

WASTEWATER LAND APPLICATION PERMIT

DEPARTMENT OF HEALTH AND WELFARE
DIVISION OF ENVIRONMENTAL QUALITY

1410 N. Hilton
Boise, Idaho 83706-1255
(208) 373-0502

Issued To:

City of Malad

Sources Covered by this Permit:

Type of Wastewater:

Municipal, secondary
treated, disinfected

Method of Treatment:

Land irrigation

Plant Type and Location:

City of Malad WWTP
59 Bannock
Malad, Idaho 83252

Area Information:

County:

Oneida

USGS Quad(s): Malad East & West

Nearest surface stream which may
receive runoff from wastewater
treatment area: Deep Creek
(intermittent water)

Beneficial Uses of Ground Water:
Drinking water, agricultural
irrigation

Issued in response to Permit Application No. LA-000159-01
received October 19, 1995.

Signed By:


WALLACE N. CORY, P.E., ADMINISTRATOR
DIVISION OF ENVIRONMENTAL QUALITY
IDAHO DEPARTMENT OF HEALTH AND WELFARE

5/31/96
DATE

PERMITTED ACTIVITIES

Until this permit expires or is modified or revoked, the permittee is authorized to construct, install, modify or operate a wastewater land application treatment system in conformance with requirements, limitations and conditions set forth in this permit.

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This permit does not relieve the City of Malad, hereinafter referred to as the permittee, from responsibility for compliance with other applicable federal, state or local laws, rules or standards.

SECTION I - SPECIFIC PERMIT CONDITIONS

SCHEDULE A

Wastewater Type and Application Limits, Suitable Uses, Buffer Zones

1. The permittee is allowed to land apply up to 13 million gallons per year of disinfected, secondary 23 reclaimed water as defined on page 4, for the purposes of irrigating 16.7 acres of farmland owned by the city of Malad during the growing season.
2. Other beneficial uses for reclaimed water are listed in Schedule A, pages 5 and 6. Other beneficial uses allowed under this permit are denoted by an "X" in the first column. The volume of reclaimed water used for non-irrigation related beneficial uses should not be included in the volume limit under Item 1.
3. If the total coliform of the reclaimed water exceeds the definition of disinfected, secondary 23 reclaimed water, irrigation and any other beneficial uses involving probable human contact must cease until subsequent analyses (minimum of two) show total coliform to be 23 organisms/100 ml or less.
4. Reclaimed water used for irrigation shall be applied at or below the hydraulic and agronomic needs of the vegetation. Irrigation is limited to the growing season (May 1 through October 31). Land application shall be managed to prevent any violation of water quality standards in the ground water or surface water. No irrigation is allowed during the non-growing season unless prior approval is obtained from the Idaho Department of Health and Welfare (hereinafter referred to as "Department").
5. Applicable buffer zones are indicated in Schedule A, page 8. A buffer zone of 300 feet shall be maintained between application sites and inhabited dwellings. A buffer zone of 50 feet shall be maintained between application sites and areas that are reasonably accessible to the public.
6. Minimum wellhead protection buffer zones of 1,000 feet for public supply wells and 500 feet for private domestic wells shall be provided. These buffer zones shall be provided for each of the following: land application sites, wastewater treatment lagoons, and storage lagoons.
7. Areas where reclaimed water is used shall be posted with appropriate signs - "Reclaimed Water - Do Not Drink" or equivalent.

RECLAIMED WATER TYPES (Definitions derived from IDAPA 16.01.17.07)

| | Type | Definition |
|---|-------------------------------------|--|
| | Undisinfected Secondary | means <u>reclaimed water</u> that is <u>oxidized</u> . |
| | Disinfected Secondary 230 | means <u>reclaimed water</u> that is at all time <u>oxidized</u> and <u>disinfected</u> so that at some location in the treatment process the median number of total coliform bacteria does not exceed 230 per 100 ml, as determined from the bacteriological results of the last seven days for which analyses have been completed. |
| * | Disinfected Secondary 23 | means <u>reclaimed water</u> that is at all time <u>oxidized</u> and <u>disinfected</u> so that at some location in the treatment process the median number of total coliform bacteria does not exceed 23 per 100 ml, as determined from the bacteriological results of the last seven days for which analyses have been completed. |
| | Disinfected Secondary 2.2 | means <u>reclaimed water</u> that is at all time <u>oxidized</u> and <u>disinfected</u> so that at some location in the treatment process the median number of total coliform bacteria does not exceed 2.2 per 100 ml, as determined from the bacteriological results of the last seven days for which analyses have been completed. |
| | Filtered, Disinfected Secondary 2.2 | means <u>reclaimed water</u> that is at all time <u>oxidized</u> , <u>filtered</u> and <u>disinfected</u> so that at some location in the treatment process the median number of total coliform bacteria does not exceed 2.2 per 100 ml, as determined from the bacteriological results of the last seven days for which analyses have been completed. |

DEFINITIONS

coagulated wastewater¹ - means oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated upstream from a filter, by the addition of suitable floc-forming chemicals or by an equally effective method.

disinfected wastewater¹ - means wastewater in which pathogenic organisms have been destroyed by chemical, physical, or biological means.

filtered effluent¹ - means an oxidized, coagulated, clarified wastewater which has been passed through natural undisturbed soils or filter media, such as sand or diatomaceous earth, so that the average operating turbidity does not exceed 2 NTU and does not exceed 5 NTU more than 5% of the time during any 24-hour period.

oxidized wastewater¹ - means wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

reclaimed water² - means water which, as a result of treatment of domestic wastewater, is suitable for a direct beneficial use or a controlled use that would not otherwise occur.

1. From the State of Idaho, Department of Health and Welfare, Program Guidance Memorandum No. 2 (Revision B) dated March 12, 1980.
2. From the State of California, Department of Health Services, proposed Water Reclamation Criteria regulations, Division 4, Title 22, Chapter 3, dated August 17, 1992.

TABLE 1

Beneficial Uses of Reclaimed Water

Uses marked "x" are allowed in this permit.

| Beneficial Use | Filtered, Disinfected Secondary 2.2 | Disinfected Secondary 2.2 | Disinfected Secondary 23 | Disinfected Secondary 230 | Undisinfected Secondary |
|---|-------------------------------------|---------------------------|--------------------------|---------------------------|-------------------------|
| Irrigation of: | | | | | |
| playgrounds, school yards, and golf courses in residential areas | 1 | 3 | 3 | 3 | 3 |
| restricted access golf courses, cemeteries and freeway landscapes | 1 | 1 | 1 | 3 | 3 |
| X non-edible vegetation in limited public exposure areas | 1 | 1 | 1 | 3 | 3 |
| food crops contacted by the reclaimed water that will be harvested for direct human consumption | 1 | 3 | 3 | 3 | 3 |
| food crops that are above ground and not contacted by the reclaimed water | 1 | 2 | 3 | 3 | 3 |
| X food crops which must undergo extensive processing which is determined to be sufficient to destroy pathogens (e.g. sugar beets) | 1 | 1 | 1 | 1 | 2 |
| X pasture for active grazing (requires a grazing management plan outlining BMP practices) | 1 | 1 | 1 | 3 | 3 |
| X fodder (e.g. alfalfa), fiber (e.g. cotton), and seed crops not for direct human consumption | 1 | 1 | 1 | 1 | 2 |
| orchards and vineyards bearing food crops that may be contacted by the reclaimed water or the ground | 1 | 3 | 3 | 3 | 3 |
| orchards and vineyards not bearing food crops during irrigation or food crops not contacted by reclaimed water or the ground | 1 | 1 | 1 | 1 | 2 |
| sod farms or ornamental plants for commercial sale | 1 | 1 | 1 | 3 | 3 |
| Christmas trees and other trees not bearing food crops, whether or not they are harvested by the general public | 1 | 1 | 1 | 3 | 3 |
| | | | | | |
| Other uses outside the WWTP: | | | | | |
| industrial process with exposure of workers | 1 | 3 | 3 | 3 | 3 |
| industrial process without exposure of workers | 1 | 1 | 1 | 1 | 3 |
| fire fighting by dumping from aircraft | 1 | 1 | 1 | 1 | 3 |
| fire fighting other than by dumping from aircraft | 1 | 3 | 3 | 3 | 3 |
| water jetting for consolidation of backfill material around pipelines for reclaimed water, sewage, storm drains, and gas and conduits for electricity | 1 | 1 | 1 | 1 | 3 |
| dampening soil for compaction at construction sites and landfills | 1 | 1 | 1 | 1 | 3 |
| dampening roads and other surfaces for dust control | 1 | 1 | 1 | 1 | 3 |
| washing aggregate and making concrete | 1 | 1 | 1 | 1 | 3 |
| use in road sweepers | 1 | 1 | 1 | 1 | 3 |
| flushing sanitary sewers | 1 | 1 | 1 | 1 | 3 |
| supply for decorative fountain | 1 | 3 | 3 | 3 | 3 |

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TABLE 1

Beneficial Uses of Reclaimed Water

Uses marked "x" are allowed in this permit.

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| | Beneficial Use | Filtered, Disinfected Secondary 2.2 | Disinfected Secondary 2.2 | Disinfected Secondary 23 | Disinfected Secondary 230 | Undisinfected Secondary |
|---|---|-------------------------------------|---------------------------|--------------------------|---------------------------|-------------------------|
| ↓ | Uses at the WWTP: | | | | | |
| X | spray irrigation of landscape not contacted by the public | 1 | 1 | | 1 | 3 |
| X | non-spray irrigation of landscape not contacted by the public | 1 | 1 | | 1 | 2 |
| X | washdown of tanks and equipment | 1 | 1 | | 1 | 3 |
| X | aeration tank foam control sprays | 1 | 1 | | 1 | 3 |
| X | scum sprays on secondary clarifier skimmers | 1 | 1 | | 1 | 3 |
| X | polymer dilution water | 1 | 1 | | 1 | 3 |
| X | seal water for gas compressors | 1 | 1 | | 1 | 3 |
| X | cooling water for gas compressors and other internal | 1 | 1 | | 1 | 3 |
| X | combustion engines | 1 | 1 | | 1 | 3 |
| X | dilution water for chlorination | 1 | 1 | | 1 | 3 |
| X | seal water and cooling water for sludge pumps | 1 | 1 | | 1 | 3 |
| X | heat exchangers for air, non-potable water, and oil cooling | 1 | 1 | | 1 | 3 |
| X | odor and gas absorption facilities | 1 | 1 | | 1 | 3 |
| X | centrifuge flushing | 1 | 1 | | 1 | 3 |
| X | flushing grit and sludge pipes | 1 | 1 | | 1 | 3 |
| | | | | | | |
| | | | | | | |

TABLE LEGEND:

- 1 Sprinkler or surface (non-spray) irrigation may be allowed.
- 2 Surface (non-spray) irrigation may be allowed in areas where public access is restricted.
- 3 Not allowed.

NOTES:

- Beneficial uses are consistent with IDAPA 16.01.17.07. Additional beneficial uses are taken from the State of California, Department of Health Services.
- An "X" in the first column indicates suitable beneficial uses allowed by this permit for the type of reclaimed water produced.
- Reclaimed water type for this permit is Disinfected Secondary 23 and is denoted by the shaded column.
- Beneficial uses of reclaimed water shown in the table for Disinfected Secondary 23 reclaimed water, but not allowed, must be reviewed and approved by the Department prior to use.
- Beneficial uses of reclaimed water not shown in this table must be reviewed and approved prior to use. Other uses will be considered on the basis of their public exposure level being less than or equal to that occurring for the suitable uses given in this table.

TABLE 2

Buffer Zones for Land Application of Reclaimed Wastewater

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| Applicable category for this permit is marked *** | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T |
|---|------|------|-----|-----|----|------|------|-----|-----|----|-----|-----|----|----|----|-----|-----|----|----|----|
| Degree of Treatment | | | * | | | | | | | | | | | | | | | | | |
| Undisinfected Secondary | X | | | | | X | | | | | X | | | | | X | | | | |
| Disinfected Secondary 230 | | X | | | | | X | | | | | X | | | | | X | | | |
| Disinfected Secondary 23 | | | X | | | | | X | | | | | X | | | | | X | | |
| Disinfected Secondary 2.2 | | | | X | | | | | X | | | | | X | | | | | X | |
| Filtered, Disinfected Secondary 2.2 | | | | | X | | | | | X | | | | | X | | | | | X |
| Location | | | | | | | | | | | | | | | | | | | | |
| Suburban/Residential | X | X | X | X | X | | | | | | X | X | X | X | X | | | | | |
| Rural/Industrial | | | | | | X | X | X | X | X | | | | | | X | X | X | X | X |
| Mode of Irrigation | | | | | | | | | | | | | | | | | | | | |
| Sprinkler/Spray | X | X | X | X | X | X | X | X | X | X | | | | | | | | | | |
| Surface Application | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X |
| Buffer Zone Required | | | | | | | | | | | | | | | | | | | | |
| Between Application Site and Inhabited Dwellings | 1000 | 1000 | 300 | 100 | 50 | 1000 | 1000 | 300 | 100 | 50 | 300 | 300 | 50 | 50 | 50 | 300 | 300 | 50 | 50 | 50 |
| Between Application Site and Public Access Areas | 1000 | 500 | 50 | 0 | 0 | 1000 | 300 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 50 | 50 | 0 | 0 | 0 |

* Indicates category/column applicable for this permit.

SCHEDULE B
Monitoring and Reporting Requirements

1. The permittee shall monitor the operation and efficiency of all treatment facilities related to the use of the reclaimed water. Samples shall be collected at times and locations that are representative of permitted activities. Data collected and submitted shall include the following:

| Item | Parameter ^{1,2} | Sampling Frequency | Monitor Point | Sample Type |
|-----------------|--|---|---------------------------------|-------------|
| Reclaimed Water | BOD ₅ , TSS, TDS | Once/month during irrigation season | After Cl ₂ treatment | Grab |
| | Total Coliform, chlorine residual | Three times per week during irrigation season | After Cl ₂ treatment | Grab |
| | TKN, NH ₃ -N, NO ₃ -N, Tot-P, COD (see note 3) | A minimum of three samples during irrigation season (1996 only or first year land application system is used) | After Cl ₂ treatment | Grab |
| | Irrigation Volume | Record daily, report in million gallons/month | | |
| | Application Rate, Acre-inches/year | | | |
| Ground Water | Static water level, COD, NO ₃ -N, TDS, Mn, Fe, Fecal Coliform | Monthly for 12 (twelve) consecutive months | See Schedule C | Grab |
| | CO ₃ +HCO ₃ , SO ₄ , Cl, K, Mg, Na | One time in 1996 | See Schedule C | Grab |

Table Legend

- Use analytical methods as specified in the April 1996 printing of the *Handbook for Land Application of Municipal and Industrial Wastewater*.
- Abbreviations are defined as follows:

| | | |
|-----------------------------------|---|--------------------------------|
| BOD ₅ | = | 5-day Biological Oxygen Demand |
| Ca | = | Calcium |
| Cl | = | Chloride |
| CO ₃ +HCO ₃ | = | Carbonate + Bicarbonate |
| COD | = | Chemical Oxygen Demand |
| Fe | = | Iron, Total Unfiltered |
| K | = | Potassium |
| Mg | = | Magnesium |
| Mn | = | Manganese, Total Unfiltered |
| Na | = | Sodium |
| NH ₃ -N | = | Ammonia as Nitrogen |
| NO ₃ -N | = | Nitrate as Nitrogen |
| TDS | = | Total Dissolved Solids |
| TKN | = | Total Kjeldahl Nitrogen |
| Tot-P | = | Total Phosphorus |
| TSS | = | Total Suspended Solids |

TABLE LEGEND (continued)

3. These parameters will require analysis in subsequent years if nitrogen, phosphorous or COD loading rates are near or above guideline application rates.
4. Routine ground water monitoring requirements will be determined after the initial round of testing is completed.
2. The permittee shall submit an annual report which includes the following:
 - all monitoring data required in Schedule B,
 - an agricultural/land use summary including type of vegetation raised, approximate yield, type and number of animals grazed, grazing practices, and other activities which affect soil conditions; and
 - the status of compliance conditions in Schedule C.

Annual reports shall be submitted no later than December 31 each year for the irrigation ending October 31.

SCHEDULE C

Compliance Conditions and Schedules

1. WASTEWATER SYSTEM ANALYSIS

PHASE I

Determine if there are ground water quality impacts associated with the wastewater treatment system and provide short-term solutions as necessary.

- A. Install three (3) ground water monitoring wells (one upgradient and two downgradient of the treatment system). The location and plans & specifications for these wells shall be reviewed and approved by the Department prior to installation. Monitoring wells shall be completed by August 31, 1996.
- B. Sample ground water quality for the parameters specified in Schedule A. Sampling wells will be designated by the Department which may include existing domestic and irrigation wells in addition to the monitoring wells specified in Item A.
- C. If ground water concentrations are above primary MCL's or bacteria is present, the Department will work with the City to provide alternative potable water supplies where necessary.
- D. By August 31, 1996, provide a water balance for the wastewater treatment system including an estimate of seepage losses.

PHASE II

After completion of Phase I, the Department will determine if further action is necessary to protect public health and the environment.

2. GRAZING MANAGEMENT PLAN

If livestock are to be grazed on the land application site, the permittee shall submit a grazing management plan to the Department for review and approval. The Handbook for Land Application of Municipal and Industrial Wastewater, (DEQ, April 1996) provides information for developing grazing management plans.

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3. CROPPING PLANS/IRRIGATION SCHEDULES

Prior to initial land application, the permittee shall submit cropping plans and irrigation schedules for the approved land application site. These plans must be prepared or reviewed by qualified personnel. A copy of the recommendation report or a summary of recommendations shall be submitted to the Department upon completion.

SECTION II - STANDARD PERMIT CONDITIONS
SCHEDULE D

Procedural and Reporting Conditions

1. The permittee shall comply with all conditions of the permit.
2. If the permittee intends to continue operation of the permitted facility after the existing permit expiration date, the permittee shall apply for a new permit in accordance with the Wastewater Land Application Permit Regulations.
3. The permittee shall furnish to the Director of the Idaho Department of Health and Welfare or the Director's designee¹ (hereinafter referred to as "Director") within a reasonable time, any information, including copies of records, which may be used to determine whether cause exists for modifying, revoking, re-issuing, or terminating the permit, or to determine compliance with the permit.
4. The permittee shall allow the Director, consistent with Title 39, Chapter 1, Idaho Code, to:
 - a. Enter the permitted facility,
 - b. Inspect any records that must be kept under the conditions of the permit.
 - c. Inspect any facility, equipment, practice, or operation permitted or required by the permit.
 - d. Sample or monitor for the purpose of assuring permit compliance, any substance or any parameter at the facility.
5. The permittee shall report to the Director under the circumstances and in the manner specified in this section:
 - a. In writing thirty (30) days before any planned physical alteration or addition to the permitted facility or activity if that alteration or addition would result in any significant change in information that was submitted during the permit application process.
 - b. In writing thirty (30) days before any anticipated change which would result in noncompliance with any permit condition or these regulations.

¹For purposes of this permit, the Director's designee is the Administrator of the Division of Environmental Quality.

- c. Orally within twenty-four (24) hours from the time the permittee became aware of any non-compliance which may endanger the public health or the environment at telephone numbers provided below:

DEQ Central Office- (208) 373-0502
Emergency Number - 1-800-632-8000
 - d. In writing as soon as possible but within five (5) days of the date the permittee knows or should know of any noncompliance unless extended by the Department. This report shall contain:
 - i. a description of the noncompliance and its cause;
 - ii. the period of noncompliance including to the extent possible, times and dates and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
 - iii. steps taken or planned to reduce or eliminate reoccurrence of the noncompliance.
 - e. In writing as soon as possible after the permittee becomes aware of relevant facts not submitted or incorrect information submitted, in a permit application or any report to the Director. Those facts or the correct information shall be included as a part of this report.
6. The permittee shall take all necessary actions to prevent or eliminate any adverse impact on the public health or the environment resulting from permit noncompliance. In such cases where adverse impacts occur or water quality standards are exceeded, the permittee shall take all necessary actions to correct the effects of the impacts or to remediate the contamination.

SCHEDULE E

Modification, Violation, and Revocation Conditions

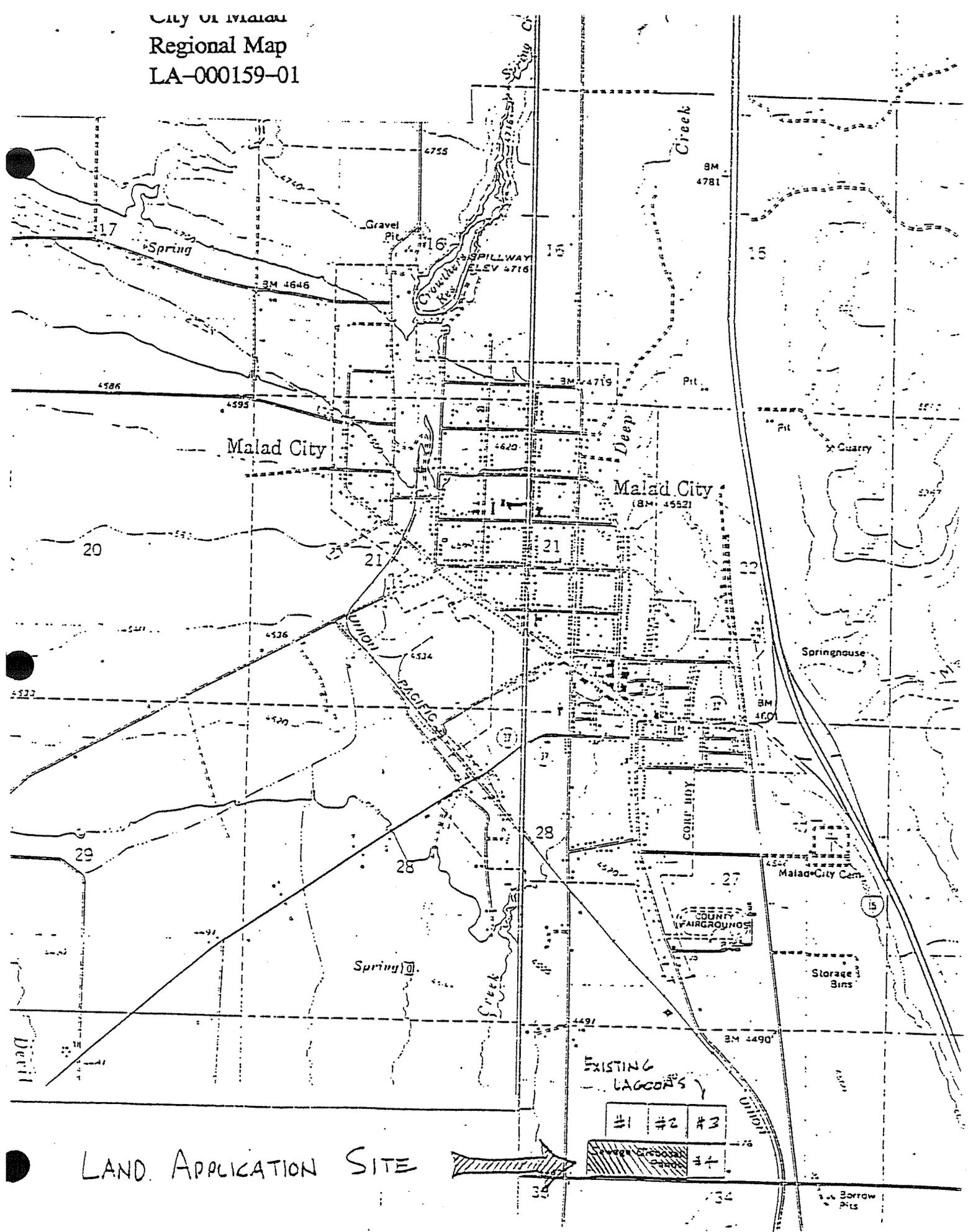
1. Both minor and major modifications may be made to this permit as stated in IDAPA 16.01.17700,01 and 02 with respect to any conditions stated in this permit upon review and approval of the Department.
2. Whenever a facility expansion, production increase or process modification is anticipated which will result in a change in the character of pollutants to be discharged or which will result in a new or increased discharge that will exceed the conditions of this permit, or if it is determined by the Department that the terms or conditions of the permit must be modified in order to adequately protect the public health or environment, a request for either major or minor modifications must be submitted together with the necessary reports, plans and specifications for the proposed changes. No facility expansion, production increase or process modification which may change the conditions of this permit shall be made until plans have been reviewed and approved by the Department and a new permit or permit modification has been issued.
3. Permits shall be transferable to a new owner or operator provided that the permittee notifies the Director by requesting a minor modification of the permit before the date of transfer.
4. Any person violating any provision of the Waste Water Land Application Permit Regulations, or any permit or order issued thereunder shall be liable for a civil penalty not to exceed ten thousand dollars (\$10,000) or one thousand dollars (\$1,000) for each day of a continuing violation, whichever is greater. In addition, pursuant to Title 39, Chapter 1, Idaho Code, any willful or negligent violation may constitute a misdemeanor.
5. The Director may revoke a permit if the permittee violates any permit condition or the Waste Water Land Application Permit Regulations.
6. Except in cases of emergency, the Director shall issue a written notice of intent to revoke to the permittee prior to final revocation. Revocation shall become final within twenty (20) days of receipt of the notice by the permittee, unless within that time the permittee request an administrative hearing in writing to the Director.
7. The Director shall notify the permittee in writing of any revocation hearing at least twenty (20) days prior to the date set for such hearing. The hearing shall be conducted in accordance with Title 67, Chapter 52, Idaho Code.

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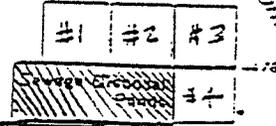
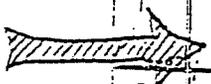
8. If the Director finds the public health, safety or welfare requires emergency action, the Director shall incorporate findings in support of such action in a written notice of emergency revocation issued to the permittee. Emergency revocation shall be effective upon receipt by the permittee. Thereafter, if requested by the permittee in writing the Director shall provide the permittee a revocation hearing and prior notice thereof. Such hearings shall be conducted in accordance with Title 67, Chapter 52, Idaho Code.

9. The provisions of this permit are severable and if a provision or its application is declared invalid or unenforceable for any reason, that declaration will not affect the validity or enforceability of the remaining provisions.

City of Malad
Regional Map
LA-000159-01

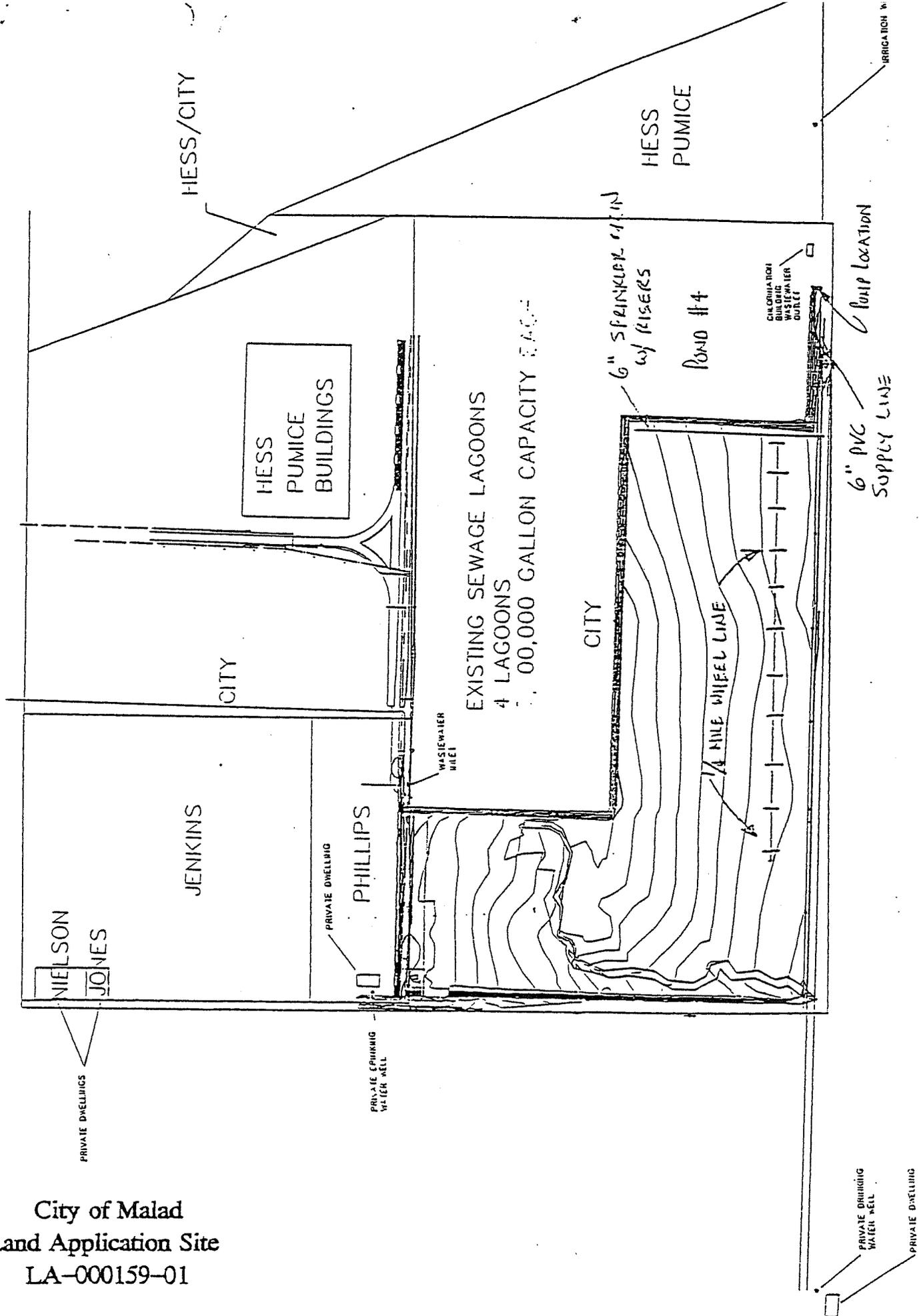


LAND APPLICATION SITE



Borrow Pits

City of Malad
Land Application Site
LA-000159-01



APPENDIX A

ENVIRONMENTAL MONITORING LOCATIONS

Wastewater Sampling Point(s)

| Serial # | Description |
|-----------|---|
| WW-015901 | Grab sample of disinfected effluent to land application |

Hydraulic Management Unit(s)

| Serial # | HMU Title | Acres |
|-----------|---|-------|
| MU-015901 | 1320 foot by 550 foot section on southwest side of lagoons, see attached maps | 16.7 |

Ground Water Monitoring Point(s)

| Serial # | Well Location |
|-----------|---|
| GW-0159xx | Approved ground water monitoring points |
| | |
| | |
| | |