENCE: BEATTY 1:62500

SAMPLE INFORMATION

COLLECTION DATE..... 1970/10/08
 COLLECTOR(S)..... USGS
 DEPTH..... 116.
 WATER SAMPLING TEMP.... 25.

WATER ANALYSIS

ANALYSIS DATE..... 1970/00/00
 ANALYST(S)..... USGS
 PH 1)..... 8.4
 SPECIFIC CONDUCTANCE.... 148.
 TOTAL DISSOLVED SOLIDS... 140.

AT 25.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K	
	30.	1.9				
MG	CA	SR	BA	CA*MG		
0.1	3.8					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU		
			0.03			
F	CL	BR	I			
0.2	2.5					
NH4	N03	P04	SI02	S04	C03	HCO3
	0.3		50.	3.2	11.	64.

REFERENCES: LEONARD AND HARRIS, 1974

RECORD 00084

RECORD IDENTIFICATION

RECORD NO.... 0015314
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. S. AND C. KILGORE
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 40S 14E 16

SAMPLE INFORMATION

DEPTH..... 130.
 WATER SAMPLING TEMP.... 20.0
 WATER FLOW RATE..... 6624.

WATER ANALYSIS W
 SPECIFIC CONDUCTANCE..... 230.

ISOTOPIC DATA
 DEL O(18) OF WATER..... -16.00
 REFERENCES: SAMMEL, 1976

RECORD 00085

RECORD IDENTIFICATION
 RECORD NO.... 0015340
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. TOWN OF MERRILL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 41S 10E 02

SAMPLE INFORMATION
 COLLECTION DATE..... 1955/02/18
 DEPTH..... 332.
 WATER SAMPLING TEMP.... 21.0
 OTHER SAMPLE INFORMATION: PUBLIC SUPPLY

WATER ANALYSIS W
 PH 1)..... 8.3
 SPECIFIC CONDUCTANCE..... 316.
 TOTAL DISSOLVED SOLIDS... 214.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA 44.	K 3.8	RB	CS	NA+K			
MG 4.3	CA 11.	SR	BA	CA+MG				
MN+3	MN(TOT)	FE+3	FE(TOT) 0.12	CU				
ZN	HG	B 0.01	HBO2	AL	PB	AS 0.01	SB	U
F 0.1	CL 27.	BR	I					
NH4	NO3 N	PO4	SI02 38.	S04 21.	CO3	HC03 114.		

REFERENCES: NEWCOMB AND HART 1958

RECORD 00086

RECORD IDENTIFICATION
 RECORD NO..... 0015323
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. U.S. AIR FORCE(1)
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 09E 34

SAMPLE INFORMATION

COLLECTION DATE..... 1972/10/17
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 152.
 WATER SAMPLING TEMP.... Q 31.0
 OTHER SAMPLE INFORMATION: PUBLIC SUPPLY

WATER ANALYSIS

PH 1)..... Q 7.0
 SPECIFIC CONDUCTANCE..... Q 240.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA 47.	K 9.0	RB	CS	NA+K		
MG 1.2	CA 3.8	SR	BA	CA+MG			
MN+3	MN(TOT) L 0.01	FE+3	FE(TOT) 0.04	CU			
F 0.3	CL 6.0	BR	I				
NH4	NO3	PO4	SI02 53.	S04 8.	CO3 N	HC03 128.	

REFERENCES: SAMMEL, 1976

RECORD 00087

RECORD IDENTIFICATION
 RECORD NO..... 0015324
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. U.S. AIR FORCE(2)
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 09E 34

SAMPLE INFORMATION

COLLECTION DATE..... 1972/10/17
 COLLECTOR(S)..... VOEGTLY AND SAMMEL
 DEPTH..... 120.
 WATER SAMPLING TEMP.... 0 30.
 OTHER SAMPLE INFORMATION: PUBLIC SUPPLY

WATER ANALYSIS

ANALYST(S)..... USGS
 SPECIFIC CONDUCTANCE..... 0 255.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K	
	48.	8.5				
MG	CA	SR	BA	CA+MG		
2.3	5.6					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU		
	L 0.01		0.03			
F	CL	BR	I			
0.2	6.3					
NH4	NO3	P04	SI02	S04	C03	HCO3
			51.	9.	N	145.

REFERENCES: SAMMEL, 1976

RECORD 00088

RECORD IDENTIFICATION

RECORD NO..... 0015304
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... TESHIN, VICTOR
 DATE..... 78/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. WEYERHAUSER WELL NO. 4
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... KLAMATH

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 09E 18

SAMPLE INFORMATION

COLLECTION DATE..... 1972/08/22

DEPTH..... 166.
 WATER SAMPLING TEMP.... 22.0
 WATER FLOW RATE..... 4637.
 OTHER SAMPLE INFORMATION: INDUSTRIAL USE

WATER ANALYSIS W
 ANALYST(S)..... GARDNER, MURRAY
 PH 1)..... 8.3
 SPECIFIC CONDUCTANCE..... 200.

ISOTOPIC DATA
 DEL O(18) OF WATER..... -14.60
 DEL D OF WATER..... -109.1

SOLUTE ANALYSIS (WATER)				UNITS USED..... MG/L			
LI	NA	K	RB	CS	NA+K		
	32.	3.3					
MG	CA	SR	BA	CA+MG			
1.9	10.						
ZN	HG	B	HB02	AL	PB	AS	SB U
		0.09					
F	CL	BR	I				
0.11	4.						
NH4	NO3	PO4	SI02	S04	CO3	HC03	
			16.	4.	4.5	115.	

REFERENCES: SAMMEL, 1976

RECORD 00089

RECORD IDENTIFICATION
 RECORD NO.... 0002215
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. ANA RIVER SPRING
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 TOWNSHIP RANGE SECTION 1/4 1/4
 30S 17E 06

COUNTRY NAME..... UNITED STATES
 COUNTY..... LAKE

SAMPLE INFORMATION
 COLLECTION DATE..... 1948/12/00
 WATER SAMPLING TEMP.... 18.9
 WATER FLOW RATE..... 170339.

WATER ANALYSIS W
 ANALYST(S)..... USGS
 PH 1)..... 8.4

TOTAL DISSOLVED SOLIDS... 161.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K			
	39.	3.2						
MG	CA	SR	BA	CA+MG				
3.1	5.2							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
			0.16					
ZN	HG	B	HB02	AL	PB	AS	SB	U
		0.5						
F	CL	BR	I					
0.2	13.							
NH4	NO3	PO4	SI02	S04	CO3	HC03		
	0.1		37.	6.7		108.		

OTHER SOLUTES & GASES FE (TOTAL) RECORDED AS .34 WHEN COLLECTED
 REFERENCES: TRAUGER, 1950

RECORD 00090

RECORD IDENTIFICATION

RECORD NO..... 0002216
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. ANTELOPE HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... LAKE

TOWNSHIP RANGE SECTION 1/4 1/4
 35S 26E 32

SAMPLE INFORMATION

COLLECTION DATE..... 1948/08/10
 WATER SAMPLING TEMP.... 40.0
 WATER FLOW RATE..... 114.

WATER ANALYSIS

W
 ANALYST(S)..... USGS
 PH 1)..... 8.3
 SPECIFIC CONDUCTANCE..... 876.
 TOTAL DISSOLVED SOLIDS... 695.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K
	191.	13.			

MG	CA	SR	BA	CA+MG				
2.5	10.							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
			0.02					
ZN	HG	B	HB02	AL	PB	AS	SB	U
		1.5						
F	CL	BR	I					
3.60	64.							
NH4	NO3	PO4	SI02	S04	C03	HC03		
	0.2		168.	57.		376.		

REFERENCES: TRAUGER, 1950

RECORD 00091

RECORD IDENTIFICATION
 RECORD NO.... 0000780
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. BARRY RANCH HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-09.4 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... LAKE
 LONGITUDE..... 120-20.4 W

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 20E 27
 MAP REFERENCE: LAKEVIEW 1:24000, KLAMATH FALLS 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 88.0
 WATER FLOW RATE..... 200.
 DEPOSITS OR ALTERATION: SINTER, TRAVERTINE
 WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH NITRIC ACID, DILUTED
 OTHER SAMPLE INFORMATION: MIXED WATERS

WATER ANALYSIS W

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.76
 SPECIFIC CONDUCTANCE..... 1370.

ISOTOPIC DATA

DEL O(18) OF WATER..... -13.72
 DEL D OF WATER..... -119.4

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.15	280.	9.0	0.04	L 0.1				
MG	CA	SR	BA	CA+MG				
0.1	8.8	0.17	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	L 0.02		L 0.02	L 0.01				
ZN	HG	B	HB02	AL	PB	AS	SB	U
	0.0017	11.2		0.014	L 0.06	0.07	L 0.2	
F	CL	BR	I					
5.4	170.	1.	0.1					
NH4	NO3	PO4	SI02	SO4	CO3	HC03		
1.8		0.18	130.	240.	2.	232.		

OTHER SOLUTES & GASES O2+AR=2

GAS ANALYSIS G
UNITS USED..... VOLUME %

CO2	H2S	N2	O2
2.		54.	
H2	CH4	C2H6	HE
	42.		

OTHER GASES: O2 + AR--2

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00092

RECORD IDENTIFICATION

RECORD NO.... 0002217
CROSS INDEX NO..
RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
DATE..... 76/06
ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
NAME OF SAMPLE SOURCE.. BARRY RANCH HOT SPRINGS
COUNTRY CODE.....
STATE/PROVINCE..... OREGON
LATITUDE..... 42-09.4 N

COUNTRY NAME..... UNITED STATES
COUNTY..... LAKE
LONGITUDE..... 120-20.4 W

TOWNSHIP RANGE SECTION 1/4 1/4
39S 20E 27
MAP REFERENCE: LAKEVIEW 1:24000

SAMPLE INFORMATION

COLLECTION DATE..... 1948/05/22
WATER SAMPLING TEMP.... 85.0
WATER FLOW RATE..... 189.

WATER ANALYSIS W
 ANALYST(S)..... USGS
 PH 1)..... 7.3
 SPECIFIC CONDUCTANCE..... 1320.
 TOTAL DISSOLVED SOLIDS... 905.

SOLUTE ANALYSIS (WATER)				UNITS USED..... PPM			
LI	NA	K	RB	CS	NA+K		
	268.	8.8					
MG	CA	SR	BA	CA+MG			
1.4	8.5						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU			
			0.02				
ZN	HG	B	HB02	AL	PB	AS	SR U
		9.9					
F	CL	BR	I				
6.9	146.						
NH4	NO3	P04	SI02	S04	C03	HC03	
	0.3		140.	223.		208.	

REFERENCES: TRAUGER, 1950

RECORD 00093

RECORD IDENTIFICATION
 RECORD NO.... 0000691
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. CRUMP SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-15.0 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... LAKE
 LONGITUDE..... 119-53.0 W

TOWNSHIP RANGE SECTION 1/4 1/4
 38S 24E 27
 MAP REFERENCE: ADEL 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 78.0
 WATER FLOW RATE..... 200.

DEPOSITS OR ALTERATION: SINTER; TRAVERTINE

WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH NITRIC ACID, DILUTED

WATER ANALYSIS W

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.26
 SPECIFIC CONDUCTANCE..... 1490.

ISOTOPIC DATA
 DEL O(18) OF WATER..... -13.28
 DEL D OF WATER..... -115.5

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.4	280.	11.	0.07	0.1				
MG	CA	SR	BA	CA+MG				
0.2	16.	0.12	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.03		L 0.02	L 0.01				
ZN	HG	B	HR02	AL	PB	AS	SB	U
	0.0004	13.6		0.017	L 0.06	0.46	L 0.2	
F	CL	BR	I					
4.9	240.	0.4	0.1					
NH4	NO3	PO4	SI02	S04	C03	HC03		
0.60		0.58	180.	200.	L 1.	153.		

OTHER SOLUTES & GASES O2+AR=5

GAS ANALYSIS

G

UNITS USED..... VOLUME %

CO2	H2S	N2	O2
14.		75.	
H2	CH4	C2H6	HE
	6.		

OTHER GASES: O2+AR--5

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00094

RECORD IDENTIFICATION

RECORD NO.... 0002223
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. CRUMP SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-15.0 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... LAKE
 LONGITUDE..... 119-53.0 W

TOWNSHIP RANGE SECTION 1/4 1/4
 38S 24E 27
 MAP REFERENCE: ADEL 1124000

SAMPLE INFORMATION

COLLECTION DATE..... 1948/09/16
 COLLECTOR(S)..... TRAUGER, F. D.
 WATER SAMPLING TEMP.... 40.0
 WATER FLOW RATE..... 19.

WATER ANALYSIS

ANALYST(S)..... W SINGLETON, E. L.
 PH 1)..... 8.7
 SPECIFIC CONDUCTANCE..... 935.
 TOTAL DISSOLVED SOLIDS... 662.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K				
	175.	8.7							
MG	CA	SR	BA	CA+MG					
2.	18.								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
			0.04						
ZN	HG	B	HB02	AL	PB	AS	SB	U	
		7.3							
F	CL	BR	I						
1.9	150.								
NH4	NO3	P04	SI02	S04	C03	HC03			
	1.5		125.	116.	N	130.			

REFERENCES: TRAUGER, 1950

RECORD 00095

RECORD IDENTIFICATION

RECORD NO..... 0002220
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. CRUMP WELL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... LAKE

TOWNSHIP RANGE SECTION 1/4 1/4
 38S 24E 34
 MAP REFERENCE: ADEL 1124000

OTHER LOCALITY INFORMATION: 120 FT. NORTH OF WELL DRILLED 1958-1959

SAMPLE INFORMATION

COLLECTION DATE..... 1960/09/23
 COLLECTOR(S)..... WHITE, DON AND SIGVALDASON, G.
 WATER SAMPLING TEMP.... 88.0
 OTHER SAMPLE INFORMATION: WELL ERUPTS PERIODICALLY AS GEYSER

WATER ANALYSIS

W
 ANALYSIS DATE..... 1961/03/01
 ANALYST(S)..... WHITEHEAD, H. C.
 PH 1)..... 8.1
 SPECIFIC CONDUCTANCE..... 1460.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K			
0.33	281.	10.						
ZN	HG	B	HBO2	AL	PB	AS	SB	U
		13.						
F	CL	BR	I					
	248.							

REFERENCES: PERSONAL FILE OF DON WHITE, USGS, MENLO PARK

RECORD 00096

RECORD IDENTIFICATION

RECORD NO..... 0002221
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. CRUMP WELL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... LAKE

TOWNSHIP RANGE SECTION 1/4 1/4
 38S 024E 34

MAP REFERENCE: ADEL 1:24000

OTHER LOCALITY INFORMATION: 4 MI. NORTH OF ADEL

SAMPLE INFORMATION

COLLECTION DATE..... 1959/07/26
 COLLECTOR(S)..... WALKER, G.
 DEPTH..... VAN DENBURGH, A.S. AND ROGERS, S.M.

WATER

POINT OF COLLECTION.... AT SURFACE, IN POLY. DISH PAN
 WATER SAMPLING TEMP.... 99.0
 WATER FLOW RATE..... 3785.

OTHER SAMPLE INFORMATION: CLEAR JET IS 150-200 FT. HIGH AS OF SEPT. 15, 1959. 4 FT. OF 18IN. CASING AT TOP. DEPTH OF WELL- 1684 FT., 15 FT. OF 20 IN. CASING AT SURFACE; SAMPLE TAKEN OF CONTINUOUS GEYSER.

WATER ANALYSIS

W
 ANALYSIS DATE..... 1959/11/03

ANALYST(S)..... DENBURGH, ROGERS
 PH 1)..... 8.7
 SPECIFIC CONDUCTANCE..... 1580.
 TOTAL DISSOLVED SOLIDS... 1130.

SOLUTE ANALYSIS (WATER)				UNITS USED..... PPM				
LI	NA	K	RB	CS	NA+K			
0.39	298.	12.						
MG	CA	SR	BA	CA+MG				
0.5	10.	0.31						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	N		0.15					
ZN	HG	B	H802	AL	PB	AS	SB	U
		18.		0.65				
F	CL	BR	I					
5.2	263.	0.9	0.1					
02	N2	CO2	SO2	H2S	H2	CH4		
				0.3				
NH4	NO3	PO4	SiO2	SO4	CO3	HCO3		
N	1.0	1.4	169.	209.	36.	70.		

REFERENCES: PERSONAL FILE OF DON WHITE, USGS, MENLO PARK

RECORD 00097

RECORD IDENTIFICATION
 RECORD NO.... 000717
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. FISHER HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-17.86 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... LAKE
 LONGITUDE..... 119-46.54 W

TOWNSHIP RANGE SECTION 1/4 1/4
 38S 25E 10
 MAP REFERENCE: CRUMP LAKE 1:24000, ADEL 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 68.0
 WATER FLOW RATE..... 70.

DEPOSITS OR ALTERATION: TRAVERTINE
 WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH NITRIC ACID, DILUTED

WATER ANALYSIS W
 ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.93
 SPECIFIC CONDUCTANCE..... 513.

ISOTOPIC DATA
 DEL D OF WATER..... -117.0

SOLUTE ANALYSIS (WATER)				UNITS USED..... MG/L				
LI	NA	K	RB	CS	NA+K			
0.04	92.	7.9	0.02	L 0.1				
MG	CA	SR	BA	CA+MG				
1.0	8.4	0.05						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	L 0.02		L 0.02	L 0.01				
ZN	HG	B	HBO2	AL	PB	AS	SB	U
	L 0.0001	2.2		0.011	L 0.06	0.10	L 0.2	
F	CL	BR	I					
3.5	56.	0.4	0.03					
NH4	NO3	PO4	SI02	S04	CO3	HCO3		
0.18		0.18	77.	59.	1.	105.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00098

RECORD IDENTIFICATION
 RECORD NO.... 0000689
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING	
NAME OF SAMPLE SOURCE.. HUNTERS HOT SPRINGS	
COUNTRY CODE.....	COUNTRY NAME..... UNITED STATES
STATE/PROVINCE..... OREGON	COUNTY..... LAKE
LATITUDE..... 42-12.0 N	LONGITUDE..... 120-21.6 W

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 20E 04
 MAP REFERENCE: LAKEVIEW 1:24000, KLAMATH FALLS 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 96.0
 WATER FLOW RATE..... 2300.
 DEPOSITS OR ALTERATION: TRAVERTINE, SINTER
 WATER TREATMENT DATA: PRESSURE FILTERED THROUGH A .45 MICROMETRE - MEMBRANE FILTER, METAL ANALYSES ACIDIFIED WITH

NITRIC ACID, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.77
 SPECIFIC CONDUCTANCE..... 1120.

ISOTOPIC DATA

DEL O(18) OF WATER..... -14.32
 DEL D OF WATER..... -119.0

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
0.15	210.	8.5	0.04	L 0.1					
MG	CA	SR	BA	CA+MG					
L 0.1	13.	0.32	L 0.1						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	L 0.02		L 0.02	L 0.01					
ZN	HG	B	HBO2	AL	PB	AS	SB	U	
	0.0004	6.9		0.034	L 0.06	0.06	L 0.2		
F	CL	BR	I						
4.4	120.	0.4	0.08						
NH4	NO3	PO4	SI02	S04	CO3	HCO3			
0.31		0.25	140.	260.	L 1.	79.			

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00099

RECORD IDENTIFICATION

RECORD NO.... 0002226
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. HUNTERS HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-12.0 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... LAKE
 LONGITUDE..... 20-21.6 W

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 20E 04

OTHER LOCALITY INFORMATION: 2 MI. NORTH OF LAKEVIEW, ORE. 30 OR MORE FT. NORTHWEST OF BATHHOUSE

SAMPLE INFORMATION

SAMPLE NO..... LAB# 534
 COLLECTION DATE..... 1957/10/29
 COLLECTOR(S)..... FETH, J. AND ROGERS, S. M.
 POINT OF COLLECTION..... MORNING - GLORY TYPE POOL LINED WITH SILT AND CLAY

WATER SAMPLING TEMP.... 86.0
 WATER FLOW RATE..... L 19.

WATER ANALYSIS W
 ANALYSIS DATE..... 1958/02/17
 ANALYST(S)..... SCHUCH, J. P.
 PH 1)..... 8.4
 SPECIFIC CONDUCTANCE..... 1140.
 TOTAL DISSOLVED SOLIDS... 821.

SOLUTE ANALYSIS (WATER)				UNITS USED..... PPM				
LI	NA	K	RE	CS	NA+K			
	208.	10.						
MG	CA	SR	BA	CA+MG				
2.4	8.0							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	N		0.01	N				
ZN	HG	B	HR02	AL	PB	AS	SB	U
N		7.1		N	N			
F	CL	BR	I					
4.5	120.							
NH4	NO3	PO4	SI02	S04	C03	HC03		
	0.3		140.	258.	5.	64.		

REFERENCES: PERSONAL FILE OF DON WHITE, USGS, MENLO PARK

RECORD 00100

RECORD IDENTIFICATION
 RECORD NO.... 0002228
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. HUNTERS HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-12.0 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... LAKE
 LONGITUDE..... 120-21.6 W

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 20E 04

OTHER LOCALITY INFORMATION: 2 MI. NORTH OF LAKEVIEW, ORE.

SAMPLE INFORMATION

SAMPLE NO..... LAB# 145
 COLLECTION DATE..... 1956/10/18
 COLLECTOR(S)..... BAILEY, E. H.
 WATER SAMPLING TEMP.... 98.0
 WATER FLOW RATE..... G 19.

WATER ANALYSIS W
 ANALYST(S)..... ROBERSON, C. E.
 PH 1)..... 8.3
 SPECIFIC CONDUCTANCE..... 1110.

SOLUTE ANALYSIS (WATER) UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K			
0.2	209.	9.5						
MG	CA	SR	BA	CA+MG				
N	12.	0.5						
ZN	HG	B	H802	AL	PB	AS	SB	U
		7.2						
F	CL	BR	I					
	116.							
NH4	NO3	PO4	SI02	S04	CO3	HC03		
	7.2		146.	265.	6.	62.		

REFERENCES: PERSONAL FILE OF DON WHITE, USGS, MENLO PARK

RECORD 00101

RECORD IDENTIFICATION
 RECORD NO.... 0002224
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. LEITHEAD HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... LAKE

TOWNSHIP RANGE SECTION 1/4 1/4
 39S 20E 27
 MAP REFERENCE: LAKEVIEW A124000

SAMPLE INFORMATION
 COLLECTION DATE..... 1948/06/23
 WATER SAMPLING TEMP.... 69.4
 WATER FLOW RATE..... 186.

WATER ANALYSIS W
 ANALYST(S)..... USGS
 PH 1)..... 7.7
 SPECIFIC CONDUCTANCE..... 813.
 TOTAL DISSOLVED SOLIDS... 531.

SOLUTE ANALYSIS (WATER) UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K
	152.	2.2			

MG	CA	SR	BA	CA+MG				
0.4	15.							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
			0.06					
ZN	HG	B	HB02	AL	PB	AS	SB	U
		7.0						
F	CL	BR	I					
3.1	99.							
NH4	NO3	PO4	SI02	S04	C03	HC03		
	0.2		66.	152.		84.		

OTHER SOLUTES & GASES H2S ODOR PRESENT
REFERENCES: TRAUGER, 1950

RECORD 00102

RECORD IDENTIFICATION
RECORD NO.... 0000707
CROSS INDEX NO..
RECORD TYPE.....

REPORTER
NAME..... SANFORD, LINDA
DATE..... 76/03
ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
NAME OF SAMPLE SOURCE.. SUMMER LAKE HOT SPRING
COUNTRY CODE.....
STATE/PROVINCE..... OREGON
LATITUDE..... 42-43.48 N

COUNTRY NAME..... UNITED STATES
COUNTY..... LAKE
LONGITUDE..... 120-38.73 W

TOWNSHIP RANGE SECTION 1/4 1/4
33S 17E 12

MAP REFERENCE: SLIDE MTN. 1:24000; KLAMATH FALLS 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
COLLECTOR(S)..... BARNES GROUP
WATER SAMPLING TEMP.... 43.0
WATER FLOW RATE..... 75.
DEPOSITS OR ALTERATION: TRAVERTINE
WATER TREATMENT DATA: PRESSURE-FILTERED THROUGH A .45 MICROMETRE MEMBRANE. PORTION ACIDIFIED, DILUTED.
OTHER SAMPLE INFORMATION: MIXED WATERS

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
ANALYST(S)..... BARNES GROUP
PH 1)..... 8.43
SPECIFIC CONDUCTANCE..... 1790.

ISOTOPIC DATA

DEL O(18) OF WATER..... -13.32
DEL D OF WATER..... -115.0

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
0.15	390.	4.6	L 0.02	L 0.1					
MG	CA	SR	BA	CA+MG					
0.1	2.1	0.07	L 0.1						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	L 0.02		L 0.02	0.02					
ZN	HG	B	H802	AL	PB	AS	SB	U	
		6.9		L 0.06		0.02	L 0.2		
F	CL	BR	I						
2.2	280.	1.							
NH4	NO3	PO4	SI02	S04	CO3	HC03			
		0.18	94.	120.	10.	406.			

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00103

RECORD IDENTIFICATION

RECORD NO.... 0002229
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. SUMMER LAKE HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-43.48 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... LAKE
 LONGITUDE..... 120-38.73 N

TOWNSHIP RANGE SECTION 1/4 1/4
 33S 17E 12
 MAP REFERENCE: SLIDE MTN. 1:24000

SAMPLE INFORMATION

COLLECTION DATE..... 1948/10/08
 COLLECTOR(S)..... TRAUGER, F.D.
 WATER SAMPLING TEMP.... 46.7
 WATER FLOW RATE..... 79.
 DEPOSITS OR ALTERATION: SILICEOUS SINTER
 OTHER SAMPLE INFORMATION: 3 MAIN SPRINGS

WATER ANALYSIS

ANALYST(S)..... USGS
 PH 1)..... 8.5
 SPECIFIC CONDUCTANCE.... 1760.
 TOTAL DISSOLVED SOLIDS... 1120.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA 399.	K 6.8	RB	CS	NA+K				
MG 0.4	CA 1.4	SR	BA	CA+MG					
MN+3	MN(TOT)	FE+3	FE(TOT) 0.03	CU					
ZN	HG	B 1.0	HB02	AL	PB	AS	SB	U	
F 2.2	CL 285.	BR	I						
NH4	NO3 0.1	PO4	SI02 96.	S04 111.	C03	HC03 374.			

REFERENCES: TRAUGER, 1950

RECORD 00104

RECORD IDENTIFICATION
 RECORD NO.... 0000703
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. BELKNAP HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 44-11.62 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... LANE
 LONGITUDE..... 122-03.19 W

TOWNSHIP RANGE SECTION 1/4 1/4
 16S 06E 11
 MAP REFERENCE: MCKENZIE BRIDGE 1:62500, SALEM 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 71.0
 WATER FLOW RATE..... 300.
 WATER TREATMENT DATA: PRESSURE-FILTERED THROUGH A .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED.

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.62
 SPECIFIC CONDUCTANCE..... 4300.

ISOTOPIC DATA

DEL O(18) OF WATER..... -11.74
 DEL D OF WATER..... -95.8

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.95	690.	15.	0.05	L 0.1				
MG	CA	SR	BA	CA+MG				
0.2	210.	1.4						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.02		0.02	0.01				
ZN	HG	B	HBO2	AL	PB	AS	S8	U
	L 0.0001	6.4			L 0.06	0.35	L 0.2	
F	CL	BR	I					
1.2	1300.	33.	0.2					
NH4	NO3	PO4	SI02	S04	CO3	HC03		
		0.21	96.	170.	L 1.	17.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00105

RECORD IDENTIFICATION
 RECORD NO..... 0002230
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. BELKNAP HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 44-11.62 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... LANE
 LONGITUDE..... 122-03.19 W

TOWNSHIP RANGE SECTION 1/4 1/4
 16S 006E 11
 MAP REFERENCE: MCKENZIE BRIDGE 1:62500

SAMPLE INFORMATION

COLLECTION DATE..... 1903/00/00
 WATER SAMPLING TEMP.... 86.7
 WATER FLOW RATE..... 284.

WATER ANALYSIS

TOTAL DISSOLVED SOLIDS... 2506.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K
	Q 364.	Q 69.			
MG	CA	SR	BA	CA+MG	
Q 13.	Q 455.				
MN+3	MN(TOT)	FE+3	FE(TOT)	CU	
	T				

F CL BR I
 Q 1343.

NH4 N03 P04 SI02 S04 C03 HC03
 80.9 Q 168.

OTHER SOLUTES & GASES CHEMISTRY RECALCULATED; REPORTED:
 FE2O3+AL2O3=3,CACL2=1066.9,CASO4=238.6,MGCL2=49.8,NACL=925,KCL=131.8 PPM
 REFERENCES: PERSONAL FILE OF DON WHITE, USGS, MENLO PARK
 LANGILLE ET AL, 1903, USGS PROF. PAPER 9, P. 77

RECORD 00106

RECORD IDENTIFICATION
 RECORD NO.... 0015423
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... BOWEN, RICHARD G.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. BIGELOW HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 44-14.3 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... LANE
 LONGITUDE..... 122-03.5 W

TOWNSHIP RANGE SECTION 1/4 1/4
 15S 06E 26

USGS WRD WELL-SPRING NUMBERING SYSTEM
 15S/6E-26BA
 MAP REFERENCE: MCKENZIE BRIDGE 1:62500, SALEM 1:250000

SAMPLE INFORMATION

SAMPLE NO..... #S 76-053
 COLLECTION DATE..... 1976/03/08
 COLLECTOR(S)..... BOWEN, RICHARD G.
 POINT OF COLLECTION..... SPRING ORIFICE
 WATER SAMPLING TEMP.... 61.0
 WATER FLOW RATE..... 7.6

WATER ANALYSIS

ANALYSIS DATE..... 1976/06/25
 ANALYST(S)..... JOHNSON, ELLEN M.
 PH 1)..... 7.8
 SPECIFIC CONDUCTANCE.... 3800.
 TOTAL DISSOLVED SOLIDS... 2566.

AT 61.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RR	CS	NA+K
1.1	540.	16.6			
MG	CA	SR	BA	CA+MG	
1.	188.				

MN+3	MN(TOT) L 0.005	FE+3	FE(TOT) 0.1	CU				
ZN	HG	B 6.5	HBQ2	AL L 0.05	PB	AS 0.11	SB	U
F 1.37	CL 1148.	BR	I					
NH4 0.39	N03	P04 0.32	SI02 68.9	S04 102.	C03	HC03		

RECORD 00107

RECORD IDENTIFICATION
 RECORD NO.... 0000787
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/03
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. COUGAR RESERVOIR HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... LANE

TOWNSHIP RANGE SECTION 1/4 1/4
 17S 05E 07

MAP REFERENCE: MCKENZIE BRIDGE 1:62500, SALEM 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1973/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 44.0
 WATER FLOW RATE..... 200.
 WATER TREATMENT DATA: PRESSURE-FILTERED THROUGH A .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1973/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.76
 SPECIFIC CONDUCTANCE..... 2890.

ISOTOPIC DATA

DEL O(18) OF WATER..... -11.97
 DEL D OF WATER..... -92.5

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
0.52	392.	6.3	0.03	L 0.1	
MG	CA	SR	BA	CA+MG	
0.1	225.	2.0	L 0.1		
MN+3	MN(TOT)	FE+3	FE(TOT)	CU	

	L 0.02		L 0.02	L 0.01				
ZN	HG	B	H802	AL	PB	AS	SB	U
	0.0005	5.1			L 0.06		L 0.2	
F	CL	BR	I					
0.8	788.							
NH4	NO3	PO4	SI02	S04	CO3	HC03		
			50.	260.	L 1.	19.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00108

RECORD IDENTIFICATION

RECORD NO.... 0015424
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. FOLEY SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 44-09.0 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... LANE
 LONGITUDE..... 122-06. W

TOWNSHIP RANGE SECTION 1/4 1/4
 16S 06E 28

USGS WRD WELL-SPRING NUMBERING SYSTEM

16S/6E-28BB

MAP REFERENCE: MCKENZIE BRIDGE 1:62500, SALEM 1:250000

SAMPLE INFORMATION

SAMPLE NO..... WS 76-055
 COLLECTION DATE..... 1976/03/08
 COLLECTOR(S)..... BOWEN, RICHARD
 POINT OF COLLECTION..... MAIN ORIFICE OF SPRING
 WATER SAMPLING TEMP.... 80.6
 WATER FLOW RATE..... 227.
 DEPOSITS OR ALTERATION: SILICEOUS SINTER

WATER ANALYSIS

ANALYSIS DATE..... 1976/06/28
 ANALYST(S)..... JOHNSON, E.M., ORE DEPT ENV QUALITY
 PH 1)..... 8.
 SPECIFIC CONDUCTANCE.... 4800.
 ALKALINITY..... 13.
 TOTAL DISSOLVED SOLIDS... 3333.

AT 80.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
0.96	475.	11.2			
MG	CA	SR	BA	CA+MG	

0.8	494.							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
			L 0.05					
ZN	HG	B	HBO2	AL	PB	AS	SB	U
		10.2		L 0.01		0.21		
F	CL	BR	I					
0.81	1304.							
NH4	NO3	PO4	SI02	S04	CO3	HC03		
L 0.01		0.06	60.4	550.				

RECORD 00109

RECORD IDENTIFICATION

RECORD NO..... 0002232
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. KITSON HOT SPRING S
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON

COUNTRY NAME..... UNITED STATES
 COUNTY..... LANE

TOWNSHIP RANGE SECTION 1/4 1/4
 22S 003E 06

OTHER LOCALITY INFORMATION: 7 MI. SOUTHEAST OF OAKRIDGE, ORE.

SAMPLE INFORMATION

SAMPLE NO..... LAB# 668
 COLLECTION DATE..... 1958/03/30
 COLLECTOR(S)..... FETH, J.
 POINT OF COLLECTION..... IN CONCRETE BASIN
 WATER SAMPLING TEMP.... 44.4
 WATER FLOW RATE..... 66.

WATER ANALYSIS

W
 ANALYSIS DATE..... 1958/09/30
 ANALYST(S)..... SCHUCH, J. P.
 PH 1)..... 7.4
 SPECIFIC CONDUCTANCE.... 10500.
 TOTAL DISSOLVED SOLIDS... 6340.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K
1.8	1450.	28.			
MG	CA	SR	BA	CA+MG	
5.7	726.				
MN+3	MN(TOT)	FE+3	FE(TOT)	CU	
	N		0.01		

ZN	HG	B	HB02	AL	PB	AS	SB	U
		25.		0.27		N		
F	CL	BR	I					
2.8	3420.	6.6	0.9					
O2	N2	CO2	S02	H2S	H2	CH4		
				N				
NH4	N03	P04	SI02	S04	CO3	HCO3		
0.5	2.7	0.54	47.	197.	N	27.		

OTHER SOLUTES & GASES N02=.02 PPM

COMMENTS: SOME SAMPLES IN SOLUTION WHEN ANALYZED
 REFERENCES: MADISON, 1966

RECORD 00110

RECORD IDENTIFICATION

RECORD NO.... 0000783
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. MCCREDIE SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-42.6 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... LANE
 LONGITUDE..... 122-17.3 W

TOWNSHIP RANGE SECTION 1/4 1/4
 21S 04E 36

MAP REFERENCE: OAKRIDGE 1:625000, ROSEBERG 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1974/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 73.
 WATER TREATMENT DATA: PRESSURE-FILTERED THROUGH A .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED

WATER ANALYSIS

W G
 ANALYSIS DATE..... 1974/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.29
 SPECIFIC CONDUCTANCE..... 6730.
 ALKALINITY..... 21.

ISOTOPIC DATA

DEL D OF WATER..... -94.0

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
1.4	1000.	22.	0.11	0.1	

MG	CA	SR	BA	CA+MG				
0.9	460.		L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.10		0.02	0.02				
ZN	HG	B	HBO2	AL	PB	AS	SB	U
		18.		0.010	L 0.06		L 0.2	
F	CL	BR	I					
2.7	2200.							
NH4	NO3	PO4	SI02	S04	C03	HC03		
0.26		0.61	79.	240.				

OTHER SOLUTES & GASES 02*AR=1

GAS ANALYSIS

UNITS USED..... VOLUME %

CO2	H2S	N2	O2
L 1.		98.	
H2	CH4	C2H6	HE
	L 1.		

REFERENCES: MARINER AND OTHERS, 1975

RECORD 00111

RECORD IDENTIFICATION

RECORD NO.... 0015425
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. MCCREDIE SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-42.6 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... LANE
 LONGITUDE..... 122-17.3 W

TOWNSHIP RANGE SECTION 1/4 1/4
 21S 04E 36

USGS WRD WELL-SPRING NUMBERING SYSTEM

21S/4E-36BC
 MAP REFERENCE: OAKRIDGE 1:62500, ROSEBERG 1:250000

SAMPLE INFORMATION

SAMPLE NO..... WS 76-062 ORE DEPT ENV QUAL
 COLLECTION DATE..... 1976/03/10
 COLLECTOR(S)..... BOWEN, R.
 POINT OF COLLECTION..... CONCRETE CISTERN
 WATER SAMPLING TEMP.... 71.0
 WATER FLOW RATE..... 76.

WATER ANALYSIS

ANALYSIS DATE..... 1976/06/28
 ANALYST(S)..... JOHNSON, ELLEN M., OREGON DEPT. ENV. QUAL.
 PH 1)..... 7.4
 SPECIFIC CONDUCTANCE..... 6770.
 ALKALINITY..... 16.
 TOTAL DISSOLVED SOLIDS... 4420.

AT 71.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
1.98	910.	28.						
MG	CA	SR	BA	CA+MG				
0.9	500.							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.05		0.1					
ZN	HG	B	HB02	AL	PB	AS	SB	U
		17.8			L 0.05	0.08		
F	CL	BR	I					
2.68	2232.							
NH4	NO3	PO4	SI02	S04	CO3	HC03		
0.21		0.11	65.4					

RECORD 00112

RECORD IDENTIFICATION

RECORD NO.... 0015426
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
 DATE..... 77/09
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. RYDER HOT SPRING - UPPER SPRING
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 44-04.8 N
 COUNTRY NAME..... UNITED STATES
 COUNTY..... LANE
 LONGITUDE..... 122-14.2 W

TOWNSHIP RANGE SECTION 1/4 1/4
 17S 05E 20

USGS WRD WELL-SPRING NUMBERING SYSTEM
 17S/5E-20BB

MAP REFERENCE: MCKENZIE BRIDGE 1:62500, SALEM 1:250000

SAMPLE INFORMATION

SAMPLE NO..... WS-76 ORE DEPT ENVIRONMENTAL QUALITY
 COLLECTION DATE..... 1976/03/08
 COLLECTOR(S)..... BOWEN, R.
 POINT OF COLLECTION..... UPPER SPRING
 WATER SAMPLING TEMP.... 42.0

WATER FLOW RATE..... 114.
 OTHER SAMPLE INFORMATION: SEVERAL WARM SPRINGS IN CREEK .

WATER ANALYSIS W
 ANALYSIS DATE..... 1976/06/28
 ANALYST(S)..... JOHNSON, ELLEN M.
 PH 1)..... 8.2
 SPECIFIC CONDUCTANCE..... 2660.
 ALKALINITY..... 15.
 TOTAL DISSOLVED SOLIDS... 1763.

SOLUTE ANALYSIS (WATER)				UNITS USED..... MG/L			
LI	NA	K	RB	CS	NA+K		
0.64	320.	6.8					
MG	CA	SR	BA	CA+MG			
0.2	196.						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU			
	L 0.05		0.1				
ZN	HG	B	HBO2	AL	PB	AS	SB
		6.2		L 0.05		0.10	U
F	CL	BR	I				
0.87	693.						
NH4	NO3	PO4	SI02	S04	C03	HC03	
0.12		0.08	47.	185.			

RECORD 00113

RECORD IDENTIFICATION
 RECORD NO..... 0015401
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... BOWEN, RICHARD G.
 DATE..... 77/08
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. WALL CREEK WARM SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-48.5 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... LANE
 LONGITUDE..... 122-18.2 W

TOWNSHIP RANGE SECTION 1/4 1/4
 20S 04E 26

USGS WRD WELL-SPRING NUMBERING SYSTEM
 20S/4E-26BC

MAP REFERENCE: SARDINE BUTTE 1:62500, ROSEBERG 1:250000

SAMPLE INFORMATION

SAMPLE NO..... WS76-064 ORE. DEPT. ENV. QUAL.
 COLLECTION DATE..... 1976/03/10
 COLLECTOR(S)..... BOWEN, RICHARD G.

POINT OF COLLECTION..... LOWER POOL
 WATER SAMPLING TEMP..... 41.0
 WATER FLOW RATE..... 11.

WATER ANALYSIS W
 ANALYSIS DATE..... 76/06/28
 ANALYST(S)..... JOHNSON, ELLEN M., ORE. DEPT. ENV. QUAL.
 PH 1)..... Q 7.2
 2)..... 7.2 LAB
 SPECIFIC CONDUCTANCE..... 2340.
 ALKALINITY..... 34.
 TOTAL DISSOLVED SOLIDS... 1461.

SOLUTE ANALYSIS (WATER)		UNITS USED.....		MG/L
LI	NA	K	RB	CS NA+K
0.57	315.	10.8		
MG	CA	SR	BA	CA+MG
1.	130.			
MN+3	MN(TOT)	FE+3	FE(TOT)	CU
	L 0.05	0.05		
ZN	HG	B	HB02	AL PB AS SB U
		6.6		L 0.05 0.07
F	CL	BR	I	
4.1	602.			
NH4	NO3	PO4	SI02	S04 CO3 HC03
0.1		0.16	62.7	108.

RECORD 00114

RECORD IDENTIFICATION
 RECORD NO..... 0015412
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... BOWEN, RICHARD G.
 DATE..... 78/05
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. ALKALI FLAT GRADIENT WELL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 44-07.0 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... MALHEUR
 LONGITUDE..... 117-14.0 W

TOWNSHIP RANGE SECTION 1/4 1/4
 17S 45E 08

USGS WRD WELL-SPRING NUMBERING SYSTEM
 17S/45E-8AA
 MAP REFERENCE: MOORES HOLLOW 1:62500, ROISE 1:250000

SAMPLE INFORMATION

SAMPLE NO..... ORE DEPT ENVIRONMENTAL QUALITY

COLLECTION DATE..... 1975/05/08
 COLLECTOR(S)..... HULL, D. A.
 DEPTH..... 60.
 WATER
 POINT OF COLLECTION.... WELL HEAD
 WATER SAMPLING TEMP.... 24.0

WATER ANALYSIS W
 ANALYSIS DATE..... 1975/08/21
 ANALYST(S)..... LWS
 PH 1)..... Q 8.3
 SPECIFIC CONDUCTANCE..... 2400.
 ALKALINITY..... 115.
 TOTAL DISSOLVED SOLIDS... 1381.

SOLUTE ANALYSIS (WATER)				UNITS USED..... MG/L				
LI	NA	K	RB	CS	NA+K			
0.4	482.	6.7						
MG	CA	SR	BA	CA+MG				
0.5	16.4							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.05		0.1					
ZN	HG	B	H802	AL	PB	AS	SB	U
		14.		0.01		0.001		
F	CL	BR	I					
2.2	598.							
NH4	NO3	PO4	SI02	S04	C03	HC03		
0.92	0.03		32.0	135.2				

RECORD 00115

RECORD IDENTIFICATION
 RECORD NO..... 0015411
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... BOWEN, RICHARD G.
 DATE..... 78/05
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY
 SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. ARTESIAN WELL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-41.8 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... MALMEUR
 LONGITUDE..... 117-05.7 W

TOWNSHIP RANGE SECTION 1/4 1/4
 21S 46E 33

USGS WRD WELL-SPRING NUMBERING SYSTEM
 21S/46E-33DD
 MAP REFERENCE: ADRIAN 1:24000, BOISE 1:250000

SAMPLE INFORMATION

SAMPLE NO..... ORE DEPT ENVIRONMENTAL QUALITY
 COLLECTION DATE..... 1977/03/03
 COLLECTOR(S)..... BOWEN, R. AND HULL, D.
 WATER
 POINT OF COLLECTION.... WELL HEAD
 WATER SAMPLING TEMP.... 46.0

WATER ANALYSIS

ANALYSIS DATE..... 1977/04/27
 ANALYST(S)..... BANERJEE, KALA C.
 PH 1)..... 9.5
 2)..... 9.5
 SPECIFIC CONDUCTANCE.... 670.
 ALKALINITY..... 77.
 TOTAL DISSOLVED SOLIDS... 443.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
0.04	124.	0.8							
MG	CA	SR	BA	CA+MG					
0.1	1.8								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	L 0.05		L 0.1						
ZN	HG	B	HB02	AL	PB	AS	SB	U	
		0.31		0.1		0.01			
F	CL	BR	I						
2.7	12.2								
NH4	NO3	PO4	SI02	S04	CO3	HC03			
0.8	0.02	0.02	43.7	164.					

RECORD 00116

RECORD IDENTIFICATION

RECORD NO.... 0000723
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. BEULAH HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-56.7 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... MALHEUR
 LONGITUDE..... 118-08.2 W

TOWNSHIP RANGE SECTION 1/4 1/4
 19S 37E 02

MAP REFERENCE: BEULAH 1:62500, BURNS 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 60.0
 WATER FLOW RATE..... 50.
 DEPOSITS OR ALTERATION: SINTER, TRAVERTINE
 WATER TREATMENT DATA: PRESSURE - FILTERED THROUGH .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.56
 SPECIFIC CONDUCTANCE..... 1090.

ISOTOPIC DATA

DEL O(18) OF WATER..... -13.22
 DEL D OF WATER..... -131.7

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.24	200.	6.0	L 0.02	L 0.1				
MG	CA	SR	BA	CA+MG				
0.2	24.	0.17	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.03		L 0.02	0.01				
ZN	HG	B	HBO2	AL	PB	AS	SB	U
	0.0001	4.7		0.006	L 0.06	0.21	L 0.2	
F	CL	BR	I					
4.7	55.	0.1	0.03					
NH4	NO3	PO4	SI02	S04	CO3	HC03		
0.26		0.18	170.	290.	1.	161.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00117

RECORD IDENTIFICATION

RECORD NO.... 0002238
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. HOT SPRING NEAR MCDERMITT
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-04.1 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... MALHEUR
 LONGITUDE..... 117-30.0 W

TOWNSHIP RANGE SECTION 1/4 1/4
 40S 042E 25

OTHER LOCALITY INFORMATION: SEVERAL MILES NORTH OF MCDERMITT AND 1 MILE WEST OF HIGHWAY

SAMPLE INFORMATION

SAMPLE NO..... LAB# 356
 COLLECTION DATE..... 1957/05/17
 COLLECTOR(S)..... WHITE, DON
 WATER SAMPLING TEMP.... 53.5
 WATER FLOW RATE..... 1514.

WATER ANALYSIS

ANALYSIS DATE..... 1958/03/24
 ANALYST(S)..... WHITEHEAD AND SCHUCH
 PH 1)..... 9.2
 SPECIFIC CONDUCTANCE..... 604.
 TOTAL DISSOLVED SOLIDS... 426.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LT	NA	K	RB	CS	NA+K			
N	135.	1.8						
MG	CA	SR	BA	CA+MG				
N	1.2							
ZN	HG	B	HBO2	AL	PB	AS	SB	U
		0.70						
F	CL	BR	I					
7.0	15.							
NH4	NO3	PO4	SI02	S04	CO3	HC03		
	N		90.	46.	43.	176.		

COMMENTS: NO EVIDENCE OF H2S IN FIELD.

REFERENCES: FROM PERSONAL FILE OF DON WHITE, USGS, MENLO PARK

RECORD 00118

RECORD IDENTIFICATION

RECORD NO..... 0015405
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
 DATE..... 78/05
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. JONESBORO WARM SPRING
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-47.5 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... MALHEUR
 LONGITUDE..... 117-57.5 W

TOWNSHIP RANGE SECTION 1/4 1/4
 20S 39E 29

USGS WRD WELL-SPRING NUMBERING SYSTEM
 20S/39E-29DC

MAP REFERENCE: WESTFALL BUTTE 1:62500, BOISE 1:250000

SAMPLE INFORMATION

SAMPLE NO..... AMAX EXPLORATION 89873
 COLLECTOR(S)..... DELLECHAIE, F.
 WATER SAMPLING TEMP.... 44.5

WATER ANALYSIS

PH 1)..... 9.6

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
L 0.1	72.	0.7							
MG	CA	SR	BA	CA+MG					
L 0.1	1.0								
ZN	HG	B	HB02	AL	PB	AS	SB	U	
		L 0.1							
F	CL	BR	I						
0.8	11.								
NH4	NO3	PO4	SI02	S04	C03	HC03			
			70.	38.	48.	50.			

RECORD 00119

RECORD IDENTIFICATION

RECORD NO.... 0015407
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
 DATE..... 78/05
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. JUNTURA WARM SPRING #1
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-45.5 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... MALHEUR
 LONGITUDE..... 118-05.5 W

TOWNSHIP RANGE SECTION 1/4 1/4
 21S 38E 09

USGS WRD WELL-SPRING NUMBERING SYSTEM

21S/38E-9C
 MAP REFERENCE: BEULAH 1:62500, BURNS 1:250000

SAMPLE INFORMATION

SAMPLE NO..... AMAX EXPLORATION 90214
 COLLECTOR(S)..... DELLECHAIE, F.
 WATER SAMPLING TEMP.... 25.0

WATER ANALYSIS

PH 1)..... 9.4

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K			
L 0.1	24.	8.2						
MG	CA	SR	BA	CA+MG				
21.	48.							
ZN	HG	B	H802	AL	PB	AS	SB	U
		L 1.0						
F	CL	BR	I					
1.0	120.							
NH4	NO3	PO4	SI02	SO4	CO3	HC03		
			55.	16.	N	204.		

RECORD 00120

RECORD IDENTIFICATION

RECORD NO.... 0015409
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
 DATE..... 78/05
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. JUNTURA WARM SPRING #2
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-45.5 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... MALHEUR
 LONGITUDE..... 118-05.5 W

TOWNSHIP RANGE SECTION 1/4 1/4
 21S 38E 17

USGS WRD WELL-SPRING NUMBERING SYSTEM

21S/38E-17B
 MAP REFERENCE: REULAH 1:62500, BURNS 1:250000

SAMPLE INFORMATION

SAMPLE NO..... AMAX EXPLORATION 90215
 COLLECTOR(S)..... DELLECHIE, F.
 WATER SAMPLING TEMP.... 35.0

WATER ANALYSIS

PH 1)..... 9.7

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K			
L 0.1	78.	0.8						
MG	CA	SR	BA	CA+MG				
L 0.1	1.0							
ZN	HG	B	H802	AL	PB	AS	SB	U
		L 1.0						

F CL BR I
 1.3 140.
 NH4 NO3 PO4 SI02 S04 C03 HC03
 79. 43. 28. 76.

RECORD 00121

RECORD IDENTIFICATION

RECORD NO.... 0000784
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. MITCHELL BUTTE HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-46.0 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... MALHEUR
 LONGITUDE..... 117-09.2 W

TOWNSHIP RANGE SECTION 1/4 1/4
 21S 45E 12

MAP REFERENCE: MITCHELL BUTTE 1:24000, BOISE 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 62.0
 WATER FLOW RATE..... 60.
 DEPOSITS OR ALTERATION: TRAVERTINE
 WATER TREATMENT DATA: PRESSURE-FILTERED THROUGH A .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 8.69
 SPECIFIC CONDUCTANCE..... 559.

ISOTOPIC DATA

DEL O(18) OF WATER..... -16.68
 DEL D OF WATER..... -137.3

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.03	110.	1.6	L 0.02	L 0.1				
MG	CA	SR	BA	CA+MG				
L 0.1	4.6	L 0.05	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	L 0.02		L 0.02	L 0.01				
ZN	HG	B	H802	AL	PB	AS	SB	U
	0.0001	0.49		0.015	L 0.06	L 0.01	L 0.2	

F 10.4 CL 28. BR 0.2 I 0.01
 NH4 0.386 NO3 P04 SI02 S04 C03 HC03
 94. 130. 3. 72.
 REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00122

RECORD IDENTIFICATION
 RECORD NO..... 0000687
 CROSS-INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. NEAL HOT SPRINGS
 COUNTRY CODE..... COUNTRY NAME..... UNITED STATES
 STATE/PROVINCE..... OREGON COUNTY..... MALHEUR
 LATITUDE..... 44-01.4 N LONGITUDE..... 117-27.6 W

TOWNSHIP RANGE SECTION 1/4 1/4
 18S 43E 09
 MAP REFERENCE: JAMIESON 1:62500, BAKER 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 87.0
 WATER FLOW RATE..... 90.
 DEPOSITS OR ALTERATION: SINTER, TRAVERTINE
 WATER TREATMENT DATA: PRESSURE - FILTERED THROUGH A .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED

WATER ANALYSIS

W G
 ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.32
 SPECIFIC CONDUCTANCE..... 1010.

ISOTOPIC DATA

DEL O(18) OF WATER..... -16.52
 DEL D OF WATER..... -138.7

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
0.3	190.	16.	0.09	0.1					
MG	CA	SR	BA	CA+MG					
0.2	8.8	0.16	L 0.1						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	0.06		L 0.02	0.02					
ZN	HG	B	HB02	AL	PB	AS	SB	U	

	0.0001	4.1		0.008	L 0.06	0.02	L 0.2
F	CL	BR	I				
9.4	120.	0.5	0.06				
NH4	NO3	PO4	SI02	S04	C03	HC03	
1.0		0.21	180.	120.	L 1.	198.	

OTHER SOLUTES & GASES 02+AR=12

GAS ANALYSIS

UNITS USED..... VOLUME %

CO2	H2S	N2	O2
		62.	

H2	CH4	C2H6	HE
	6.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00123

RECORD IDENTIFICATION

RECORD NO.... 0015413
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER.....

NAME..... BOWEN, RICHARD G.
 DATE..... 78/05
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. NORTH HARPER BLM WELL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-56.2 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... MALHEUR
 LONGITUDE..... 117-12.6 W

TOWNSHIP RANGE SECTION 1/4 1/4
 19S 45E 09

USGS WRD WELL-SPRING NUMBERING SYSTEM

19S/45E-9DB
 MAP REFERENCE: VALE EAST 1:24000, BOISE 1:250000

SAMPLE INFORMATION

SAMPLE NO..... ORE DEPT OF ENVIRONMENTAL QUALITY
 COLLECTION DATE..... 1976/06/11
 COLLECTOR(S)..... BOWEN, R. G.
 DEPTH..... 212.
 WATER
 POINT OF COLLECTION.... WELL HEAD
 WATER SAMPLING TEMP.... 36.0

WATER ANALYSIS

ANALYSIS DATE..... W 1976/07/07
 ANALYST(S)..... JOHNSON, ELLEN M.
 PH 1)..... Q 8.0
 SPECIFIC CONDUCTANCE..... 714.
 ALKALINITY..... 157.

TOTAL DISSOLVED SOLIDS... 476.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.21	134.	2.2						
MG	CA	SR	BA	CA+MG				
0.5	3.0							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	L 0.05		L 0.05					
ZN	HG	B	H802	AL	PB	AS	SB	U
		0.26		L 0.05		0.05		
F	CL	BR	I					
1.61	4.3							
NH4	NO3	PO4	SI02	S04	C03	HC03		
0.25	0.14	0.13	39.7	121.				

RECORD 00124

RECORD IDENTIFICATION

RECORD NO.... 0000721
 CROSS INDEX NO...
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. UNNAMED HOT SPRINGS NEAR LITTLE VALLEY
 COUNTRY CODE..... COUNTRY NAME..... UNITED STATES
 STATE/PROVINCE..... OREGON COUNTY..... MALHEUR
 LATITUDE..... 43-53.48 N LONGITUDE..... 117-30.00 W

TOWNSHIP RANGE SECTION 1/4 1/4
 19S 43E 30

MAP REFERENCE: HARPER 1:62500, BOISE 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1973/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 70.0
 WATER FLOW RATE..... 550.
 DEPOSITS OR ALTERATION: TRAVERTINE, SINTER
 WATER TREATMENT DATA: PRESSURE - FILTERED THROUGH A .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1973/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 8.71
 SPECIFIC CONDUCTANCE..... 740.

ISOTOPIC DATA

DEL O(18) OF WATER..... -16.52

DEL D OF WATER..... -139.7

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.11	160.	3.2	0.02	L 0.1				
MG	CA	SR	BA	CA+MG				
L 0.05	3.2	L 0.05	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	L 0.02		L 0.02	L 0.01				
ZN	HG	B	H802	AL	PB	AS	SB	U
	0.0007	4.7		L 0.06			L 0.2	
F	CL	BR	I					
6.8	74.							
NH4	NO3	PO4	SI02	S04	C03	HC03		
			115.	110.	1.	127.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00125

RECORD IDENTIFICATION

RECORD NO.... 0000725
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. UNNAMED HOT SPRING NEAR RIVERSIDE
 COUNTRY CODE..... COUNTRY NAME..... UNITED STATES
 STATE/PROVINCE..... OREGON COUNTY..... MALHEUR
 LATITUDE..... 43-27.97 N LONGITUDE..... 118-11.29 W

TOWNSHIP RANGE SECTION 1/4 1/4

24S 37E 20

MAP REFERENCE: BURNS 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 63.0
 WATER FLOW RATE..... 200.
 DEPOSITS OR ALTERATION: TRACES OF CaCO3 DEPOSITED. TRACES OF GAS PRESENT.
 WATER TREATMENT DATA: PRESSURE - FILTERED THROUGH A .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED

WATER ANALYSIS

W

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.43
 SPECIFIC CONDUCTANCE..... 1330.

ISOTOPIC DATA

DEL O(18) OF WATER..... -15.15
 DEL D OF WATER..... -134.0

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
0.27	240.	9.7	0.04	L 0.1					
MG.	CA	SR	BA	CA+MG					
0.5	34.	0.42	L 0.1						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	0.04		L 0.02	0.01					
ZN	HG	B	HB02	AL	PB	AS	SB	U	
	0.0001	6.6			L 0.06	0.04	L 0.2		
F	CL	BR	I						
4.8	140.	0.5	0.03						
NH4	NO3	PO4	SI02	S04	CO3	HC03			
0.514		0.21	110.	290.	L 1.	160.			

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00126

RECORD IDENTIFICATION

RECORD NO.... 0000733
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. UNNAMED HOT SPRING NEAR MCDERMITT
 COUNTRY CODE..... UNITED STATES
 STATE/PROVINCE..... OREGON
 LATITUDE..... 42-04.10 N
 COUNTRY NAME..... UNITED STATES
 COUNTY..... MALHEUR
 LONGITUDE..... 117-30.00 W

TOWNSHIP RANGE SECTION 1/4 1/4
 40S 42E 25
 MAP REFERENCE: JORDAN VALLEY 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 52.0
 WATER FLOW RATE..... 750.
 WATER TREATMENT DATA: PRESSURE-FILTERED THROUGH A .45 MICROMETRE, PORTION ACIDIFIED, DILUTED.

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 8.79
 SPECIFIC CONDUCTANCE..... 598.

ISOTOPIC DATA

DEL O(18) OF WATER..... -16.95
 DEL D OF WATER..... -134.6

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.06	130.	1.0	L 0.02	L 0.1				
MG	CA	SR	BA	CA+MG				
L 0.1	0.6	L 0.05	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	L 0.02		L 0.02	L 0.01				
ZN	HG	B	H802	AL	PB	AS	SB	U
	0.0001	1.1		0.013	L 0.06	0.05	L 0.2	
F	CL	BR	I					
6.6	14.	0.4	0.008					
NH4	NO3	PO4	SI02	S04	C03	HC03		
0.103		0.06	72.	52.	13.	237.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00127

RECORD IDENTIFICATION

RECORD NO.... 000786
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. UNNAMED HOT SPRING AT THREE FORKS
 COUNTRY CODE..... COUNTRY NAME..... UNITED STATES
 STATE/PROVINCE..... OREGON COUNTY..... MALHEUR

TOWNSHIP RANGE SECTION 1/4 1/4
 35S 45E 03

MAP REFERENCE: JORDAN VALLEY 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1973/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 34.0
 WATER FLOW RATE..... 4000.
 WATER TREATMENT DATA: PRESSURE-FILTERED THROUGH A .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED.

WATER ANALYSIS

ANALYSIS DATE..... 1973/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 8.11
 SPECIFIC CONDUCTANCE..... 338.

ISOTOPIC DATA

DEL O(18) OF WATER..... -16.09

DEL D OF WATER..... -127.4

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RR	CS	NA+K			
0.04	61.	1.2	L 0.02	L 0.1				
MG	CA	SR	BA	CA+MG				
0.7	10.5	0.06	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	L 0.02		L 0.02	L 0.01				
ZN	HG	B	HRO2	AL	PB	AS	SB	U
		0.11			L 0.06		L 0.2	
F	CL	BR	I					
4.2	18.							
NH4	NO3	PO4	SI02	S04	C03	HC03		
			40.	34.	1.	108.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00128

RECORD IDENTIFICATION

RECORD NO..... 0002239
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING

NAME OF SAMPLE SOURCE.. UNNAMED HOT SPRINGS AT THREE FORKS

COUNTRY CODE.....

COUNTRY NAME..... UNITED STATES

STATE/PROVINCE..... OREGON

COUNTY..... MALHEUR

TOWNSHIP RANGE SECTION 1/4 1/4
 35S 045E 03

MAP REFERENCE: JORDAN VALLEY 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1935/07/20

COLLECTOR(S)..... WARING, G. A.

WATER SAMPLING TEMP.... 35.0

WATER FLOW RATE..... 1136.

OTHER SAMPLE INFORMATION: ABOUT 15 SPRINGS FOR 1/2 MILE. TOTAL FLOW=3785 LPM, TEMPERATURE RANGE 31-35 C

WATER ANALYSIS

ANALYSIS DATE..... 1935/00/00

ANALYST(S)..... USGS

TOTAL DISSOLVED SOLIDS... 230.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K
	62.				

MG	CA	SR	BA	CA+MG		
1.6	12.					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU		
			0.02			
F	CL	BR	I			
4.9	19.					
NH4	N03	P04	SI02	S04	C03	HC03
	2.9		44.	31.	11.	97.

REFERENCES: FROM PERSONAL FILE OF DON WHITE, USGS, MENLO PARK
 WARING, G. A., 1936, GSA PROC. FOR 1955, P. 115 - 116

RECORD 00129

RECORD IDENTIFICATION

RECORD NO..... 0015414
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
 DATE..... 78/05
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING

NAME OF SAMPLE SOURCE.. UNNAMED WARM SPRING NEAR BULLY CREEK

COUNTRY CODE.....

COUNTRY NAME..... UNITED STATES

STATE/PROVINCE..... OREGON

COUNTY..... MALHEUR

LATITUDE..... 44-02.2 N

LONGITUDE..... 117-26.8 W

TOWNSHIP	RANGE	SECTION	1/4	1/4
18S	43E	04		

USGS WRD WELL-SPRING NUMBERING SYSTEM

18S/43E-4DA

MAP REFERENCE: JAMIESON 1:62500, BOISE 1:250000

SAMPLE INFORMATION

SAMPLE NO.....	ORE DEPT OF ENVIRONMENTAL QUALITY
COLLECTION DATE.....	1977/06/24
COLLECTOR(S).....	BOWEN, R.
POINT OF COLLECTION.....	SOUTHERN MOST SPRING
WATER SAMPLING TEMP....	37.0
WATER FLOW RATE.....	76.

WATER ANALYSIS

ANALYSIS DATE.....	1977/11/29
ANALYST(S).....	BANERJEE, KALA C.
PH 1).....	7.8
SPECIFIC CONDUCTANCE....	115.
ALKALINITY.....	37.
TOTAL DISSOLVED SOLIDS...	181.

AT 35.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
0.04	1.4	0.4			

MG	CA	SR	BA	CA*MG				
14.7	36.6							
MN*3	MN(TOT)	FE*3	FE(TOT)	CU				
	0.05		0.4					
ZN	HG	B	HBO2	AL	PB	AS	SB	U
		0.15		0.28		0.02		
F	CL	BR	I					
0.7	0.5							
NH4	NO3	PO4	SI02	S04	CO3	HC03		
0.28	0.06		99.	1.0				

OTHER SOLUTES & GASES CO2 PRESENT

RECORD 00130

RECORD IDENTIFICATION
 RECORD NO..... 0000685
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. VALE HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 43-59.39 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... MALHEUR
 LONGITUDE..... 117-14.06 W

TOWNSHIP RANGE SECTION 1/4 1/4
 18S 45E 20
 MAP REFERENCE: VALE EAST 1:24000, BCISE 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1974/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 73.0
 WATER TREATMENT DATA: PRESSURE-FILTERED THROUGH A .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1974/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.47
 SPECIFIC CONDUCTANCE..... 1530.
 ALKALINITY..... 143.

ISOTOPIC DATA

DEL O(18) OF WATER..... -15.18
 DEL D OF WATER..... -135.0

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI NA K RB CS NA+K

0.28	310.	16.	0.09	L 0.1				
MG	CA	SR	BA	CA*MG				
0.8	19.		L 0.1					
MN*3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.04		L 0.02	L 0.01				
ZN	HG	B	H802	AL	PB	AS	SB	U
		9.4		0.017	L 0.06		L 0.2	
F	CL	BR	I					
6.1	360.							
NH4	NO3	PO4	SI02	S04	C03	HC03		
1.0			130.	100.				

REFERENCES: MARINER AND OTHERS, 1975

RECORD 00131

RECORD IDENTIFICATION
 RECORD NO.... 0000701
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. BREITENBUSH HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 44-46.86 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... MARION
 LONGITUDE..... 121-58.54 W

TOWNSHIP RANGE SECTION 1/4 1/4
 09S 07E 20

MAP REFERENCE: BREITENBUSH HOT SPRING 1:62500, CANYON CITY 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 92.0
 WATER FLOW RATE..... 3400.
 DEPOSITS OR ALTERATION: TRAVERTINE
 WATER TREATMENT DATA: PRESSURE-FILTERED THROUGH A .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED

WATER ANALYSIS

W
 ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 7.31
 SPECIFIC CONDUCTANCE..... 4030.

ISOTOPIC DATA

DEL O(18) OF WATER..... -11.66
 DEL D OF WATER..... -97.5

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
1.8	720.	31.	0.18	0.1				
MG	CA	SR	BA	CA+MG				
1.3	100.	0.73	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.22		0.02	0.01				
ZN	HG	B	H802	AL	PB	AS	SB	U
	0.0002	4.1			L 0.06	0.51	L 0.2	
F	CL	BR	I					
3.4	1300.	5.	0.1					
NH4	NO3	PO4	SI02	S04	C03	HC03		
		0.25	83.	140.	L 1.	142.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00132

RECORD IDENTIFICATION

RECORD NO.... 0015445
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
 DATE..... 78/05
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. BREITENBUSH HOT SPRINGS - WELL
 COUNTRY CODE..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... MARION
 LATITUDE..... 44-46.87 N
 LONGITUDE..... 121-58.54 W

TOWNSHIP RANGE SECTION 1/4 1/4
 09S 07E 20

USGS WRD WELL-SPRING NUMBERING SYSTEM

9S/7E-20A
 MAP REFERENCE: BREITENBUSH HOT SPRINGS 1:62500

SAMPLE INFORMATION

SAMPLE NO..... ORE DEPT. ENV. QUAL WS 78-032
 COLLECTION DATE..... 1978/02/23
 COLLECTOR(S)..... BOWEN, R.
 WATER
 POINT OF COLLECTION.... WELL HEAD
 WATER SAMPLING TEMP.... 110.0
 OTHER SAMPLE INFORMATION: WELL GEYERSING

WATER ANALYSIS

ANALYSIS DATE..... 1978/03/16
 ANALYST(S)..... BANERJEE, KALA C.
 PH 1)..... 8.5
 ALKALINITY..... 72.
 TOTAL DISSOLVED SOLIDS... 2439.

SOLUTE ANALYSIS (WATER)				UNITS USED..... MG/L				
LI	NA	K	RB	CS	NA+K			
1.9	690.	34.						
MG	CA	SR	BA	CA+MG				
1.3	90.							
ZN	HG	B	H802	AL	PB	AS	SB	U
		5.43				0.54		
F	CL	BR	I					
4.0	1170.							
NH4	NO3	PO4	SiO2	S04	CO3	HC03		
			Q 182.	96.				

COMMENTS: SiO2 ANALYSIS MADE ON SAMPLE 10 ML WELL WATER, 50 ML DEMINERALIZED WATER.

RECORD 00133

RECORD IDENTIFICATION

RECORD NO.... 0015415
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
 DATE..... 78/05
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. CORBETT WARM SPRING
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 45-32.5 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... MULTNOMAH
 LONGITUDE..... 122-17.5 W

TOWNSHIP RANGE SECTION 1/4 1/4
 01N 04E 27

USGS WRD WELL-SPRING NUMBERING SYSTEM

1N/4E-27DA
 MAP REFERENCE: WASHOUGAL 1:24000, VANCOUVER 1:250000

SAMPLE INFORMATION

SAMPLE NO..... ORE DEQ WS-75-103
 COLLECTOR(S)..... HULL, D.
 WATER SAMPLING TEMP.... 18.0
 WATER FLOW RATE..... 76.

WATER ANALYSIS

ANALYSIS DATE..... 1975/04/16
 ANALYST(S)..... L. W. S.
 PH 1)..... 8.2
 SPECIFIC CONDUCTANCE.... 570.
 ALKALINITY..... 104.
 TOTAL DISSOLVED SOLIDS... 327.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.03	85.5	8.9						
MG	CA	SR	BA	CA+MG				
0.8	21.7							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	0.10		0.20					
ZN	HG	B	HR02	AL	PB	AS	SB	U
		1.2		0.16		0.12		
F	CL	BR	I					
2.4	77.4							
NH4	NO3	PO4	SI02	S04	C03	HC03		
0.01	0.01	0.05	44.2	5.9				

REFERENCES: ORE DEPT GEOLOGY MP 14

RECORD 00134

RECORD IDENTIFICATION
 RECORD NO.... 0015416
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... BOWEN, RICHARD G.
 DATE..... 78/05
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. YMCA CAMP COLLINS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 45-30.5 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... MULTNOMAH
 LONGITUDE..... 122-17.6 W

TOWNSHIP RANGE SECTION 1/4 1/4
 01S 04E 10

USGS WRD WELL-SPRING NUMBERING SYSTEM
 1S/4E-10BB

MAP REFERENCE: WASHOUGAL 1:24000, VANCOUVER 1:250000

SAMPLE INFORMATION

SAMPLE NO..... 434 IN NEWCOMB, 1972
 COLLECTION DATE..... 1956/09/02
 DEPTH..... 94.
 WATER SAMPLING TEMP.... 23.3
 OTHER SAMPLE INFORMATION: WATER BEARING ZONE 309-310'

WATER ANALYSIS

PH 1)..... 8.6
 SPECIFIC CONDUCTANCE..... 517.
 TOTAL DISSOLVED SOLIDS... 326.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
----	----	---	----	----	------

	10.	9.6						
MG	CA	SR	BA	CA+MG				
0.2	5.2							
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
			0.06					
ZN	HG	B	H802	AL	PB	AS	SB	U
		0.38						
F	CL	BR	I					
3.2	92.							
NH4	NO3	P04	SI02	S04	C03	HC03		
	0.5		60.	1.2	5.0	114.		

REFERENCES: NEWCOMB, 1972

RECORD 00135

RECORD IDENTIFICATION
 RECORD NO.... 0015347
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... BOWEN, RICHARD G.
 DATE..... 78/06
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. BINGHAM SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 45-44.14 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... UMATILLA
 LONGITUDE..... 118-14.00 W

TOWNSHIP RANGE SECTION 1/4 1/4
 03N 37E 18
 MAP REFERENCE: BINGHAM SPRINGS 1:24000, PENDLETON 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1954/04/01
 WATER SAMPLING TEMP.... 34.4
 WATER FLOW RATE..... 322.

WATER ANALYSIS

PH 1)..... 8.6
 SPECIFIC CONDUCTANCE..... 765.
 TOTAL DISSOLVED SOLIDS... 464.

SOLUTE ANALYSIS (WATER)

UNITS USED..... PPM

LI	NA	K	RB	CS	NA+K
	133.	7.6			
MG	CA	SR	BA	CA+MG	
3.5	14.				
MN+3	MN(TOT)	FE+3	FE(TOT)	CU	
			0.20		

ZN	HG	B	HB02	AL	PB	AS	SB	U
		10.						
F	CL	BR	I					
4.0	192.							
NH4	NO3	PO4	SI02	S04	CO3	HC03		
	0.2	0.2	68.	0.2	9.0	64.		

REFERENCES: HOGENSON, 1964

RECORD 00136

RECORD IDENTIFICATION
 RECORD NO..... 0000785
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER
 NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING

NAME OF SAMPLE SOURCE.. LEHMAN SPRINGS

COUNTRY CODE.....

STATE/PROVINCE..... OREGON

LATITUDE..... 45-09.2 N

COUNTRY NAME..... UNITED STATES

COUNTY..... UMATILLA

LONGITUDE..... 118-39.7 W

TOWNSHIP RANGE SECTION 1/4 1/4
 05S 33E 12

MAP REFERENCE: LEHMAN SPRINGS 1:24000, PENDLETON 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00

COLLECTOR(S)..... BARNES GROUP

WATER SAMPLING TEMP.... 61.0

WATER FLOW RATE..... 275.

DEPOSITS OR ALTERATION: TRAVERTINE

WATER TREATMENT DATA: PRESSURE-FILTERED THROUGH A .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00

ANALYST(S)..... BARNES GROUP

PH 1)..... 9.18

SPECIFIC CONDUCTANCE..... 252.

ISOTOPIC DATA

DEL O(18) OF WATER..... -16.52

DEL D OF WATER..... -12)3

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K
0.03	53.	0.7	L 0.02	L 0.1	
MG	CA	SR	HA	CA+MG	
0.1	0.9	L 0.05	L 0.1		
MN+3	MN(TOT)	FE+3	FE(TOT)	CU	

	L 0.02		L 0.02	L 0.01				
ZN	HG	B	HB02	AL	PB	AS	SB	U
	0.0003	0.12			L 0.06	0.02	L 0.2	
F	CL	BR	I					
2.1	5.4	0.006	0.001					
NH4	NO3	P04	SI02	S04	CO3	HC03		
		0.12	44.	23.	13.	101.		

OTHER SOLUTES & GASES 02+AR=4

GAS ANALYSIS

UNITS USED..... VOLUME %

CO2	H2S	N2	O2
L 0.1		94.	
H2	CH4	C2H6	HE
	L 0.1		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00137

RECORD IDENTIFICATION

RECORD NO.... 0015418
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
 DATE..... 78/05
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. COVE WARM SPRING
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 45-17.6 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... UNION
 LONGITUDE..... 117-48.4 W

TOWNSHIP RANGE SECTION 1/4 1/4
 03S 40E 22

USGS WRD WELL-SPRING NUMBERING SYSTEM
 3S/40E-2288

MAP REFERENCE: COVE 1:24000, GRANGEVILLE 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1957/06/02
 WATER SAMPLING TEMP.... 29.4
 WATER FLOW RATE..... 855.

WATER ANALYSIS

PH 1)..... 9.8
 SPECIFIC CONDUCTANCE..... 150.
 TOTAL DISSOLVED SOLIDS... 109.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA 30.	K 0.5	RB	CS	NA+K				
MG	CA 1.6	SR	BA	CA+MG					
MN+3	MN(TOT)	FE+3 0.03	FE(TOT)	CU					
ZN	HG	B 0.08	H802	AL	PB	AS	S8	U	
F 0.3	CL 5.0	BR	I						
NH4	NO3 N	PO4	SI02 29.	SO4 8.8	CO3 32.	HC03 5.0			

REFERENCES: HAMPTON AND BROWN, 1964

RECORD 00138

RECORD IDENTIFICATION

RECORD NO.... 0000711
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. HOT LAKE
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 45-14.62 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... UNION
 LONGITUDE..... 117-57.63 W

TOWNSHIP RANGE SECTION 1/4 1/4
 04S 39E 05

MAP REFERENCE: CRAIG MTN. 1:24000; GRANGEVILLE 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1972/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 80.0
 WATER FLOW RATE..... 1500.
 DEPOSITS OR ALTERATION: TRAVERTINE
 WATER TREATMENT DATA: PRESSURE-FILTERED THROUGH A .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED.

WATER ANALYSIS

ANALYSIS DATE..... 1972/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 9.21
 SPECIFIC CONDUCTANCE..... 688.

ISOTOPIC DATA

DEL O(18) OF WATER..... -16.56
 DEL D OF WATER..... -127.7

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
0.03	130.	2.7	L 0.02	L 0.1					
MG	CA	SR	BA	CA+MG					
L 0.1	4.9	L 0.05	L 0.1						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	L 0.02		L 0.02	0.01					
ZN	HG	B	H802	AL	PB	AS	SB	U	
	0.0032	2.9		L 0.06	0.01	L 0.2			
F	CL	BR	I						
1.7	140.	0.4	0.08						
NH4	NO3	PO4	SI02	S04	C03	HC03			
		0.09	48.	56.	12.	75.			

OTHER SOLUTES & GASES 02+AR=2

GAS ANALYSIS

UNITS USED..... VOLUME %

C02	H2S	N2	O2
L 1.		90.	
H2	CH4	C2H6	HE
	9.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00139

RECORD IDENTIFICATION

RECORD NO..... 0000713
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. MEDICAL HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 45-01.07 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... UNION
 LONGITUDE..... 117-37.52 W

TOWNSHIP RANGE SECTION 1/4 1/4
 06S 01E 25

MAP REFERENCE: FLAGSTAFF BUTTE 1:24000, GRANGEVILLE 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1973/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 60.0
 WATER FLOW RATE..... 200.

DEPOSITS OR ALTERATION: TRAVERTINE
 WATER TREATMENT DATA: PRESSURE-FILTERED THROUGH A .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1973/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 8.23
 SPECIFIC CONDUCTANCE..... 1173.

ISOTOPIC DATA

DEL O(18) OF WATER..... -16.99
 DEL D OF WATER..... -130.2

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
0.05	190.	7.0	0.02	L 0.1					
MG	CA	SR	BA	CA+MG					
0.2	72.	0.90	L 0.1						
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	L 0.02		L 0.02	L 0.01					
ZN	HG	B	HBO2	AL	PB	AS	SR	U	
	0.0004	2.2			L 0.06		L 0.2		
F	CL	BR	I						
1.2	77.	0.2							
NH4	NO3	PO4	SI02	S04	CO3	HC03			
			80.	400.	L 1.	26.			

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00140

RECORD IDENTIFICATION

RECORD NO.... 0002241
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/06
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. MEDICAL HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 45-01.07 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... UNION
 LONGITUDE..... 117-37.52 W

TOWNSHIP RANGE SECTION 1/4 1/4
 06S 001E 25

MAP REFERENCE: FLAGSTAFF BUTTE 1:24000, GRANGEVILLE 1:250000
 OTHER LOCALITY INFORMATION: 20 MI. NNE OF BAKER

SAMPLE INFORMATION

WATER SAMPLING TEMP.... 60.0
 WATER FLOW RATE..... 189.

WATER ANALYSIS
TOTAL DISSOLVED SOLIDS... 896.

SOLUTE ANALYSIS (WATER) UNITS USED..... PPM

LI	NA Q 191.	K Q 3.4	RB	CS	NA+K	
MG	CA Q 1.2	SR	BA	CA+MG		
F	CL Q 77.	BR	I			
NH4	NO3	PO4	SI02 97.	S04 Q 432.	CO3 Q 10.9	HC03

REFERENCES: FROM PERSONAL FILE OF DON WHITE, USGS, MENLO PARK
LINDGREN, W., 1901, USGS, 22ND ANNUAL REPORT, PT. 2, P. 641

RECORD 00141

RECORD IDENTIFICATION

RECORD NO.... 0015410
CROSS INDEX NO..
RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
DATE..... 78/05
ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
NAME OF SAMPLE SOURCE.. COOK CREEK WARM SPRING
COUNTRY CODE.....
STATE/PROVINCE..... OREGON
LATITUDE..... 44-20.0 N

COUNTRY NAME..... UNITED STATES
COUNTY..... WALLOWA
LONGITUDE..... 116-52.5 W

TOWNSHIP RANGE SECTION 1/4 1/4
05N 48E 30

USGS WRD WELL-SPRING NUMBERING SYSTEM
SN/48E-30 BB

MAP REFERENCE: WAPSHILLA CREEK 1:24000, GRANGEVILLE 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1974/11/21
COLLECTOR(S)..... HULL, DONALD A.
POINT OF COLLECTION..... MANMADE POOL
WATER SAMPLING TEMP.... 36.0
WATER FLOW RATE..... 38.
DEPOSITS OR ALTERATION: NONE VISIBLE

WATER ANALYSIS

ANALYSIS DATE..... 1975/04/16
ANALYST(S)..... L.W.S.
PH 1)..... R 7.95
2)..... 8.0
SPECIFIC CONDUCTANCE..... 610.
ALKALINITY..... 36.

TOTAL DISSOLVED SOLIDS... 386.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K				
L 0.01	61.5	2.5							
MG	CA	SR	BA	CA+MG					
1.1	36.								
MN+3	MN(TOT)	FE+3	FE(TOT)	CU					
	L 0.05		0.15						
ZN	HG	R	HB02	AL	PR	AS	SB	U	
				0.16		0.12			
F	CL	BR	I						
0.09	20.								
NH4	NO3	PO4	SIO2	SO4	CO3	HC03			
L 0.01	0.13	0.05	46.1	163.8					

RECORD 00142

RECORD IDENTIFICATION

RECORD NO.... 0015417
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
 DATE..... 78/05
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. J. SANDOZ WELL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 45-33.8 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... WASCO
 LONGITUDE..... 121-16.6 W

TOWNSHIP RANGE SECTION 1/4 1/4
 01N 12E 14

USGS WRD WELL-SPRING NUMBERING SYSTEM

1N/12E-14 DD
 MAP REFERENCE: WHITE SALMON 1:62500, THE DALLES 1:250000

SAMPLE INFORMATION

SAMPLE NO..... 303 IN NEWCOMB, 1972
 COLLECTION DATE..... 1958/07/31
 DEPTH..... 166.
 WATER SAMPLING TEMP.... 27.8
 OTHER SAMPLE INFORMATION: WATER BEARING ZONE 420-546' .

WATER ANALYSIS

W
 PH 1)..... 7.9
 SPECIFIC CONDUCTANCE..... 378.
 TOTAL DISSOLVED SOLIDS... 314.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA 62.	K 11.	RB	CS	NA+K			
MG 4.6	CA 16.	SR	BA	CA+MG				
MN+3	MN(TOT) N	FE+3	FE(TOT) 0.04	CU				
ZN	HG	9	HB02	AL N	PB	AS	SB	U L 0.0001
F 1.6	CL 7.5	BR	I					
NH4	NO3	PO4 N	SI02 95.	S04 1.5	C03 N	HC03 234.		

REFERENCES: NEWCOMB, 1972

RECORD 00143

RECORD IDENTIFICATION

RECORD NO.... 0000699
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... SANFORD, LINDA
 DATE..... 76/04
 ORGANIZATION.. U.S. GEOLOGICAL SURVEY

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... SPRING
 NAME OF SAMPLE SOURCE.. KAHNEETAH HOT SPRINGS
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 44-51.9 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... WASCO
 LONGITUDE..... 121-12.9 W

TOWNSHIP RANGE SECTION 1/4 1/4
 08S 13E 20

MAP REFERENCE: EAGLE BUTTE 1:24000, BEND 1:250000

SAMPLE INFORMATION

COLLECTION DATE..... 1973/00/00
 COLLECTOR(S)..... BARNES GROUP
 WATER SAMPLING TEMP.... 52.0
 WATER FLOW RATE..... 200.
 DEPOSITS OR ALTERATION: TRAVERTINE
 WATER TREATMENT DATA: PRESSURE - FILTERED THROUGH A .45 MICROMETRE MEMBRANE, PORTION ACIDIFIED, DILUTED

WATER ANALYSIS

ANALYSIS DATE..... 1973/00/00
 ANALYST(S)..... BARNES GROUP
 PH 1)..... 8.32
 SPECIFIC CONDUCTANCE..... 1370.

ISOTOPIC DATA

DEL O(18) OF WATER..... -14.75
 DEL D OF WATER..... -118.9

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA	K	RB	CS	NA+K			
0.52	325.	3.4	0.02	L 0.1				
MG	CA	SR	BA	CA+MG				
L 0.05	3.2	L 0.05	L 0.1					
MN+3	MN(TOT)	FE+3	FE(TOT)	CU				
	L 0.02		L 0.02	L 0.01				
ZN	HG.	B	H802	AL	PB	AS	SB	U
	0.0003	2.6			L 0.06		L 0.2	
F	CL	BR	I					
21.	155.							
NH4	NO3	PO4	SI02	SO4	CO3	HC03		
			104.	34.	9.	493.		

REFERENCES: MARINER AND OTHERS, 1974; MARINER AND OTHERS, 1975

RECORD 00144

RECORD IDENTIFICATION

RECORD NO.... 0015403
 CROSS INDEX NO..
 RECORD TYPE.....

REPORTER

NAME..... BOWEN, RICHARD G.
 DATE..... 78/05
 ORGANIZATION.. OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES

GEOGRAPHIC LOCALITY

SAMPLE TYPE..... WELL
 NAME OF SAMPLE SOURCE.. MILTON MARTIN WELL
 COUNTRY CODE.....
 STATE/PROVINCE..... OREGON
 LATITUDE..... 45-31.1 N

COUNTRY NAME..... UNITED STATES
 COUNTY..... WASCO
 LONGITUDE..... 121-13.0 W

TOWNSHIP RANGE SECTION 1/4 1/4
 01N 13E 32

USGS WRD WELL-SPRING NUMBERING SYSTEM
 1N/13E-32AC

MAP REFERENCE: THE DALLES 1:62500, THE DALLES 1:250000

SAMPLE INFORMATION

SAMPLE NO..... 314 IN NEWCOMB, 1972
 COLLECTION DATE..... 1958/07/30
 DEPTH..... 130.
 WATER SAMPLING TEMP.... 22.2
 OTHER SAMPLE INFORMATION: DEPTH OF PRODUCTION ZONE 330-336'

WATER ANALYSIS

PH 1)..... 8.5
 SPECIFIC CONDUCTANCE..... 279.
 TOTAL DISSOLVED SOLIDS... 241.

SOLUTE ANALYSIS (WATER)

UNITS USED..... MG/L

LI	NA 41.	K 7.2	RB	CS	NA+K			
MG 2.9	CA 15.	SR	BA	CA+MG				
MN+3	MN(TOT) N	FE+3	FE(TOT) 0.03	CU				
ZN	HG	B	HB02	AL 1.0	PB	AS	SB	U L 0.0001
F 0.9	CL 6.0	BR	I					
NH4	NO3 N	PO4 N	SI02 84.	S04 2.4	CO3 N	HC03 167.		

REFERENCES: NEWCOMB, 1972

T-5

RECORD 00001

RECORD NO..... 0015451
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U. S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 04
 NAME OF SAMPLE SOURCE..... BAGBY HOT SPRINGS
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... CLACKAMAS
 TOWNSHIP..... 07S
 RANGE..... 005E
 SECTION..... 26
 QUARTER SECTIONS..... NW
 GEOLOGIC PROVINCE..... CASCADES
 MAP REFERENCE..... BATTLE AX 1:62500
 SAMPLE SOURCE TYPE..... SPRING
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W
 COLLECTION DATE..... 1977/09/18
 COLLECTOR(S)..... MARINER, R. H. AND EVANS, W. C.
 SAMPLE TEMPERATURE..... 58.
 WATER TREATMENT..... FILTERED, ACIDIFIED, SILICA DILUTED, AND ALKALINITY DETERMINED IN THE FIELD
 REFERENCE..... UNPUBLISHED DATA OF R. MARINER, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.
 WATER ANALYSIS DATE..... 1978/01/00
 WATER ANALYST(S)..... BARNES GROUP
 PH..... 9.37
 PH TEMPERATURE..... 58.
 UNITS USED FOR ANALYSIS..... MG/L
 ALKALINITY..... 69.
 ALKALINITY MEASURED AS..... HCO3
 SiO2..... 74.
 LI..... 0.02
 NA..... 53.
 K..... 0.74
 CA..... 3.3
 MG..... L 0.05
 B..... 0.07
 F..... 0.66
 CL..... 14.
 SO4..... 42.

RECORD 00002

RECORD NO..... 0015469
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U. S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 01
 NAME OF SAMPLE SOURCE..... MT. HOOD FUMARoles
 KGRA..... MT. HOOD
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... CLACKAMAS

TOWNSHIP..... 02S
 RANGE..... 009E
 SECTION..... 29
 GEOLOGIC PROVINCE..... CASCADES
 SAMPLE SOURCE TYPE..... SPRING
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W
 COLLECTION DATE..... 1976/06/25
 COLLECTOR(S)..... HODGSON, L.
 REFERENCE..... UNPUBLISHED ANALYSIS IN USGS FILES
 WATER ANALYST(S)..... BARNES GROUP
 PH..... 3.8
 SPECIFIC CONDUCTANCE..... 227.
 UNITS USED FOR ANALYSIS..... MG/L
 SIO2..... 19.
 LI..... L 0.01
 NA..... 5.4
 K..... 0.2
 CA..... 13.
 MG..... 2.8
 CL..... L 1.
 SO4..... 77.

RECORD 00003

RECORD NO..... 0015470
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U.S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 01
 NAME OF SAMPLE SOURCE..... MT. HOOD FUMARoles
 KGRA..... MT. HOOD
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... CLACKAMAS
 TOWNSHIP..... 02S
 RANGE..... 009E
 SECTION..... 29
 GEOLOGIC PROVINCE..... CASCADES
 SAMPLE SOURCE TYPE..... FUMAROLE
 TYPE OF ANALYSIS(S)..... G
 COLLECTION DATE..... 1935/00/00
 OTHER SAMPLE INFORMATION..... SAMPLE NO. 1 CORRESPONDS TO NO. 3 AND 6 OF AYERS AND CRESWELL.
 REFERENCE..... PHILLIPS, K. N., 1935, AS REPORTED IN AYERS AND CRESWELL, 1951
 DATE OF GAS ANALYSIS..... 1935/00/00
 UNITS OF ANALYSIS - GAS..... VOLUME %
 CO2..... 1.13
 H2..... 0.0033
 H2S - GAS..... 0.038
 N2..... 0.116
 O2..... 0.011
 OTHER ANALYTICAL DATA..... 98.7% H2O, 0.0014% INERT GASES

RECORD 00004

RECORD NO..... 0015471

COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 78/03
 COMPILER AFFILIATION..... U.S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 01
 NAME OF SAMPLE SOURCE..... MT. HOOD FUMARoles
 KGRA..... MT. HOOD
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... CLACKAMAS
 TOWNSHIP..... 02S
 RANGE..... 009E
 SECTION..... 29
 GEOLOGIC PROVINCE..... CASCADES
 SAMPLE SOURCE TYPE..... FUMAROLE
 TYPE OF ANALYSIS(S)..... G
 DEPOSITS OR ALTERATIONS..... CRYSTALLINE SULFUR OCCURS AT THE VENT
 OTHER SAMPLE INFORMATION..... SAMPLES 3 AND 6 OF AYERS AND CRESWELL, 1951, ARE DUPLICATES FROM A LARGE VENT 400 TO
 500 FEET UP-SLOPE FROM THE REMAINS OF AN OLD STONE SHELTER AND NORTHEAST OF IT.
 REFERENCE..... AYERS AND CRESWELL, 1951
 DATE OF GAS ANALYSIS..... 1951/00/00
 UNITS OF ANALYSIS - GAS..... VOLUME %
 CO2..... 1.49
 H2..... 0.0042
 H2S - GAS..... 0.181
 N2..... 0.035
 O2..... 0.0043
 OTHER ANALYTICAL DATA..... 98.3% H2O, INERT GASES 0.0004%, SAMPLE NO 6

RECORD 00005

RECORD NO..... 0015472
 COMPILER CROSS INDEX..... 01
 NAME OF SAMPLE SOURCE..... MT. HOOD FUMARoles
 KGRA..... MT. HOOD
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... CLACKAMAS
 TOWNSHIP..... 02S
 RANGE..... 009E
 SECTION..... 29
 GEOLOGIC PROVINCE..... CASCADES
 SAMPLE SOURCE TYPE..... FUMAROLE
 TYPE OF ANALYSIS(S)..... G
 OTHER SAMPLE INFORMATION..... SAMPLE NO. 1 OF AYERS AND CRESWELL, 1951, FROM A VENT ON THE NORTHEAST BANK OF, AND
 TEN FEET FROM THE BOTTOM OF, THE SHALLOW RAVINE ADJACENT TO AND EAST OF CRATER ROCK. SAME AS NO. 5.
 REFERENCE..... AYERS AND CRESWELL, 1951
 DATE OF GAS ANALYSIS..... 1951/00/00
 UNITS OF ANALYSIS - GAS..... VOLUME %
 CO2..... 2.23
 H2..... 0.096
 H2S - GAS..... 0.102
 N2..... 0.041
 O2..... 0.0040
 OTHER ANALYTICAL DATA..... 97.5% H2O, 0.007% INERT GASES

RECORD 00006

RECORD NO..... 0015473
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U.S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 01
 NAME OF SAMPLE SOURCE..... MT. HOOD FUMARoles
 KGRA..... MT. HOOD
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... CLACKAMAS
 TOWNSHIP..... 02S
 RANGE..... 009E
 SECTION..... 29
 GEOLOGIC PROVINCE..... CASCADES
 SAMPLE SOURCE TYPE..... FUMAROLE
 TYPE OF ANALYSIS(S)..... G
 OTHER SAMPLE INFORMATION..... SAMPLE NO. 5 OF AYERS AND CRESWELL, 1951, FROM A VENT ON THE NORTHEAST BANK OF, AND
 TEN FEET FROM THE BOTTOM OF, THE SHALLOW RAVINE ADJACENT TO AND EAST OF CRATER ROCK. DUPLICATE OF SAMPLE NO. 1.
 REFERENCE..... AYERS AND CRESWELL, 1951
 DATE OF GAS ANALYSIS..... 1951/00/00
 UNITS OF ANALYSIS - GAS..... VOLUME %
 CH4..... 0.0014
 CO2..... 2.12
 H2..... 0.097
 H2S - GAS..... 0.102
 N2..... 0.044
 O2..... 0.0038
 OTHER ANALYTICAL DATA..... 97.6% H2O, 0.006% INERT GASES.

RECORD 00007

RECORD NO..... 0015937
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U.S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 01
 NAME OF SAMPLE SOURCE..... MT. HOOD FUMARoles
 KGRA..... MT. HOOD
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... CLACKAMAS
 TOWNSHIP..... 02S
 RANGE..... 009E
 SECTION..... 29
 GEOLOGIC PROVINCE..... CASCADES
 SAMPLE SOURCE TYPE..... FUMAROLE
 TYPE OF ANALYSIS(S)..... G
 OTHER SAMPLE INFORMATION..... SAMPLE B OF AYERS AND CRESWELL, 1951, COLLECTED FROM A LARGE FISSURE IN THE EAST
 SIDE OF THE NORTH RIDGE OF CRATER ROCK, ABOUT 15 TO 20 FEET BELOW THE SUMMIT OF THE RIDGE.
 REFERENCE..... AYERS AND CRESWELL, 1951
 DATE OF GAS ANALYSIS..... 1951/00/00
 UNITS OF ANALYSIS - GAS..... VOLUME %
 CO2..... 17.4

H2S - GAS..... N
 N2..... 9.8
 O2..... 2.48
 OTHER ANALYTICAL DATA..... 70% H2O, 0.13% INERT GASES

RECORD 00008

RECORD NO..... 0015950
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U.S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 01
 NAME OF SAMPLE SOURCE..... MT. HOOD FUMAROLES
 KGRA..... MT. HOOD
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... CLACKAMAS
 TOWNSHIP..... 02S
 RANGE..... 009E
 SECTION..... 29
 GEOLOGIC PROVINCE..... CASCADES
 SAMPLE SOURCE TYPE..... FUMAROLE
 TYPE OF ANALYSIS(S)..... G
 COLLECTION DATE..... 1935/00/00
 OTHER SAMPLE INFORMATION..... SAMPLE NO. 3 CORRESPONDS TO NO. 4 OF AYERS AND CRESWELL.
 REFERENCE..... PHILLIPS, K. N., 1935, AS REPORTED IN AYERS AND CRESWELL, 1951
 DATE OF GAS ANALYSIS..... 1935/00/00
 UNITS OF ANALYSIS - GAS..... VOLUME %
 CO2..... 0.68
 H2..... 0.58
 H2S - GAS..... N
 N2..... 78.5
 O2..... 19.5
 OTHER ANALYTICAL DATA..... PRACTICALLY ALL THE WATER CONDENSED IN THE COLLECTING TURE AND DRAINED BACK INTO THE
 FUMAROLE.

RECORD 00009

RECORD NO..... 0015951
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U.S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 01
 NAME OF SAMPLE SOURCE..... MT. HOOD FUMAROLES
 KGRA..... MT. HOOD
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... CLACKAMAS
 TOWNSHIP..... 02S
 RANGE..... 009E
 SECTION..... 29
 GEOLOGIC PROVINCE..... CASCADES
 SAMPLE SOURCE TYPE..... FUMAROLF
 TYPE OF ANALYSIS(S)..... G
 COLLECTION DATE..... 1935/00/00
 OTHER SAMPLE INFORMATION..... SAMPLE NO. 2 CORRESPONDS TO NO. 1 AND 5 OF AYERS AND CRFSWELL.

REFERENCE..... PHILLIPS, K. N., 1935, AS REPORTED IN AYERS AND CRESWELL, 1951
 DATE OF GAS ANALYSIS..... 1935/00/00
 UNITS OF ANALYSIS - GAS..... VOLUME %
 CO2..... 1.27
 H2S - GAS..... 0.024
 N2..... 0.057
 O2..... 0.0017
 OTHER ANALYTICAL DATA..... 98.6% H2O; 0.0007% INERT GASES

RECORD 00010

RECORD NO..... 0015952
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U.S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 01
 NAME OF SAMPLE SOURCE..... MT. HOOD FUMARoles
 KGRA..... MT. HOOD
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... CLACKAMAS
 TOWNSHIP..... 02S
 RANGE..... 009E
 SECTION..... 29
 GEOLOGIC PROVINCE..... CASCADES
 SAMPLE SOURCE TYPE..... FUMAROLE
 TYPE OF ANALYSIS(S)..... G
 DEPOSITS OR ALTERATIONS..... CRYSTALLINE SULFUR OCCURS AT THE VENT.
 OTHER SAMPLE INFORMATION..... SAMPLES 3AND 6 OF AYERS AND CRESWELL, 1951, ARE DUPLICATES FROM A LARGE VENT 40 0 TO
 500 FEET UP-SLOPE FROM THE REMAINS OF AN OLD STONE SHELTER AND NORTHEAST OF IT.
 REFERENCE..... AYERS AND CRESWELL, 1951
 DATE OF GAS ANALYSIS..... 1951/00/00
 UNITS OF ANALYSIS - GAS..... VOLUME%
 CO2..... 1.43
 H2..... 0.0045
 H2S - GAS..... 0.176
 N2..... 0.032
 O2..... 0.0036
 OTHER ANALYTICAL DATA..... 98.4%H2O; INERT GASES 0.0002%

RECORD 00011

RECORD NO..... 0015452
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U. S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 01
 NAME OF SAMPLE SOURCE..... EAST LAKE HOT SPRINGS
 KGRA..... NEWBERRY CALDERA
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... DESCHUTES
 TOWNSHIP..... 21S
 RANGE..... 013E
 SECTION..... 29
 QUARTER SECTIONS..... SW

MAP REFERENCE..... NEWBERRY CRATER 1:125000
 TYPE OF ANALYSIS(S)..... G
 COLLECTION DATE..... 1977/07/28
 COLLECTOR(S)..... MARINER, R. H. AND EVANS, W. C.
 OTHER SAMPLE INFORMATION..... FIVE VENTS ACROSS THE COMPLEX (EAST TO WEST) WERE SAMPLED. THE COMPOSITIONS VARY
 WITH DISCHARGE RATE, NOT RELATIVE POSITION. HIGH DISCHARGE RATE VENTS ARE PREDOMINANTLY CO₂; CH₄ AND N₂ INCREASE
 AS DISCHARGE RATES DECREASE.
 DATE OF GAS ANALYSIS..... 1977/09/00
 GAS ANALYST(S)..... EVANS, W. C.
 UNITS OF ANALYSIS - GAS..... VOLUME %
 CH₄..... 1.95
 C₂H₆..... L 0.05
 CO₂..... 95.55
 H₂..... L 0.01
 HE..... L 0.02
 DEL C(13) OF CO₂ - GAS..... -6.35
 OTHER ANALYTICAL DATA..... O₂+AR+N₂=2.72; SAMPLES COLLECTED IN EVACUATED TUBES.

RECORD 00012

RECORD NO..... 0015453
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U. S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 01
 NAME OF SAMPLE SOURCE..... EAST LAKE HOT SPRINGS
 KGRA..... NEWBERRY CALDERA
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... DESCHUTES
 TOWNSHIP..... 21S
 RANGE..... 013E
 SECTION..... 29
 MAP REFERENCE..... NEWBERRY CRATER 1:125000
 SAMPLE SOURCE TYPE..... SPRING
 POINT OF COLLECTION..... SPRING NEAR EAST END OF GROUP, BENEATH CLIFF
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W G
 COLLECTION DATE..... 1975/08/20
 COLLECTOR(S)..... MARINER, R. H. AND EVANS, W. C.
 SAMPLE TEMPERATURE..... 49.
 PERTINENT LITHOLOGY..... LAPILLI TUFF
 OTHER SAMPLE INFORMATION..... SPRINGS APPEAR TO BE DROWNED GAS VENTS WHICH ISSUE ALONG THE SOUTH SHORE OF EAST
 LAKE; MAP LISTED ABOVE IS OUT OF PRINT.
 REFERENCE..... UNPUBLISHED DATA, R. MARINER, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.
 WATER ANALYSIS DATE..... 1975/09/00
 WATER ANALYST(S)..... BARNES GROUP
 PH..... 6.42
 PH TEMPERATURE..... 49.
 SPECIFIC CONDUCTANCE..... 767.
 UNITS USED FOR ANALYSIS..... MG/L
 ALKALINITY..... 547.
 ALKALINITY MEASURED AS..... HCO₃
 SiO₂..... 199.
 LI..... 0.04
 NA..... 53.

RB.....	0.03
CS.....	L 0.1
CA.....	70.
MG.....	34.
MN.....	0.90
FE(TOTAL).....	0.66
CO.....	L 0.05
NI.....	L 0.02
CU.....	L 0.01
ZN.....	L 0.01
B.....	1.1
AL.....	0.008
PB.....	L 0.10
NH4.....	Q 1.3
F.....	0.16
CL.....	1.7
H2S.....	L 0.5
SO4.....	28.
DATE OF GAS ANALYSIS.....	1977/12/00
GAS ANALYST(S).....	EVANS, W. C.
UNITS OF ANALYSIS - GAS.....	VOLUME %
CH4.....	2.9
CO2.....	91.
N2.....	5.1
O2.....	0.9
OTHER ANALYTICAL DATA.....	GAS SAMPLES COLLECTED IN "GAS TIGHT" SYRINGES.
QUALIFICATION FIELD.....	NH4 RECALCULATED FROM N

RECORD 00013

RECORD NO.....	0015454
COMPILER.....	MARINER, R. H.
COMPILATION DATE.....	79/03
COMPILER AFFILIATION.....	U. S. GEOLOGICAL SURVEY
COMPILER CROSS INDEX.....	02
NAME OF SAMPLE SOURCE.....	PAULINA HOT SPRINGS
KGRA.....	NEWBERRY CALDERA
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	DESCHUTES
LATITUDE.....	43-44.5 N
LONGITUDE.....	121-15. W
TOWNSHIP.....	21S
RANGE.....	012E
SECTION.....	26
QUARTER SECTIONS.....	NE
MAP REFERENCE.....	NEWBERRY CRATER 1:125000
SAMPLE SOURCE TYPE.....	SPRING
SAMPLE TYPE.....	W
TYPE OF ANALYSIS(S).....	W G
COLLECTION DATE.....	1977/07/28
COLLECTOR(S).....	MARINER, R. H. AND EVANS, W. C.
OTHER SAMPLE INFORMATION.....	SPRINGS ISSUE AT EDGE OF PAULINA LAKE AND APPEAR TO BE DROWNED GAS VENTS. CHEMICAL
COMPOSITIONS ARE USELESS FOR REFERENCE.....	GEOTHERMAL CALCULATIONS BECAUSE OF THE GLASSY MATERIAL THE SPRINGS ISSUE FROM.
UNPUBLISHED DATA.....	R. MARINER, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.
WATER ANALYSIS DATE.....	1977/12/00

WATER ANALYST(S).....	BARNES GROUP
PH.....	6.82
PH TEMPERATURE.....	30.
UNITS USED FOR ANALYSIS.....	MG/L
ALKALINITY.....	856.
ALKALINITY MEASURED AS.....	HC03
SI02.....	205.
LI.....	0.22
NA.....	140.
K.....	17.
RB.....	0.04
CS.....	L 0.1
CA.....	56.
MG.....	60.
B.....	0.87
F.....	0.57
CL.....	6.0
SO4.....	L 1.
DATE OF GAS ANALYSIS.....	1978/07/28
GAS ANALYST(S).....	BARNES GROUP
UNITS OF ANALYSIS - GAS.....	VOLUME %
AR.....	0.09
CH4.....	0.55
C2H6.....	L 0.05
CO2.....	93.45
H2.....	L 0.01
HE.....	L 0.02
N2.....	4.74
O2.....	0.03
OTHER ANALYTICAL DATA.....	SAMPLES FOR GAS ANALYSIS COLLECTED IN "AIR TIGHT" SYRINGES.

RECORD 00014

RECORD NO.....	0015947
COMPILER.....	MARINER, R. H.
COMPILATION DATE.....	79/03
COMPILER AFFILIATION.....	U.S. GEOLOGICAL SURVEY
COMPILER CROSS INDEX.....	02
NAME OF SAMPLE SOURCE.....	PAULINA HOT SPRINGS
KGRA.....	NEWBERRY
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	DESCHUTES
SAMPLE SOURCE TYPE.....	SPRING
SAMPLE TYPE.....	W
TYPE OF ANALYSIS(S).....	W G
COLLECTOR(S).....	MARINER, R. H., AND EVANS, W. C.
REFERENCE.....	UNPUBLISHED DATA
WATER ANALYSIS DATE.....	1977/12/00
WATER ANALYST(S).....	BARNES GROUP
PH.....	6.82
PH TEMPERATURE.....	30.
SPECIFIC CONDUCTANCE.....	972.
UNITS USED FOR ANALYSIS.....	MG/L
ALKALINITY.....	856.
ALKALINITY MEASURED AS.....	HC03

SI02.....	205.
LI.....	0.22
NA.....	140.
K.....	17.
CS.....	L 0.1
CA.....	56.
MG.....	60.
B.....	0.87
F.....	0.57
CL.....	6.0
S04.....	L 1.
DATE OF GAS ANALYSIS.....	1977/12/00
GAS ANALYST(S).....	EVANS, W.C.
AR.....	0.09
CH4.....	0.55
C2H6.....	L 0.05
CO2.....	93.45
H2.....	L 0.01
HE.....	L 0.02
N2.....	4.74
O2.....	0.03
DEL C(13) OF CO2 - GAS.....	-8.70
DEL C(13) OF CH4 - GAS.....	-52.7

RECORD 00015

RECORD NO.....	0015455
COMPILER.....	MARINER, R. H.
COMPILATION DATE.....	79/03
COMPILER AFFILIATION.....	U. S. GEOLOGICAL SURVEY
COMPILER CROSS INDEX.....	02
NAME OF SAMPLE SOURCE.....	WARM WELL AT LITTLE CRATER CAMPGROUND
KGRA.....	NEWBERRY CALDERA
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	DESCHUTES
TOWNSHIP.....	21S
RANGE.....	012E
SECTION.....	36
QUARTER SECTIONS.....	NW
MAP REFERENCE.....	NEWBERRY CRATER 1:125000
SAMPLE SOURCE TYPE.....	WELL
SAMPLE TYPE.....	W
TYPE OF ANALYSIS(S).....	W
COLLECTION DATE.....	1975/08/20
COLLECTOR(S).....	MARINER, R. H. AND EVANS, W. C.
SAMPLE TEMPERATURE.....	35.5
REFERENCE.....	UNPUBLISHED DATA, R. MARINER, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.
WATER ANALYSIS DATE.....	1975/10/00
WATER ANALYST(S).....	BARNES GROUP
PH.....	6.46
PH TEMPERATURE.....	35.5
SPECIFIC CONDUCTANCE.....	900.
UNITS USED FOR ANALYSIS.....	MG/L
ALKALINITY.....	679.
ALKALINITY MEASURED AS.....	HCO3

SI02.....	161.
LI.....	0.12
NA.....	83.
K.....	10.
RB.....	0.02
CS.....	L 0.1
CA.....	54.
MG.....	48.
MN.....	0.25
FE(TOTAL).....	4.
CO.....	L 0.05
CU.....	L 0.01
HG.....	L 0.0001
B.....	2.5
AL.....	0.002
NH4.....	Q 0.53
F.....	0.6
CL.....	5.1
SO4.....	L 1.
QUALIFICATION FIELD.....	NH4 RECALCULATED FROM N

RECORD 00016

RECORD NO.....	0015456
COMPILER.....	MARINER, R. H.
COMPILATION DATE.....	79/03
COMPILER AFFILIATION.....	U. S. GEOLOGICAL SURVEY
COMPILER CROSS INDEX.....	01
NAME OF SAMPLE SOURCE.....	UMPQUA HOT SPRINGS
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	DOUGLAS
TOWNSHIP.....	26S
RANGE.....	004E
SECTION.....	20
GEOLOGIC PROVINCE.....	CASCADES
MAP REFERENCE.....	TOKETEE FALLS 1:62500
SAMPLE SOURCE TYPE.....	SPRING
SAMPLE TYPE.....	W
TYPE OF ANALYSIS(S).....	W G
COLLECTION DATE.....	1977/09/18
COLLECTOR(S).....	MARINER, R. H. AND EVANS, W. C.
SAMPLE TEMPERATURE.....	46.5
DEPOSITS OR ALTERATIONS.....	TRAVERTINE
WATER TREATMENT.....	FIELD FILTRATION, ACIDIFICATION, SILICA DILUTION, ALKALINITY DETERMINATION
REFERENCE.....	MARINER AND OTHERS, 1978
WATER ANALYSIS DATE.....	1978/01/00
WATER ANALYST(S).....	BARNES GROUP
PH.....	6.37
PH TEMPERATURE.....	46.5
SPECIFIC CONDUCTANCE.....	11300.
UNITS USED FOR ANALYSIS.....	MG/L
ALKALINITY.....	1380.
ALKALINITY MEASURED AS.....	HC03
SI02.....	90.
LI.....	2.4

NA.....	2400.
K.....	63.
RB.....	0.16
CS.....	0.20
CA.....	340.
MG.....	41.
FE (TOTAL).....	0.44
CO.....	L 0.02
NI.....	L 0.02
CU.....	L 0.01
ZN.....	0.02
CD.....	L 0.01
HG.....	L 0.0001
B.....	41.
AL.....	L 0.002
PB.....	L 0.1
F.....	1.5
CL.....	3500.
H2S.....	L 1.
SO4.....	190.
DATE OF GAS ANALYSIS.....	1978/01/00
GAS ANALYST(S).....	BARNES GROUP
UNITS OF ANALYSIS - GAS.....	VOLUME %
AR.....	L 0.02
CH4.....	L 0.005
CO2.....	99.38
H2.....	L 0.01
HE.....	L 0.02
N2.....	0.49
O2.....	0.04
OTHER ANALYTICAL DATA.....	GAS SAMPLE COLLECTED IN AN EVACUATED TUBE.

RECORD 00017

RECORD NO.....	0015949
COMPILER.....	BOWEN, R. G.
COMPILATION DATE.....	78/08
COMPILER AFFILIATION.....	OREGON DEPT. OF GEOLOGY AND MINERAL INDUSTRIES
COMPILER CROSS INDEX.....	01
NAME OF SAMPLE SOURCE.....	UMPQUA HOT SPRINGS
WELL-SPRING NO.....	26S/4E-20AC
WARNING NO.....	24
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	DOUGLAS
LATITUDE.....	43-17.6 N
LONGITUDE.....	122-22.0 W
TOWNSHIP.....	26S
RANGE.....	004E
SECTION.....	20
QUARTER SECTIONS.....	SW OF NE
MAP REFERENCE.....	TOKETEE FALLS
SAMPLE SOURCE TYPE.....	SPRING
POINT OF COLLECTION.....	NORTHERNMOST ORIFICE
SAMPLE TYPE.....	W
TYPE OF ANALYSIS(S).....	W

SAMPLE NUMBER.....	WS 78-116, ORE. DEPT. ENV. QUAL.
COLLECTION DATE.....	1978/06/27
COLLECTOR(S).....	BOWEN, RICCIO
SAMPLE TEMPERATURE.....	46.
DISCHARGE OF WELL OR SPRING..	38.
DEPOSITS OR ALTERATIONS.....	LARGE TRAVERTINE TERRACE
REFERENCE.....	WARING, 1965
WATER ANALYSIS DATE.....	1978/08/01
WATER ANALYST(S).....	BANERJEE, K. C.
PH.....	6.2
SPECIFIC CONDUCTANCE.....	10920.
UNITS USED FOR ANALYSIS.....	MG/L
ALKALINITY.....	1120.
ALKALINITY MEASURED AS.....	HCO3
TOTAL DISSOLVED SOLIDS.....	7445.
SiO2.....	96.
LI.....	2.4
NA.....	2150.
K.....	62.
CA.....	428.
MG.....	42.4
FE(TOTAL).....	6.2
B.....	41.2
AL.....	2.2
NH4.....	0.78
F.....	1.2
CL.....	3340.
AS.....	5.8
SO4.....	139.2
PO4.....	0.005
OTHER ANALYTICAL DATA.....	CO2 PRESENT, MINOR H2S

RECORD 00018

RECORD NO.....	0015948
COMPILER.....	RICCIO, J. F.
COMPILATION DATE.....	78/09
COMPILER AFFILIATION.....	OREGON DEPT. OF GEOLOGY AND MINERAL INDUSTRIES
COMPILER CROSS INDEX.....	05
NAME OF SAMPLE SOURCE.....	JOAQUIN MILLER RESORT
WELL-SPRING NO.....	155/31E-11DC
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	GRANT
TOWNSHIP.....	155
RANGE.....	031E
SECTION.....	11
QUARTER SECTIONS.....	SW OF SE
MAP REFERENCE.....	JOHN DAY 1:62500, CANYON MTN. 1:24000
SAMPLE SOURCE TYPE.....	SPRING
POINT OF COLLECTION.....	ORIFICE ADJACENT TO CREEK
SAMPLE TYPE.....	W
TYPE OF ANALYSIS(S).....	W
SAMPLE NUMBER.....	WS 78-129
COLLECTION DATE.....	1978/07/20
COLLECTOR(S).....	MORGAN, D. AND BLACK, G.

SAMPLE TEMPERATURE.....	40.
DISCHARGE OF WELL OR SPRING..	38.
DISCHARGE UNITS.....	LPM
OTHER SAMPLE INFORMATION.....	5 ORIFICES 4X5 FT WOOD LINED BOXES SUNK APPROXIMATELY 6 FT INTO THE GROUND. OWNER: T BAR RANCH
WATER ANALYSIS DATE.....	GPM
WATER ANALYST(S).....	BANERJEE, K. C.
PH.....	6.8
PH TEMPERATURE.....	40.
SPECIFIC CONDUCTANCE.....	2194.
UNITS USED FOR ANALYSIS.....	MG/L
TOTAL DISSOLVED SOLIDS.....	1461.
LI.....	0.25
NA.....	500.
K.....	11.2
CA.....	45.2
MG.....	12.1
MN.....	1.8
FE(TOTAL).....	0.1
B.....	12.7
AL.....	0.08
NH4.....	1.96
F.....	7 .1
CL.....	121.
AS.....	0.005
HCO3.....	103.
SO4.....	1.6
PO4.....	0.006
NO3.....	0.02
OTHER ANALYTICAL DATA.....	DISTINCT H2S ODOR

RECORD 00019

RECORD NO.....	0015461
COMPILER.....	MARINER, R. H.
COMPILATION DATE.....	79/03
COMPILER AFFILIATION.....	U. S. GEOLOGICAL SURVEY
COMPILER CROSS INDEX.....	23
NAME OF SAMPLE SOURCE.....	ALVORD HOT SPRINGS
KGRA.....	ALVORD
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	HARNEY
TOWNSHIP.....	34S
RANGE.....	034E
SECTION.....	33
GEOLOGIC PROVINCE.....	BASIN AND RANGE
MAP REFERENCE.....	ADEL 11250000
SAMPLE SOURCE TYPE.....	SPRING
SAMPLE TYPE.....	W
TYPE OF ANALYSIS(S).....	W
COLLECTION DATE.....	1976/09/09
COLLECTOR(S).....	MARINER, R. H. AND EVANS, W. C.
SAMPLE TEMPERATURE.....	78.5
WATER TREATMENT.....	FIELD FILTRATION, ACIDIFICATION, SILICA DILUTION, AND ALKALINITY DETERMINATION.
REFERENCE.....	MARINER, R. H., UNPUBLISHED DATA, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.

WATER ANALYSIS DATE.....	1977/01/00
WATER ANALYST(S).....	BARNES GROUP
PH.....	6.89
PH TEMPERATURE.....	78.5
SPECIFIC CONDUCTANCE.....	4070.
UNITS USED FOR ANALYSIS.....	MG/L
ALKALINITY.....	1230.
ALKALINITY MEASURED AS.....	HC03
SI02.....	128.
LI.....	1.9
NA.....	1000.
K.....	63.
RB.....	0.24
CS.....	0.1
CA.....	12.
MG.....	2.2
B.....	36.
NH4.....	L 0.5
F.....	11.
CL.....	770.
H2S.....	L 1.
SO4.....	180.

RECORD 00020

RECORD NO.....	0015938
COMPILER.....	MARINER, R. H.
COMPILATION DATE.....	79/03
COMPILER AFFILIATION.....	U.S. GEOLOGICAL SURVEY
COMPILER CROSS INDEX.....	09
NAME OF SAMPLE SOURCE.....	CRANE HOT SPRING
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	HARNEY
TOWNSHIP.....	24S
RANGE.....	033E
SECTION.....	34
QUARTER SECTIONS.....	NW OF SE
SAMPLE SOURCE TYPE.....	SPRING
SAMPLE TYPE.....	W
TYPE OF ANALYSIS(S).....	W
COLLECTION DATE.....	1931/08/30
SAMPLE TEMPERATURE.....	49.
REFERENCE.....	PIPER AND OTHERS, 1939
UNITS USED FOR ANALYSIS.....	PPM
NA+K.....	171.
CA.....	2.
CL.....	82.
HC03.....	173.
C03.....	22.
SO4.....	80.
NO3.....	1.4

RECORD 00021

RECORD NO.....	0015940
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COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U.S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 44
 NAME OF SAMPLE SOURCE..... HOTCHKISS WELL
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... HARNEY
 TOWNSHIP..... 24S
 RANGE..... 030E
 SECTION..... 01
 SAMPLE SOURCE TYPE..... SPRING
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W
 COLLECTION DATE..... 1931/08/26
 SAMPLE TEMPERATURE..... 27.
 REFERENCE..... PIPER AND OTHERS, 1939
 UNITS USED FOR ANALYSIS..... PPM
 SiO2..... 51.
 NA..... 30.
 K..... 2.4
 CA..... 9.6
 MG..... 1.7
 FE(TOTAL)..... 0.01
 CL..... 5.2
 HCO3..... 95.
 CO3..... N
 SO4..... 13.
 NO3..... 1.2

RECORD 00022

RECORD NO..... 0015458
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U. S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 22
 NAME OF SAMPLE SOURCE..... MICKEY HOT SPRINGS
 KGRA..... ALVORD
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... HARNEY
 TOWNSHIP..... 33S
 RANGE..... 035E
 SECTION..... 13
 GEOLOGIC PROVINCE..... BASIN AND RANGE
 MAP REFERENCE..... ADEL 1:250000
 SAMPLE SOURCE TYPE..... SPRING
 POINT OF COLLECTION..... FROM GASSY POOL ON EAST END OF COMPLEX AT BASE OF SINTER CAP
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W
 COLLECTION DATE..... 1976/09/09
 COLLECTOR(S)..... MARINER, R. H. AND EVANS, W. C.
 SAMPLE TEMPERATURE..... 86.
 DEPOSITS OR ALTERATIONS..... SINTER
 WATER TREATMENT..... FIELD ALKALINITY DETERMINATION, FILTERED, SILICA DILUTION.

OTHER SAMPLE INFORMATION.....	TWO OTHER SAMPLES COLLECTED FROM COMPLEX ON SAME DAY
REFERENCE.....	MARINER, R. H., UNPUBLISHED DATA, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.
WATER ANALYSIS DATE.....	1977/01/00
WATER ANALYST(S).....	BARNES GROUP
PH.....	8.31
PH TEMPERATURE.....	85.
SPECIFIC CONDUCTANCE.....	2220.
UNITS USED FOR ANALYSIS.....	MG/L
ALKALINITY.....	814.
ALKALINITY MEASURED AS.....	HCO3
SiO2.....	214.
LI.....	0.90
NA.....	550.
K.....	30.
RB.....	0.14
CS.....	L 0.1
CA.....	1.0
MG.....	L 0.1
FE(TOTAL).....	L 0.02
B.....	11.
AL.....	0.068
NH4.....	L 0.5
F.....	17.
CL.....	240.
H2S.....	L 1.
SO4.....	220.

RECORD 00023

RECORD NO.....	0015459
COMPILER.....	MARINER, R. H.
COMPILATION DATE.....	79/03
COMPILER AFFILIATION.....	U. S. GEOLOGICAL SURVEY
COMPILER CROSS INDEX.....	22
NAME OF SAMPLE SOURCE.....	MICKEY HOT SPRINGS
KGRA.....	ALVORD
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	HARNEY
TOWNSHIP.....	33S
RANGE.....	035E
SECTION.....	13
GEOLOGIC PROVINCE.....	BASIN AND RANGE
MAP REFERENCE.....	ADEL 1:250000
SAMPLE SOURCE TYPE.....	SPRING
POINT OF COLLECTION.....	FROM MORNING GLORY SHAPED POOL JUST BELOW ROAD IN UPPER PART OF COMPLEX
SAMPLE TYPE.....	W
TYPE OF ANALYSIS(S).....	W
COLLECTION DATE.....	1976/09/09
COLLECTOR(S).....	MARINER, R. H. AND EVANS, W. C.
DEPOSITS OR ALTERATIONS.....	SINTER
WATER TREATMENT.....	FIELD ALKALINITY DETERMINATION, FILTERED (0.1UM), SILICA DILUTED, ACIDIFIED SAMPLE
FOR GROUP II.	
OTHER SAMPLE INFORMATION.....	TWO OTHER SAMPLES COLLECTED FROM COMPLEX ON SAME DAY
REFERENCE.....	MARINER, R. H., UNPUBLISHED DATA, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.
WATER ANALYSIS DATE.....	1977/01/00

WATER ANALYST(S).....	BARNES GROUP
SPECIFIC CONDUCTANCE.....	2290.
UNITS USED FOR ANALYSIS.....	MG/L
ALKALINITY.....	836.
ALKALINITY MEASURED AS.....	HCO3
SI02.....	200.
LI.....	0.85
NA.....	560.
K.....	32.
RB.....	0.15
CS.....	L 0.1
CA.....	0.6
MG.....	L 0.1
B.....	11.
F.....	17.
CL.....	245.
H2S.....	L 1.
SO4.....	220.

RECORD 00024

RECORD NO.....	0015941
COMPILER.....	MARINER, R. H.
COMPILATION DATE.....	79/03
COMPILER AFFILIATION.....	U.S. GEOLOGICAL SURVEY
COMPILER CROSS INDEX.....	45
NAME OF SAMPLE SOURCE.....	MILLPOND SPRING
WARNING NO.....	52
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	HARNEY
TOWNSHIP.....	23S
RANGE.....	030E
SECTION.....	35
SAMPLE SOURCE TYPE.....	SPRING
SAMPLE TYPE.....	W
TYPE OF ANALYSIS(S).....	W
COLLECTION DATE.....	1931/08/26
SAMPLE TEMPERATURE.....	26.
REFERENCE.....	PIPER AND OTHERS, 1939
UNITS USED FOR ANALYSIS.....	PPM
NA+K.....	37.
CA.....	14.
CL.....	8.
HCO3.....	109.
CO3.....	N
SO4.....	11.
NO3.....	1.1

RECORD 00025

RECORD NO.....	0015942
COMPILER.....	MARINER, R. H.
COMPILATION DATE.....	79/03
COMPILER AFFILIATION.....	U.S. GEOLOGICAL SURVEY
NAME OF SAMPLE SOURCE.....	SPRING

WARING NO..... 51A
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... HARNEY
 TOWNSHIP..... 22S
 RANGE..... 32.5E
 SECTION..... 14
 SAMPLE SOURCE TYPE..... SPRING
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W
 COLLECTION DATE..... 1931/09/02
 SAMPLE TEMPERATURE..... 22.
 REFERENCE..... PIPER AND OTHERS, 1939
 UNITS USED FOR ANALYSIS..... PPM
 NA+K..... 12.
 CA..... 16.
 CL..... 1.9
 HCO3..... 86.
 CO3..... N
 SO4..... 4.
 NO3..... 1.0

RECORD 00026

RECORD NO..... 0015462
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U. S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 43
 NAME OF SAMPLE SOURCE..... UNNAMED HOT SPRING NEAR HOT LAKE
 KGRA..... ALVORD
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... HARNEY
 TOWNSHIP..... 37S
 RANGE..... 033E
 GEOLOGIC PROVINCE..... BASIN AND RANGE
 MAP REFERENCE..... ADEL 11250000
 OTHER LOCALITY INFORMATION... LARGE POOL AT THE NORTHWEST END OF THE MOUND LEADING AWAY FROM HOT LAKE.
 SAMPLE SOURCE TYPE..... SPRING
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W
 SAMPLE NUMBER..... GT 215 RM76
 COLLECTION DATE..... 1976/09/09
 COLLECTOR(S)..... MARINER, R. H. AND EVANS, W. C.
 SAMPLE TEMPERATURE..... 91.
 DEPOSITS OR ALTERATIONS..... SINTER
 WATER TREATMENT..... FIELD ALKALINITY DETERMINATION, FILTERED (0.1UM), DILUTED FOR SILICA, ACIDIFIED FOR METALS.
 OTHER SAMPLE INFORMATION..... LARGE POOL OF LOW DISCHARGE, MOST OF POOL AT 50 DEG. C; REPORTED TEMPERATURE (91 C) WAS MEASURED IN A GAS DISCHARGE VENT ON THE NORTHWEST SIDE OF THE POOL.
 REFERENCE..... MARINER, R. H., UNPUBLISHED DATA, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.
 WATER ANALYSIS DATE..... 1977/01/00
 WATER ANALYST(S)..... BARNES GROUP
 PH..... 7.94
 PH TEMPERATURE..... 46.

SPECIFIC CONDUCTANCE..... 1990.
 UNITS USED FOR ANALYSIS..... MG/L
 ALKALINITY..... 434.
 ALKALINITY MEASURED AS..... HC03
 SI02..... 189.
 LI..... 0.50
 NA..... 460.
 K..... 29.
 RB..... 0.23
 CS..... 0.2
 CA..... 15.
 MG..... 0.3
 B..... 15.
 F..... 7.5
 CL..... 270.
 H2S..... L 1.
 S04..... 320.

RECORD 00027

RECORD NO..... 0015463
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U. S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 43
 NAME OF SAMPLE SOURCE..... UNNAMED HOT SPRING NEAR HOT LAKE
 KGRA..... ALVORD
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... HARNEY
 TOWNSHIP..... 37S
 RANGE..... 033E
 GEOLOGIC PROVINCE..... BASIN AND RANGE
 MAP REFERENCE..... ADEL 11250000
 OTHER LOCALITY INFORMATION... SPRING ISSUES ON MOUND 400M NW OF HOT LAKE.
 SAMPLE SOURCE TYPE..... SPRING
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W
 SAMPLE NUMBER..... GT 211 RM76
 COLLECTION DATE..... 1976/09/09
 COLLECTOR(S)..... MARINER, R. H. AND EVANS, W. C.
 SAMPLE TEMPERATURE..... 97.
 DISCHARGE OF WELL OR SPRING.. 0.
 DEPOSITS OR ALTERATIONS..... SINTER
 WATER TREATMENT..... FIELD ALKALINITY AND AMMONIA DETERMINATION, FILTERED (0.1UM), ACIDIFIED FOR METALS,
 SILICA DILUTION.
 OTHER SAMPLE INFORMATION..... TEMPERATURE VARIES WITH GAS DISCHARGE RATE; SPRING DISCHARGES Laterally BENEATH
 SILICA CAP.
 REFERENCE..... MARINER, R. H., UNPUBLISHED DATA, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.
 WATER ANALYSIS DATE..... 1977/01/00
 WATER ANALYST(S)..... BARNES GROUP
 PH..... 7.36
 SPECIFIC CONDUCTANCE..... 1840.
 UNITS USED FOR ANALYSIS..... MG/L
 ALKALINITY..... 389.
 ALKALINITY MEASURED AS..... HC03

SI02.....	169.
LI.....	0.50
NA.....	435.
K.....	24.
RB.....	0.17
CS.....	0.1
CA.....	13.
MG.....	0.2
MN.....	0.05
FE(TOTAL).....	L 0.02
B.....	14.
AL.....	0.028
NH4.....	L 0.5
F.....	7.6
CL.....	250.
H2S.....	L 1.
SO4.....	300.

RECORD 00028

RECORD NO.....	0015464
COMPILER.....	MARINER, R. H.
COMPILATION DATE.....	79/03
COMPILER AFFILIATION.....	U. S. GEOLOGICAL SURVEY
COMPILER CROSS INDEX.....	43
NAME OF SAMPLE SOURCE.....	UNNAMED HOT SPRING NEAR HOT LAKE
KGRA.....	ALVORD
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	HARNEY
TOWNSHIP.....	37S
RANGE.....	033E
GEOLOGIC PROVINCE.....	BASIN AND RANGE
MAP REFERENCE.....	ADEL 1:250000
OTHER LOCALITY INFORMATION.....	SPRING LOCATED APPROXIMATELY 200M NW OF HOT LAKE.
SAMPLE SOURCE TYPE.....	SPRING
SAMPLE TYPE.....	W
TYPE OF ANALYSIS(S).....	W
SAMPLE NUMBER.....	GT 214 RM76
COLLECTION DATE.....	1976/09/09
COLLECTOR(S).....	MARINER, R. H. AND EVANS, W. C.
SAMPLE TEMPERATURE.....	90.5
DEPOSITS OR ALTERATIONS.....	SINTER
WATER TREATMENT.....	FILTERED (0.1UM), SILICA DILUTION, ACIDIFIED FOR METALS, FIELD ALKALINITY
DETERMINATION.....	
REFERENCE.....	MARINER, R. H., UNPUBLISHED DATA, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.
WATER ANALYSIS DATE.....	1977/01/00
WATER ANALYST(S).....	BARNES GROUP
PH.....	7.04
PH TEMPERATURE.....	90.5
SPECIFIC CONDUCTANCE.....	1910.
UNITS USED FOR ANALYSIS.....	MG/L
ALKALINITY.....	420.
ALKALINITY MEASURED AS.....	HCO3
SI02.....	154.
LI.....	0.5

NA.....	435.
K.....	26.
RB.....	0.18
CS.....	0.2
CA.....	15.
MG.....	0.3
B.....	15.
F.....	7.0
CL.....	250.
H2S.....	L 1.
S04.....	300.

RECORD 00029

RECORD NO.....	0015465
COMPILER.....	MARINER, R. H.
COMPILATION DATE.....	79/03
COMPILER AFFILIATION.....	U. S. GEOLOGICAL SURVEY
COMPILER CROSS INDEX.....	43
NAME OF SAMPLE SOURCE.....	UNNAMED HOT SPRING NEAR HOT LAKE
KGRA.....	ALVORD
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	HARNEY
TOWNSHIP.....	37S
RANGE.....	033E
GEOLOGIC PROVINCE.....	BASIN AND RANGE
MAP REFERENCE.....	ADEL 11250000
OTHER LOCALITY INFORMATION...	FENCED AREA AT THE NORTHWEST BASE OF THE MOUND AROUND HOT LAKE.
SAMPLE SOURCE TYPE.....	SPRING
POINT OF COLLECTION.....	SMALL POOL AT SE END OF FENCED AREA
SAMPLE TYPE.....	W
TYPE OF ANALYSIS(S).....	W
SAMPLE NUMBER.....	GT 216 RM76
COLLECTION DATE.....	1976/09/09
COLLECTOR(S).....	MARINER, R. H. AND EVANS, W. C.
SAMPLE TEMPERATURE.....	86.
DEPOSITS OR ALTERATIONS.....	SINTER
WATER TREATMENT.....	FIELD ALKALINITY DETERMINATION, FILTERED (0.1UM), SILICA DILUTION, ACIDIFIED FOR METALS.
REFERENCE.....	MARINER, R. H., UNPUBLISHED DATA, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.
WATER ANALYSIS DATE.....	1977/01/00
PH.....	8.67
PH TEMPERATURE.....	34.
SPECIFIC CONDUCTANCE.....	2040.
UNITS USED FOR ANALYSIS.....	MG/L
ALKALINITY.....	423.
ALKALINITY MEASURED AS.....	HC03
SI02.....	157.
LI.....	0.55
NA.....	450.
K.....	26.
RB.....	0.18
CS.....	0.1
CA.....	14.
MG.....	0.3

B..... 14.
 F..... 7.7
 CL..... 250.
 H2S..... L 1.
 SO4..... 300.

RECORD 00030

RECORD NO..... 0015466
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U. S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 43
 NAME OF SAMPLE SOURCE..... UNNAMED HOT SPRING NEAR HOT LAKE
 KGRA..... ALVORD
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... HARNEY
 TOWNSHIP..... 37S
 RANGE..... 033E
 GEOLOGIC PROVINCE..... BASIN AND RANGE
 MAP REFERENCE..... ADEL 1:250000
 OTHER LOCALITY INFORMATION... SPRING ISSUES APPROXIMATELY 397M NW OF HOT LAKE.
 SAMPLE SOURCE TYPE..... SPRING
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W
 SAMPLE NUMBER..... GT 212 RM76
 COLLECTION DATE..... 1976/09/09
 COLLECTOR(S)..... MARINER, R. H. AND EVANS, W. C.
 SAMPLE TEMPERATURE..... 97.
 DISCHARGE OF WELL OR SPRING.. 0.
 WATER TREATMENT..... FILTERED (0.1UM), SILICA DILUTION, ACIDIFIED FOR HEAVY METALS, ALKALINITY AND
 AMMONIA DATA IN THE FIELD.
 OTHER SAMPLE INFORMATION.... POOL DISCHARGES LATERALLY BENEATH SILICA CAP.
 REFERENCE..... MARINER, R. H., UNPUBLISHED DATA, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.
 WATER ANALYSIS DATE..... 1977/01/00
 WATER ANALYST(S)..... BARNES GROUP
 PH..... 7.26
 PH TEMPERATURE..... 97.
 SPECIFIC CONDUCTANCE..... 1840.
 UNITS USED FOR ANALYSIS..... MG/L
 ALKALINITY..... 372.
 ALKALINITY MEASURED AS..... HCO3
 SI02..... 163.
 LI..... 0.45
 NA..... 425.
 K..... 24.
 RB..... 0.17
 CS..... 0.1
 CA..... 12.
 MG..... 0.2
 FE(TOTAL)..... L 0.02
 B..... 14.
 NH4..... L 0.5
 F..... 7.4
 CL..... 250.

H2S..... L 1.
 SO4..... 300.

RECORD 00031

RECORD NO..... 0015467
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U. S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 43
 NAME OF SAMPLE SOURCE..... UNNAMED HOT SPRING NEAR HOT LAKE
 KGRA..... ALVORD
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... HARNEY
 TOWNSHIP..... 37S
 RANGE..... 033E
 GEOLOGIC PROVINCE..... BASIN AND RANGE
 MAP REFERENCE..... ADEL 1:250000
 OTHER LOCALITY INFORMATION... SPRING LOCATED APPROXIMATELY 300M NW OF HOT LAKE.
 SAMPLE SOURCE TYPE..... SPRING
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W
 SAMPLE NUMBER..... GT 213 RM76
 COLLECTION DATE..... 1976/09/09
 COLLECTOR(S)..... MARINER, R. H. AND EVANS, W. C.
 SAMPLE TEMPERATURE..... 84.
 DEPOSITS OR ALTERATIONS..... SINTER
 WATER TREATMENT..... FILTERED (0.1UM), SILICA DILUTION, ACIDIFIED FOR METALS, FIELD ALKALINITY AND
 AMMONIA DETERMINATION.
 OTHER SAMPLE INFORMATION..... SINTER ARCH IN SAMPLED POOL.
 REFERENCE..... MARINER, R. H., UNPUBLISHED DATA, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.
 WATER ANALYSIS DATE..... 1977/01/00
 WATER ANALYST(S)..... BARNES GROUP
 PH..... 7.48
 PH TEMPERATURE..... 84.
 SPECIFIC CONDUCTANCE..... 1890.
 UNITS USED FOR ANALYSIS..... MG/L
 ALKALINITY..... 386.
 ALKALINITY MEASURED AS..... HCO3
 SI02..... 164.
 LI..... 0.45
 NA..... 440.
 K..... 25.
 RB..... 0.18
 CS..... 0.1
 CA..... 12.
 MG..... 0.2
 B..... 15.
 NH4..... L 0.5
 F..... 7.5
 CL..... 250.
 H2S..... L 1.
 SO4..... 310.

RECORD 00032

RECORD NO..... 0015939
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U.S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 15
 NAME OF SAMPLE SOURCE..... UNNAMED HOT SPRING NEAR HARNEY LAKE
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... HARNEY
 TOWNSHIP..... 27S
 RANGE..... 29.5E
 SECTION..... 36
 QUARTER SECTIONS..... NE OF SE
 SAMPLE SOURCE TYPE..... SPRING
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W
 COLLECTION DATE..... 1931/08/21
 SAMPLE TEMPERATURE..... 59.
 REFERENCE..... PIPER AND OTHERS, 1939
 UNITS USED FOR ANALYSIS..... PPM
 SI02..... 92.
 NA..... 622.
 K..... 12.
 CA..... 13.
 MG..... 3.0
 FE(TOTAL)..... 0.03
 CL..... 562.
 HCO3..... 601.
 CO3..... N
 SO4..... 140.
 NO3..... 0.5

RECORD 00033

RECORD NO..... 0015468
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U. S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 06
 NAME OF SAMPLE SOURCE..... KITSON HOT SPRING
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... LANE
 TOWNSHIP..... 22S
 RANGE..... 003E
 SECTION..... 06
 QUARTER SECTIONS..... NE
 GEOLOGIC PROVINCE..... CASCADES
 MAP REFERENCE..... OAKRIDGE 1:62500
 SAMPLE SOURCE TYPE..... SPRING
 POINT OF COLLECTION..... INFLOW PIPE TO SWIMMING POOL
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W

COLLECTION DATE.....	1978/05/11
COLLECTOR(S).....	MARINER, R. H. AND EVANS, W. C.
SAMPLE TEMPERATURE.....	43.
WATER TREATMENT.....	FIELD FILTERED, ACIDIFIED, SILICA DILUTION, AND ALKALINITY DETERMINED ON A COOLED SAMPLE.
REFERENCE.....	MARINER, R. H., UNPUBLISHED DATA, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.
WATER ANALYSIS DATE.....	1978/07/00
WATER ANALYST(S).....	BARNES GROUP
PH.....	7.31
PH TEMPERATURE.....	43.
SPECIFIC CONDUCTANCE.....	10100.
UNITS USED FOR ANALYSIS.....	MG/L
ALKALINITY.....	24.
ALKALINITY MEASURED AS.....	HCO3
SiO2.....	45.
LI.....	2.0
NA.....	1500.
K.....	26.
RB.....	0.10
CS.....	0.1
CA.....	710.
MG.....	1.6
MN.....	0.15
FE (TOTAL).....	L 0.04
CO.....	L 0.02
NI.....	L 0.02
CU.....	L 0.01
ZN.....	L 0.01
CD.....	L 0.01
HG.....	L 0.0001
B.....	22.
AL.....	0.002
PB.....	L 0.1
F.....	2.4
CL.....	3450.
H2S.....	L 0.5
SO4.....	210.

RECORD 00034

RECORD NO.....	0015460
COMPILER.....	MARINER, R. H.
COMPILATION DATE.....	79/03
COMPILER AFFILIATION.....	U. S. GEOLOGICAL SURVEY
COMPILER CROSS INDEX.....	23
NAME OF SAMPLE SOURCE.....	ALVORD HOT SPRINGS
KGRA.....	ALVORD
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	OREGON
TOWNSHIP.....	34S
RANGE.....	034E
SECTION.....	33
GEOLOGIC PROVINCE.....	BASIN AND RANGE
MAP REFERENCE.....	ADEL 1:250000
SAMPLE SOURCE TYPE.....	SPRING

SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W
 COLLECTION DATE..... 1976/09/09
 COLLECTOR(S)..... MARINER, R. H. AND EVANS, W. C.
 SAMPLE TEMPERATURE..... 78.5
 WATER TREATMENT..... FIELD FILTRATION, ACIDIFICATION, SILICA DILUTION, AND ALKALINITY DETERMINATION.
 REFERENCE..... MARINER, R. H., UNPUBLISHED DATA, U.S. GEOLOGICAL SURVEY, MENLO PARK, CA.
 WATER ANALYSIS DATE..... 1977/01/00
 WATER ANALYST(S)..... BARNES GROUP
 PH..... 6.90
 PH TEMPERATURE..... 78.5
 SPECIFIC CONDUCTANCE..... 4100.
 UNITS USED FOR ANALYSIS..... MG/L
 ALKALINITY..... 1225.
 ALKALINITY MEASURED AS..... HCO3
 SIO2..... 129.
 LI..... 1.9
 NA..... 990.
 K..... 64.
 CS..... 0.1
 CA..... 12.
 MG..... 2.1
 B..... 35.
 F..... 9.6
 CL..... 770.
 H2S..... L 1.
 SO4..... 180.

RECORD 00035

RECORD NO..... 0015946
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U.S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 05
 NAME OF SAMPLE SOURCE..... WAGNER WELL
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... UNION
 TOWNSHIP..... 015
 RANGE..... 038E
 SECTION..... 24
 SAMPLE SOURCE TYPE..... WELL
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W
 COLLECTION DATE..... 1950/08/09
 SAMPLE TEMPERATURE..... 29.
 DEPTH OF WELL..... 351.
 REFERENCE..... HAMPTON AND BROWN, 1964
 PH..... 8.0
 SPECIFIC CONDUCTANCE..... 148.
 UNITS USED FOR ANALYSIS..... PPM
 NA..... 28.
 K..... 4.0
 CA..... 3.6
 MG..... 0.8

B.....	0.1
F.....	2.0
CL.....	3.1
HC03.....	62.
C03.....	4.9
S04.....	8.3
NO3.....	0.2

RECORD 00036

RECORD NO.....	0015943
COMPILER.....	MARINER, R. H.
COMPILATION DATE.....	79/03
COMPILER AFFILIATION.....	U.S. GEOLOGICAL SURVEY
COMPILER CROSS INDEX.....	01
NAME OF SAMPLE SOURCE.....	WELL
WELL-SPRING NO.....	03S/38E-06
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	UNION
TOWNSHIP.....	03S
RANGE.....	038E
SECTION.....	06
SAMPLE SOURCE TYPE.....	WELL
SAMPLE TYPE.....	W
TYPE OF ANALYSIS(S).....	W
COLLECTION DATE.....	1957/05/10
SAMPLE TEMPERATURE.....	27.
DEPTH OF WELL.....	1391.
PERTINENT LITHOLOGY.....	BASALT
REFERENCE.....	HAMPTON AND BROWN, 1964
SPECIFIC CONDUCTANCE.....	146.
UNITS USED FOR ANALYSIS.....	PPM
ALKALINITY.....	84.
ALKALINITY MEASURED AS.....	HC03
SI02.....	71.
NA.....	19.
K.....	5.
CA.....	10.
MG.....	0.2
F.....	0.5
CL.....	1.
S04.....	4.5

RECORD 00037

RECORD NO.....	0015944
COMPILER.....	MARINER, R. H.
COMPILATION DATE.....	79/03
COMPILER AFFILIATION.....	U.S. GEOLOGICAL SURVEY
COMPILER CROSS INDEX.....	01
NAME OF SAMPLE SOURCE.....	WELL
WELL-SPRING NO.....	03S/38E-05
COUNTRY.....	UNITED STATES
STATE/PROVINCE.....	OREGON
COUNTY.....	UNION

TOWNSHIP..... 03S
 RANGE..... 038E
 SECTION..... 05
 SAMPLE SOURCE TYPE..... WELL
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W
 COLLECTION DATE..... 1955/01/21
 SAMPLE TEMPERATURE..... 27.
 DISCHARGE OF WELL OR SPRING.. 1093.
 DISCHARGE UNITS..... LPM
 DEPTH OF WELL..... 468.
 PERTINENT LITHOLOGY..... ALTERNATING LAYERS OF TUFF AND BASALT
 REFERENCE..... HAMPTON AND BROWN, 1964
 WATER ANALYST(S)..... OREGON STATE BOARD OF HEALTH
 PH..... 7.9
 UNITS USED FOR ANALYSIS..... PPM
 SI02..... 84.
 NA..... 27.
 K..... 5.
 CA..... 5.
 MG..... 0.3
 F..... 0.5
 CL..... 3.2
 SO4..... 3.3

RECORD 00038

RECORD NO..... 0015945
 COMPILER..... MARINER, R. H.
 COMPILATION DATE..... 79/03
 COMPILER AFFILIATION..... U.S. GEOLOGICAL SURVEY
 COMPILER CROSS INDEX..... 01
 NAME OF SAMPLE SOURCE..... WELL
 WELL-SPRING NO..... 03S/38E-05M
 COUNTRY..... UNITED STATES
 STATE/PROVINCE..... OREGON
 COUNTY..... UNION
 TOWNSHIP..... 03S
 RANGE..... 038E
 SECTION..... 05
 SAMPLE SOURCE TYPE..... WELL
 SAMPLE TYPE..... W
 TYPE OF ANALYSIS(S)..... W
 COLLECTION DATE..... 1955/01/21
 SAMPLE TEMPERATURE..... 25.
 DISCHARGE OF WELL OR SPRING.. 1060.
 DISCHARGE UNITS..... LPM
 DEPTH OF WELL..... 437.
 PERTINENT LITHOLOGY..... BASALT AND TUFF IN ALTERNATING LAYERS
 REFERENCE..... HAMPTON AND BROWN, 1964
 WATER ANALYST(S)..... OREGON STATE BOARD OF HEALTH
 PH..... 7.9
 UNITS USED FOR ANALYSIS..... PPM
 ALKALINITY..... 63.
 ALKALINITY MEASURED AS..... HC03
 SI02..... 72.

NA.....	30.
K.....	5.
CA.....	4.8
MG.....	1.3
F.....	0.5
CL.....	2.1
SO4.....	4.8