UNITED STATES ENVIRONMENTAL PROTECTION

# WATER QUALITY ASSESSMENT

# BEAR RIVER BASIN

SURVEILLANCE AND ANALYSIS DIVISION

REGION X · PACIFIC NORTHWEST & AL
1200 SIXTH AVENUE, SEATTLE, WASHINGTO

1 Kodachrome
SLIDE

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EPA: 910R-76-102

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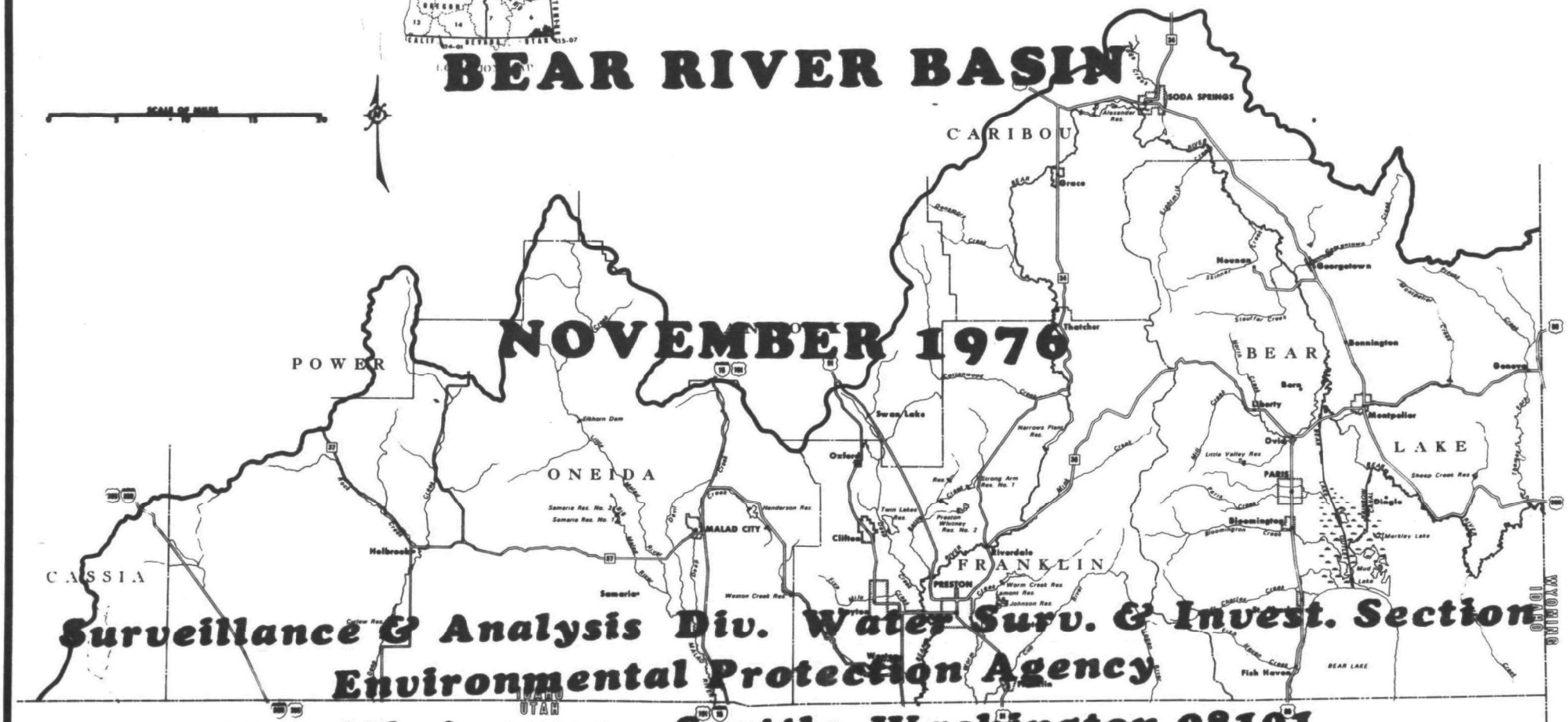
## BEAR RIVER BASIN

SURVEILLANCE AND ANALYSIS DIVISION

# BEAR RIVER BASIN

## NOVEMBER 1976




**Surveillance & Analysis Div. Water Surv. & Invest. Section**

**Environmental Protection Agency**

**1200 6th Avenue Seattle, Washington 98101**

# REGION 10 WATER QUALITY ASSESSMENT

A logical step-by-step approach is needed to identify and abate nonpoint sources of pollution within Region 10. The first step must be to assess the magnitude and extent of the nonpoint source problem.

Region 10 has developed a water quality assessment approach which will assist EPA planners, land agencies, and state and local agencies in identifying probable nonpoint sources and determining their effects upon the "fishable-swimmable" aspect of Regional streams.

Generally the approach is to determine the biological, recreational, and water quality status of Regional streams and to display each status on color coded STORET basin maps. This information is to be related to land use and land ownership (also on basin maps) as well as other factors such as hydro-modifications, river flows, mining activities, and point source discharges. All this information is then systematically organized on a summary table which can be easily used.

This package contains information for one river basin within Region 10. The package consists of the following:

1. Five slides of the maps used in the evaluation of the basin.
2. A flow chart showing the phased assessment procedure.
3. A summary table for the basin and a detailed description of information on the table.
4. A basin point source discharge listing by segment number.
5. Specific information for biological and recreational status.

The STORET basin map is used as the base map for all status evaluations. Each map is overlayed by a transparency that contains segment basin boundaries representing drainage areas associated with segments defined by each state within the Region. These segment boundaries are used as the basis for assessing water and land information.

Biological status information is obtained from field biologists representing state and federal fish and game agencies. Their judgment is based upon a set of criteria shown on Table 1. The biological status map (slide #1) shows the results of this assessment.

Recreational status (slide #2) is obtained from field biologists, fishermen, swimmers, and recreational specialists utilizing the criteria identified in the Table Explanation.

Slide #3 shows the water quality station locations in each segment. STORET was used as a basis for all water quality data since most state and federal agencies and many local agencies and universities store data in Region 10. The number associated with each point on the map references a STORET printout page number. Data was retrieved utilizing the STORET standards flagging program with EPA's Water Quality Criteria as the threshold levels. Selected water quality threshold and violation screening criteria are shown and defined in the Table Explanation.

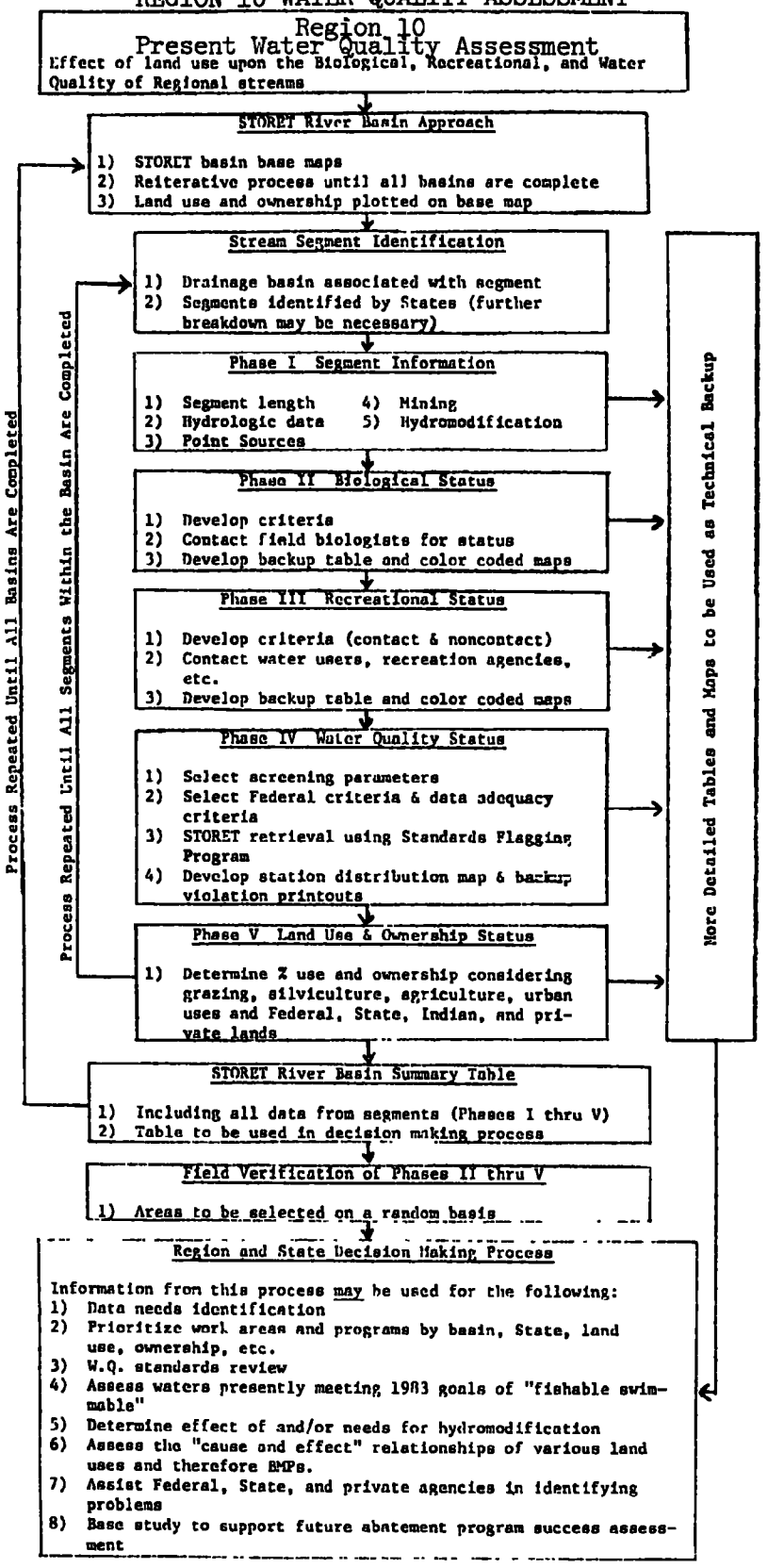
Slides #4 and #5 show land use and land ownership throughout the STORET basin. The source of this information is from land management agencies.

All the information previously discussed and shown on maps is summarized on the River Basin tables. Information on these tables is arranged by segment in an upstream to downstream order beginning at the upper end of each STORET basin.

The information obtained and compiled using this procedure is general; however, it indicates probable cause and effect relationships related to land use and land ownership. The backup information on field tables, STORET printouts and maps allows the user to make more detailed evaluations. Specific information gathering investigations in problem areas would be necessary for an accurate "cause and effect" picture.

This evaluation process is still evolving and is continually being improved based on field verifications and comments from users. If you have specific questions on the procedures used in these evaluations, please contact Bill Schmidt, Chief, Water Surveillance and Investigation Section, Surveillance and Analysis Division, Region 10 (Telephone--FTS 399-1210).

# REGION 10 WATER QUALITY ASSESSMENT



The field biologist utilizes the following evaluation matrix in determining stream segment status classification.

## BIOLOGICAL EVALUATION CRITERIA

TABLE I

| CRITERIA FOR BIOLOGICAL EVALUATION / TIME & SEVERITY FACTORS | Duration of Adverse Condition | | | Severity of Adverse Condition | | | Period of Biological Activity | |
|---|---|---|---|---|---|---|---|---|
| | NEVER–INTERMITTENT–CONTINUOUS | | | LOW ——— HIGH | | | NON-CRITICAL | CRITICAL |
| I. Destruction of habitat for indigenous species - passage, spawning, rearing. | Blue → | | Red | Blue → | | Red | Blue/Yellow | Red |
| II. Interuption of total food chain | Blue → | | Red | Blue → | | Red | Yellow | Red |
| III. Interference with the well being of indigenous species of fish or food chain organisms. | Blue → | Red | Red | Yellow → | | Red | Red | Red |

NOTE: The color-code (blue, yellow, and red) is used on the maps (see slides).

On the summary tables, a pattern-code was used to allow for easier duplication.

Therefore: Blue corresponds to:

Yellow corresponds to:

Red corresponds to:

## TABLE EXPLANATION

### 1. Sub-basin Information

**Sub-basin:** Each "STORET" major river basin is divided into minor river basins based on major tributaries to the main stream. Each sub-basin is further subdivided into segments. In the table the segments and sub-basins appear in an upstream to downstream order.

**River:** The major river or stream and its tributaries in the segment being classified are listed.

**Segment Number:** The reach of the river under consideration, including the hydrologic drainage area that contributes flow to that reach, is designated by number for the purposes of identification and cross-referencing. This number will generally be the state assigned alpha-numeric code except where a finer division is necessary in giving a more accurate description of the area.

**Drainage Area:** The area of the entire segment being described is given in square miles.

**Flow:** Annual average, maximum, and minimum discharge (in cfs) are given for the major stream or reach in each segment where USGS flow records are available.

**River Mile Range:** The upper and lower river miles of the stream or reach in each segment as well as the river mile of the confluence with the next lowest order stream is given. For instance, the Powder River (length 145 miles), which enters the Snake River at river mile 296, is described under "R.M. Range" as:

296/
145-0

**Segment Length:** The length, in miles, of the reach of the major stream in each segment is given.

### 2. Environmental Information

**Significant Discharger:** The number of significant dischargers, as determined by EPA S&A Region X, is noted under the appropriate column, being either Municipal (M) or Industrial (I).

Hydro-modification: Agricultural (irrigation diversions or returns), reservoirs, channel realignment, or other changes in the natural flow of the stream under consideration are identified.

I = Agricultural Modifications
R = Reservoir Modification (Number of reservoirs having a total capacity of 5,000 acre-feet or more)
C = Channel Realignment, Revetments, etc.
O = Other

Where specific data is available, the numerical extent of the hydromodification is noted as a number after the letter abbreviation. Where numerical information is lacking, a qualitative notation of extent is used. A '+' means there is extensive modification of that type in the segment, no symbol after the letter means it is present, and no letter means its presence is at most negligible.

Mining: Present or active (A) mining operations and past or non-active (N) mining operations are identified for each segment.

Water Use: A general description of the present water uses in the segment is given. Pwr - power; Rec - recreation; Ag - agriculture; F+W - fish and wildlife; Mun - municipal; M+I - municipal and industrial; Ind - industrial; Nav - navigation.

Biological Status: This is a qualitative assessment of biological conditions in the streams of that particular segment.

Solid Black - (corresponds to red on map) - water environment is unsuitable for a healthy biological community.
Diagonal Stripes - (yellow on map) - a questionable or intermittedly unhealthy environment exists.
Dots - (blue on map) - a good environment exists for the biota.
Blank Space - (green on map) - insufficient data is available for evaluation.

Determination of the biological status was carried out by experienced, knowledgable biologists associated with various federal and state agencies who are familiar with the streams in the river segments. Table 1 outlines the criteria used for the biological evaluations. Evaluations are limited to major streams. In general, these include first through second or third order streams for rivers near the seacoast and first through fourth order for inland streams. A certain amount of subjective judgment has been used, however, as to whether to include

Biological Status (cont): certain higher order streams. Whether a certain higher order stream falls within the just mentioned bounds is not in itself justification for inclusion. Its size and significance are also taken into account.

Recreational Status: This is the qualitative assessment of water related recreational use for each segment. The criteria used for evaluation of recreational status was based on typical year-round use. Two major categories were considered: (1) contact recreation (swimming), and (2) non-contact recreation (boating, fishing, and aesthetics).

Dots - (corresponds to blue on map) - popular areas, few complaints registered, wide diversity of socio-economic uses in evidence.

Diagonal Stripes - (yellow on map) - part-time use due to water management, seasonal water quality and quantity conditions, seasonal accessibility, etc.

Solid Black - (red on map) - no use in areas where that use should normally exist.

Blank Space - (green on map) - insufficient data for evaluation.

The stream order criteria for inclusion in the evaluation are the same as for biological status.

Water Quality Status (Parametric Coverage): An assessment of the water quality data available in each of the segments is given. All data used in the analysis and evaluation is available in EPA's "STORET" System. A group of twelve basic parameters is used in assessing the water quality in each segment.

| Parameter | Criteria Threshold Level/Units | Environmental Impact and Reference |
|---|---|---|
| Temperature (T) | 20°C (68°F) MAX | To protect growth and migration routes of salmonids (Federal Water Pollution Control Administration (FWPCA), Water Quality Criteria, 1968). |
| Dissolved Oxygen (DO) | 6 mg/1 MIN<br>90% SAT MIN | For good growth and the general well-being of trout, salmon, and other species of cold water biota, DO concentrations should not be below 6 mg/1 (FWPCA, Water Quality Criteria, 1968). In addition, state water quality standards normally require 90% saturation for dissolved oxygen (Idaho and Oregon). |

| Parameter | Criteria Threshold Level/Units | Environmental Impact and Reference |
|---|---|---|
| Dissolved Gas (TDG) | 110% SAT MAX | To prevent fish fatalities by "gas bubble disease" in which dissolved gases in their circulatory system come out of solution to form bubbles (emboli) which block the flow of blood through the capillary vessels (Environmental Protection Agency, Quality Criteria for Water, 1976). |
| pH (pH) | 6.5 MIN<br>8.5 MAX | The pH range which is not directly lethal to fish is 5-9. However, the toxicity of several common pollutants is markedly affected by pH changes within this range, and increasing acidity or alkalinity may make these poisons more toxic. Therefore, a pH range of 6.5 to 9.0 is desirable to protect freshwater aquatic life (EPA, Quality Criteria for Water, 1976). In primary contact recreation waters, the pH should be within the range of 6.5-8.3 except when due to natural causes to prevent the possibilities of eye irritations in humans (FWPCA, Water Quality Criteria, 1968). State pH standards range from 6.5 to 9.0 for Idaho and 6.5 to 8.5 for Oregon and Washington. In light of the above information, our criteria have been set at 6.5 to 8.5. |
| Turbidity (Turb) | 25 JTU MAX | Most state standards have a turbidity standard of "not to exceed 5 JTU over background or natural conditions". It is, however, rather ambiguous what "background or natural conditions" are. Also, this type of standard does not relate to the fishable/swimmable concept. Excessive turbidity reduces photosynthesis by aquatic plant life and damages the spawning grounds of fish and habitat of aquatic invertebrates. It has been observed that maximum production in hatchery ponds and reservoirs occurred where the average turbidity was less than 25 JTU (Buck, D.H., 1956. Effects of turbidity on fish and fishing. In: 21st North Amer. Wildlife Conf. Trans.). |

| Parameter | Criteria Threshold Level/Units | Environmental Impact and Reference |
|---|---|---|
| Phosphorus (Phos) | Total 0.05 mg/l-P<br>Total 0.15 mg/l-$PO_4$<br>Ortho 0.025 mg/l-P<br>Ortho 0.075 mg/l-$PO_4$<br>Diss. Ortho 0.01 mg/l-P | Limited studies made to date indicate that different species of algae have somewhat different phosphorus requirements with the range of available phosphorus usually falling between 0.01 and 0.05 mg/l as P. At these levels, when other conditions are favorable, blooms may be expected. While there is no set relationship between total and available phosphorus (because the ratio varies with season, temperature, and plant growth), the total phosphorus is governing as it is the reservoir that supplies the available phosphorus. A desirable guideline for total phosphorus is 0.05 mg/l as P where streams enter lakes or reservoirs (FWPCA, Water Quality Criteria, 1968). The other criteria levels for different units and forms of phosphorus have been determined by unit conversion and relationships found between the phosphorus forms in Region 10. The other forms of phosphorus are used as indicators only when data for total phosphorus is lacking. |
| Nitrate Nitrogen (N) | 0.30 mg/l-N<br>1.33 mg/l-$NO_3$ | Mackenthun cited results indicating that inorganic nitrogen at 0.30 mg/l and inorganic phosphorus at 0.01 mg/l, at the start of an active growing season, subsequently permitted algal blooms (Mackenthun, K.M., 1965. Nitrogen and phosphorus in water. U.S. Department of Health, Education, and Welfare, Public Health Service.). |
| Ammonia Nitrogen ($NH_3$) | Un-ionized 0.02 mg/l-N<br>Total 0.20 mg/l-N<br>Total 0.26 mg/l-$NH_4$ | The amount of un-ionized ammonia is very much dependent upon pH, temperature, and concentration of total ammonia. A maximum level of 0.02 mg/l as un-ionized ammonia is recommended to minimize toxicity to freshwater aquatic life (EPA, Quality Criteria for Water, 1976). Concentrations of total ammonia above 0.20 mg/l as N are indicative of organic pollution (Klein, River Pollution 1., Chemical Analysis, 1959). |

| Parameter | Criteria Threshold Level/Units | Environmental Impact and Reference |
|---|---|---|
| Bacteria (Bact) | Total Coliform 1000/100 ml<br>Fecal Coliform 240/100 ml | Total and fecal coliform are microbiological indicators used to determine or indicate the safety of water for drinking, swimming, and shellfish harvesting. A fecal coliform log mean of 200 per 100 ml for bathing waters and 14 per 100 ml for shellfish harvesting waters is recommended by Quality Criteria for Water, EPA, 1976. State standards range from 240 total/50 fecal per 100 ml for primary contact recreation in Idaho, 1000 total per 100 ml in Oregon for general beneficial use, and 1000 total per 100 ml in Washington for Class B general recreation. From the above discussion, the suggested criteria level based on general recreation is 1000 per 100 ml for total coliform and 240 per 100 ml for fecal coliform. |
| Dissolved Solids<br>Conductivity<br>(Cond) | TDS 500 mg/l<br>Cond. 750 umho/cm | High levels of dissolved solids are a hazard for irrigation water. A maximum level of 500 mg/l is indicated for water from which no detrimental effects will usually be noticed. For domestic water supply, the maximum level is 250 mg/l (EPA, Quality Criteria for Water, 1976). A relationship exists betweeen dissolved solids and conductivity where total dissolved solids = .6 to .8 times the conductivity. |
| Pesticide Toxicity<br>(OTOX) | | The following criteria levels are recommended to protect the freshwater aquatic life (EPA, Quality Criteria for Water, 1976). |
| Aldrin | .003 ug/l | |
| Dieldrin | .003 ug/l | |
| Chlordane | .010 ug/l | |
| DDT | .001 ug/l | |
| Endrin | .004 ug/l | |
| Heptachlor | .001 ug/l | |
| Lindane | .010 ug/l | |
| Malathion | .100 ug/l | |
| Parathion | .040 ug/l | |

Heavy Metals (Met)

| Metal | Criteria Threshold Level | Environmental Impact | Reference |
|---|---|---|---|
| Boron | 750 ug/l | For long term irrigation, a maximum level of 750 ug/l is recommended for sensitive crops | 2 |
| Cadmium | 3 ug/l | Harmful to eggs and larvae of salmon in hard water | 1 |
| Chromium | 50 ug/l | Mixed aquatic populations protected | 1 |
| Copper | 20 ug/l | 96 hour $TL_{50}$ to Chinook salmon in soft water was 31 ug/l at hatch and 18 ug/l at 1 month old | 2 |
| Lead | 30 ug/l | Aquatic life protected | 1 |
| Mercury | 0.2 ug/l | Selected species of fish and predatory aquatic organisms protected | 1 |
| Zinc | 80 ug/l | Algalcidal concentration for Selenastrum Capriconutum | 3 |

References:


1. EPA R3.73.033, Ecological Research Series, Water Quality Criteria 1972, U.S. Government Printing Office, 1973.

2. EPA, Quality Criteria for Water, 1976.

3. Green, et. al., Report to Region X on the Results of the Spokane River Algal Assays, 1973.

The environmental status per each parameter per segment is found by determining the percentage of samples that are in violation of the particular threshold level. This percentage is then weighted according to the annual sample size for each segment as follows:

| Status Code | Class | Percent Violations<br>Number of Samples/Year/Segment/Parameter<br>More than 20 | 11 to 20 | 4 to 10 |
|---|---|---|---|---|
| Solid Black | Not Acceptable | 51-100% Viol. | 61-100% Viol. | 71-100% Viol. |
| Diagonal Stripes | Objectionable | 11-50% | 21-60% | 31-70% |
| Dots | Acceptable | 0-10% | 0-20% | 0-30% |

No code at all (blank space) indicates insufficient data for evaluation.

The data used for this evaluation is for the period beginning January 1, 1970 until the date of the report. For each station, parameters with less than 4 samples per year are not used.

Water Quality Status (Station/Data Statistics)

Number of Stations - Actual number of stations within each segment that had at least one parameter with 4 or more samples per year.
Number of Samples/Parameter - Number of samples per year for each parameter averaged for all parameters sampled.
Data Adequacy - This determination was made by evaluating the distribution of stations, amount of data, and in some cases adequacy of parametric coverage versus known environmental quality problems.
+ denotes adequate data
- denotes indadequate data

3. % Land Ownership

The figure in each column represents the percentage of total area within each segment under the jurisdiction of the noted groups.

4. % Land Use

The figure in each column represents the percentage of total area within each segment that is used for the various purposes listed.

BEAR **RIVER BASIN** NOVEMBER **YEAR - 1976**

| Sub-basin Information | | | | | | | Environmental Information | | | | | | | | | | | | % Land Ownership | | | | | % Land Use | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub-basin | River | Seg # | Drain Area m² | cfs Flow x10³ | R M Range | Seg Length | Sig Disch M | Sig Disch I | Hydro-mod | Mining | Water Use | Bio Sta | Rec Sta | WATER QUALITY parameters (=acceptable =objectionable =not acceptable) | # Sta | # Smp/yr | Data Adequacy | USFS | BLM | Indian | State | Private | Urban | Agric | Range | Forest | Water | Wetland | Barren | Tundra | Snow & Ice |
| | BEAR R.* THOMAS FK.¢ Wyo. to Bear L. conf. | BB-10 | 390 | *.58<br>2.2<br>.2<br>¢.05<br>.43<br>.02 | 285.0-238.9 | 46 | | | I<br>C | | Ag<br>Rec<br>F+W | | | T, DO, TDG, pH, Turb, Phos; N, NH3, Bact, Met, Cond, OTox | 2 | 12 | - | 29 | 14 | | 4 | 53 | | 24 | 59 | 17 | | | | | |
| | BEAR L. outlets & tribs to Bear R | BB-120 | 430 | .58<br>1.4<br>.01 | 238.9/Utah border -0 | | | | 1R<br>I<br>C+ | | Ag Mun<br>Pwr<br>Rec<br>F+W | | | T, DO, TDG, pH, Turb, Phos; N, NH3, Bact, Met, Cond, OTox | 12 | 102 | + | 32 | 6 | | 2 | 60 | | 20 | 45 | 9 | 10 | 16 | | | |
| | BEAR R. Bear L. conf to Soda Sp | BB-20 | 350 | .87<br>1.7<br>.29 | 238.9-206.2 | 33 | 1 | 2 | I | A | Ag M+I<br>Pwr<br>Rec<br>F+W | | | T, DO, TDG, pH, Turb, Phos; N, NH3, Bact, Met, Cond, OTox | 9 | 23 | - | 39 | 5 | | 2 | 54 | 8 | 24 | 28 | 39 | | 1 | | | |
| | BEAR R. Soda Sp to Onei-da Dam | BB-30 | 450 | 1.1<br>2.0<br>.17 | 206.2-147.0 | 59 | | | 2R<br>I | | Ag<br>Pwr<br>Rec<br>F+W | | | T, DO, TDG, pH, Turb, Phos; N, NH3, Bact, Met, Cond, OTox | 8 | 38 | + | 25 | 12 | | 12 | 51 | 2 | 43 | 21 | 32 | 1 | 1 | | | |

BEAR **RIVER BASIN** NOVEMBER **YEAR - 1976**

| Sub-basin Information | | | | | | | Environmental Information | | | | | | | | | | | | % Land Ownership | | | | | % Land Use | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub-basin | River | Seg # | Drain Area $m^2$ | cfs Flow $x10^3$ | R M Range | Seg Length | Sig Disch M | Sig Disch I | Hydro-mod | Mining | Water Use | Bio Sta | Rec Sta | WATER QUALITY parameters (=acceptable =objectionable =not acceptable) | # Sta | # Smpl pr | Data Adequacy | USFS | BLM | Indian | State | Private | Urban | Agric | Range | Forest | Water | Wetland | Barren | Tundra | Snow & Ice |
| | BEAR R. Oneida Dam to Ut.bord | BB-40 | 610 | 1.2<br>2.0<br>.17 | 151.1-125.3 | 26 | | 1 | 2R<br>I<br>C | | Ag<br>M+I<br>Rec<br>F+W | | | T, DO, TDG, pH, Turb, Phos; N, NH3, Bact, Met, Cond, OTox | 19 | 67 | + | 38 | 1 | | 1 | 60 | | 40 | 33 | 24 | 3 | | | | |
| | | | | | | | | | | | | | | T, DO, TDG, pH, Turb, Phos; N, NH3, Bact, Met, Cond, OTox | | | | | | | | | | | | | | | | | |
| | MALAD R LITTLE MALAD R src. to Ut.bord | BB-471 | 520 | .09<br>.39<br>.03 | | 20 | | | 1R<br>I<br>C | | Ag<br>Rec<br>F+W | | | T, DO, TDG, pH, Turb, Phos; N, NH3, Bact, Met, Cond, OTox | 1 | 6 | - | 29 | 25 | | 4 | 42 | | 35 | 53 | 12 | | | | |
| | | | | | | | | | | | | | | T, DO, TDG, pH, Turb, Phos; N, NH3, Bact, Met, Cond, OTox | | | | | | | | | | | | | | | | | |
| | DEEP CR source to Utah border | BB-480 | 720 | .014<br>.1<br>.001 | | 40 | | | 1R<br>I<br>C | | Ag<br>Rec<br>F+W | | | T, DO, TDG, pH, Turb, Phos; N, NH3, Bact, Met, Cond, OTox | 0 | | - | 9 | 58 | | 5 | 28 | | 23 | 73 | 4 | | | | |
| | | | | | | | | | | | | | | T, DO, TDG, pH, Turb, Phos; N, NH3, Bact, Met, Cond, OTox | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | T, DO, TDG, pH, Turb, Phos; N, NH3, Bact, Met, Cond, OTox | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | T, DO, TDG, pH, Turb, Phos; N, NH3, Bact, Met, Cond, OTox | | | | | | | | | | | | | | | | | |

** U S ENVIRONMENTAL PROTECTION AGENCY **
** REGION X **
** SURVEILLANCE AND ANALYSIS DIVISION **

# PERMIT CONDITIONS



## TD-004120-1 CARIBOU TROUT RANCH, INC

LOCATION - SODA SPRINGS
STATE = ID
CNTY CODE= 029
DIST OFF =
FAC TYPE = I
SIC CODE = 098

MAJOR BASIN = BEAR LAKE
MINOR BASIN =
1ST LEVEL MILE= 175 00
2ND LEVEL MILE= 000 40
3RD LEVEL MILE=
PERMIT EXPIRES= 79/12/31

NOTES
GIVEN LIMS APPLY TO NON-CLEANING EFFLUENT CLEANING EFFLUENT
UNTIL 760630 SETT SOLIDS INST MAX=2 2ML/L-1 GRB WK FROM 760701
SUSP SOLS 15MG/L--MO GRABS AND SETT SOLS 0 2ML/LWKLY GRBS ALL
FLOWS MONTHLY 24 HR TOTAL "QUARTERLY" IS CODE FOR 2/QTR

THIS INDUSTRY IS LOCATED IN SEGMENT BB-20

## DISCHARGE PIPE= 001

RECIEVING WATER= BIG SPRINGS CREEK
LAT= 42-38-48 LONG= 111-36-24
TRT CODE= POP EQ=

| DATE RANGE | PARAMETER DESCRIPTION | MINIMUM | AVERAGE | MAXIMUM | EXC | TYPE | FREQ | DATA SOURCE |
|---|---|---|---|---|---|---|---|---|
| 75/06/02 TO 76/06/30 | SETTLEABLE SOLIDS ML/L | | | 0 20 | | GRAB | 1/3MTH | PERMIT COND |
| | SUSPENDED SOLIDS LBS/DAY | | 2600 | 3380 | | COMP | 1/3MTH | PERMIT COND |
| 76/07/01 TO 79/12/31 | SETTLEABLE SOLIDS ML/L | | 0 10 | | | COMP | 1/MTH | PERMIT COND |
| | SUSPENDED SOLIDS MG/L | | | 15 0 | | GRAB | 1/3MTH | PERMIT COND |
| | SUSPENDED SOLIDS LBS/DAY | | 2200 | 2860 | | COMP | 1/MTH | PERMIT COND |

# PERMIT CONDITIONS



## ID-002081-8 SODA SPRINGS STP

LOCATION = SODA SPRINGS
STATE = ID
CNTY CODE= 029
DIST OFF =
FAC TYPE = M
SIC CODE =

MAJOR BASIN = BEAR LAKE
MINOR BASIN =
1ST LEVEL MILE= 174 80
2ND LEVEL MILE=
3RD LEVEL MILE=
PERMIT EXPIRES= 79/03/31

THIS MUNICIPALITY IS LOCATED IN SEGMENT BB-20

NOTES
RESIDUAL CHLORINE TO BE MONITORED BY DAILY GRABS

## DISCHARGE PIPE= 001

RECIEVING WATER= BEAR RIVER
LAT= 42-38-00 LONG= 111-37-00
TKT CODE= AS POP EQ= 3500

| DATE RANGE | PARAMETER DESCRIPTION | MINIMUM | AVERAGE | MAXIMUM | EXC | TYPE | FREQ | DATA SOURCE |
|---|---|---|---|---|---|---|---|---|
| 75/05/30 TO 75/07/31 | PH | 6 00 | | 9 00 | | GRAB | DAILY | PERMIT COND |
| | BOD MG/L | | 85 0 | | | COMP | 1/WEEK | PERMIT COND |
| | FECAL COLIFORM PER 100ML | | 700 | | | GRAB | 1/WEEK | PERMIT COND |
| | SUSPENDED SOLIDS MG/L | | 72 0 | | | COMP | 1/WEEK | PERMIT COND |
| | FLOW MGD | | 1 000 | | | REC | CONT | PERMIT COND |
| | BOD LBS/DAY | | 673 | | | COMP | 1/WEEK | PERMIT COND |
| | SUSPENDED SOLIDS LBS/DAY | | 570 | | | COMP | 1/WEEK | PERMIT COND |
| 75/08/01 TO 79/03/31 | PH | 6 00 | | 9 00 | | GRAB | DAILY | PERMIT COND |
| | BOD MG/L | | 30 0 | | | COMP | 1/WEEK | PERMIT COND |
| | FECAL COLIFORM PER 100ML | | 200 | | | GRAB | 1/WEEK | PERMIT COND |
| | SUSPENDED SOLIDS MG/L | | 30 0 | | | COMP | 1/WEEK | PERMIT COND |
| | FLOW MGD | | 1 000 | | | REC | CONT | PERMIT COND |
| | BOD LBS/DAY | | 200 | | | COMP | 1/WEEK | PERMIT COND |
| | SUSPENDED SOLIDS LBS/DAY | | 200 | | | COMP | 1/WEEK | PERMIT COND |

# PERMIT CONDITIONS



ID-000119-8 MONSANTO COMPANY

LOCATION = SODA SPRINGS
STATE = ID
CNTY CODE= 029
DIST OFF =
FAC TYPE = I
SIC CODE = 2819

MAJOR BASIN = BEAR LAKE
MINOR BASIN =
1ST LEVEL MILE= 174 20
2ND LEVEL MILE= 003 10
3RD LEVEL MILE=
PERMIT EXPIRES= 77/06/30

THIS INDUSTRY IS LOCATED IN SEGMENT BB-20

NOTES
SANITARY WASTE OPTIONS GO INTO EFFECT 751001(SEE PERMIT)
FOR ALTERNATIVE PHOSPHOROUS DUMPING POSSIBILITIES, SEE PERMIT
SEC S2B INTAKE WELL WATER TO BE MONITORED FOR PHOSPHOROUS MG/L
WEEKLY COMPS

## DISCHARGE PIPE= 001

RECIEVING WATER= SODA CREEK
LAT= 42-40-28 LONG= 111-35-55
TRT CODE= POP EQ=

| DATE RANGE | PARAMETER DESCRIPTION | MINIMUM | AVERAGE | MAXIMUM | EXC | TYPE | FREQ | DATA SOURCE |
|---|---|---|---|---|---|---|---|---|
| 73/10/21 TO 75/09/30 | PH | 6 50 | | 9 00 | | GRAB | DAILY | PERMIT COND |
| | FLOW MGD | | 2 670 | 3 830 | | REC | CONT | PERMIT COND |
| | TEMPERATURE FAHRENHEIT DEG-F | | | 70 0 | | GRAB | DAILY | PERMIT COND |
| | FLOURIDE LBS/DAY | | 24 0 | 72 0 | | COMP | 1/MTH | PERMIT COND |
| | TOTAL PHOSPHOROUS P-LBS/DAY | | 176 0 | 277 0 | | COMP | DAILY | PERMIT COND |
| | SUSPENDED SOLIDS LBS/DAY | | 359 | 718 | | COMP | 1/MTH | PERMIT COND |
| 75/10/01 TO 77/06/30 | PH | 6 50 | | 9 00 | | GRAB | DAILY | PERMIT COND |
| | FLUORIDE MG/L | | | 2 00 | | COMP | 1/MTH | PERMIT COND |
| | FLOW MGD | | 2 670 | 3 830 | | REC | CONT | PERMIT COND |
| | TEMPERATURE FAHRENHEIT DEG-F | | | 70 0 | | GRAB | DAILY | PERMIT COND |
| | FLOURIDE LBS/DAY | | 20 0 | 40 0 | | COMP | 1/MTH | PERMIT COND |
| | TOTAL PHOSPHOROUS P-LBS/DAY | | | 245 0 | | COMP | DAILY | PERMIT COND |
| | SUSPENDED SOLIDS LBS/DAY | | 359 | 718 | | COMP | 1/MTH | PERMIT COND |

# PERMIT CONDITIONS



## ID-000118-0 DEL MONTE CORPORATION (PLANT #30)

LOCATION - FRANKLIN
STATE = ID
CNTY CODE= 041
DIST OFF -
FAC TYPE = I
SIC CODE = 2033

MAJOR BASIN = BEAR LAKE
MINOR BASIN = CUB RIVER
1ST LEVEL MILE= 077 70
2ND LEVEL MILE= 015 70
3RD LEVEL MILE=
PERMIT EXPIRES= 79/12/31

THIS INDUSTRY IS LOCATED IN SEGMENT BB-40

NOTES
GIVEN LIMS VALID EXEPT DURING SAUERKRAUT SEASON FOR ALL PROC-
ESSING, UNTIL 770101 FLOW--DAILY, AMMONIA AND FECAL COLIFORMS-
-MONTHLY GRABS, DISS OXY(MG/L)2 GRABS/WEEK AFTER 770701 FLOW
DAILY,D O NT LESS THAN 4MG/L 2 GRBS/WK SEE PERMIT FOR SAUKRT

## DISCHARGE PIPE= 001

RECIEVING WATER= CUB RIVER
LAT= 42-00-10 LONG= 111-49-00
TRT CODE= POP EQ=

| DATE RANGE | PARAMETER DESCRIPTION | MINIMUM | AVERAGE | MAXIMUM | EXC | TYPE | FREQ | DATA SOURCE |
|---|---|---|---|---|---|---|---|---|
| 75/03/06 TO 76/12/31 | PH | 6 00 | | 9 00 | | GRAB | 2/WEEK | PERMIT COND |
| | TEMPERATURE FAHRENHEIT DEG-F | | | 75 0 | | GRAB | 1/WEEK | PERMIT COND |
| | BOD LBS/DAY | | 200 | 600 | | COMP | 2/WEEK | PERMIT COND |
| | SUSPENDED SOLIDS LBS/DAY | | 600 | 1500 | | COMP | 2/WEEK | PERMIT COND |

| Stream | River Mile | Segment Number | Biological Status | | | | Recreational Status | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Acc. | Obj. | N.A | PHYS./CHEM. / BIOLOGICAL PROBLEMS | Acc | Obj. | N.A. | PROBLEMS/EFFECTS |
| BEAR R.-- Wyo. border to Bear Lk. confluence, including Thomas Fk. & Montpelier Ck. | 285.0-238.9 | BB-10 | X | | X | On Bear R., extensive siltation in spring. On Thomas Fk., siltation on lower end. Mont. Ck. has irrigation related problems. Some turbidity & nutrient problems. | X | | X | Lower reaches of Thomas Fk. & Mont. Ck. limited due to Bio Status. On Bear R., slow flow, low fish populations, & siltation. Access limited due to land ownership. |
| BEAR LAKE-- Outlets & tribs to Bear R. | 238.9/ Utah bor.-0 | BB-120 | X | | X | Extensive channel modification with poor fishery habitat & low populations. Turbidity, nutrients, pH, & conductivity. | X | X | | Rec. is governed by Bio Status for fisheries. Waterfowl utilization is very good. |
| BEAR R.-- Bear Lake confluence to Soda Springs | 238.9-206.2 | BB-20 | X | X | | Silt, low, & slow flow at certain times of year; irrigation/ ag. related problems. Nutrients & turbidity. More desirable fish species found in this reach, but populations are quite low. Lower end of Georgetown Ck. is affected by irrigation diversion. | X | X | | Rec. Status is governed by Bio. Status. |

Contacts:

Notes:

| Stream | River Mile | Segment Number | Biological Status | | | | Recreational Status | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Acc. | Obj. | N.A | PHYS./CHEM. / BIOLOGICAL PROBLEMS | Acc | Obj. | N.A. | PROBLEMS/EFFECTS |
| BEAR R.-- Soda Springs to Oneida Dam | 206.2-147.0 | BB-30 | X | X | | Alexander Res. affected by siltation & other influences from Bear R. Blw. Alex. Res. to Grace Dam is acc. due to settling effect of Alex. Res. From abv. Thatcher to Oneida Dam siltation is main problem. Other related problems in this segment are diversions, turbidity, & nutrients. | X | X | | Rec. varies due to Bio. Status. Those reaches that are obj. have low aesthetic appeal, & accessibility is limited due to land ownership |
| BEAR R.-- Oneida Dam to Utah border | 151.1-125.3 | BB-40 | X | X | X | Bear R. from Oneida Dam to N. of Preston is acc. due to settling effect of Oneida Res. From Hwy 91 to state line is N.A. due to turbidity problems. Battle Ck. is N.A. due to turbidity. Mink Ck. is obj. due to channel alterations. Other problems in segment are temp, nutrients, & diversions. | X | X | X | Fluctuating flow, turbidity, channel alterations, siltation, slow flow, and other phys./chem./biological factors (listed under Bio. Status) |
| LITTLE MALAD R. & MALAD R.-- Sources to Utah bor. | | BB-471 | X | | X | Temp., slow flow, extensive diversions, siltation, & low fish populations. | X | | X | Rec is governed by Bio. Status & low aesthetic appeal. |

Contacts:

Notes:

| Stream | River Mile | Segment Number | Biological Status | | | | Recreational Status | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Acc | Obj | N.A | PHYS./CHEM./ BIOLOGICAL PROBLEMS | Acc | Obj | N.A. | PROBLEMS/EFFECTS |
| DEEP CREEK-Source to Utah border | | BB-480 | X | | X | Silt, low flow, extensive diversions in the lower reaches. | X | | X | Upper reaches acc.; lower reaches N.A. basically for the same reasons as Bio. Status. |

Contacts: John Heimer, Idaho Fish & Game -- Pocatello, Idaho. Phone 232-4703

Notes: Information not from John Heimer came from water quality data.