Idaho Department of Environmental Quality
Reuse Permit
M-057-04

(Previous Permit No. LA-000057-03)

Mack's Inn Sewage Treatment Plant (hereafter "permittee") is hereby authorized to construct, install, and operate a reuse facility in accordance with (1) this permit; (2) IDAPA 58.01.17 "Recycled Water Rules"; (3) an approved plan of operation; and (4) all other applicable federal, state, and local laws, statutes, and rules. This permit is effective from the date below and expires on February 24, 2024.

Signature

February 24, 2014
Date

Erick Neher
Regional Administrator
Idaho Falls Regional Office
Idaho Department of Environmental Quality

Idaho Department of Environmental Quality
Idaho Falls Regional Office
900 North Skyline, Suite B, Idaho Falls, Idaho 83402
Phone (208)-528-2650

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1. Common Acronyms/Abbreviations and Definitions

DEQ	Idaho Department of Environmental Quality
DEQ Guidance	DEQ Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater, latest revision
Director	Director of the Idaho Department of Environmental Quality or designee unless otherwise specified
EPA	Environmental Protection Agency
E_i	irrigation efficiency
FM	flow measurement or monitoring description or identifier
GW	prefix for ground water reporting serial number
IDAPA	Idaho Administrative Procedures Act
IDWR	Idaho Department of Water Resources
IWR	irrigation water requirement - any combination of wastewater and supplemental irrigation water applied at rates commensurate to the moisture requirements of the crop, and calculated monthly during the growing season (GS). The equation used to calculate the IWR is: $IWR = P_{def}/E_i$
LG	prefix for lagoon reporting serial number
MG	million gallons
mg/kg	milligram per kilogram
mg/L	milligram per liter
MU	prefix for management unit reporting environmental serial number
NPDES	National Pollutant Discharge Elimination System
P_{def}	precipitation deficit - is synonymous with the net irrigation water requirement of the crop and for the purposes of this permit can be found at the following website http://data.kimberly.uidaho.edu/ETIdaho/
PO	plan of operation
QAPP	quality assurance project plan
Responsible Official	is the facility contact person authorized by the permittee to communicate with DEQ on behalf of the permittee on any matter related to the permit, including without limitation, the authority to communicate with and receive notices from DEQ regarding notices of violation or non-compliance, permit violations, permit enforcement, and permit revocation. The Responsible Official is also responsible for providing written certification of permit application materials, annual report submittals, and other information submitted to DEQ as required by the permit. Any notice to or communication with the Responsible Official is considered a notice to or

	communication with the permittee. The Responsible Official may designate an Authorized Representative to act as the facility contact person for any of the activities or duties related to the permit, except signing and certifying the permit application, which must be done by the Responsible Official. The Authorized Representative shall act as the Responsible Official and shall bind the permittee as described in this definition. Designation of the Authorized Representative shall follow the requirements specified in Section 6.1.3 of the permit
SU	prefix for soil monitoring unit reporting serial number
SW	prefix for supplemental irrigation water reporting serial number
WW	prefix for wastewater reporting serial number

2. Facility Information

Information Type	Information Specific to This Permit
Type of recycled water	Class C Municipal Wastewater; disinfection to 23 organisms per 100 mL.
Method of treatment and reuse	Aerated lagoon treatment with chlorine disinfection. Wastewater is slow rate land applied on up to 108 acres of native vegetation (with no harvest) during the growing season, and snowfluent is generated and applied in the non-growing season on up to 12 acres. Facility effluent volume is reduced with an evaporator in the warmest months. The last four years of operation ranged from 20.9 to 38.0 million gallons of wastewater applied to 70 acres. The 2013 facility upgrade increased reuse acreage by 50 acres (from 70 to 120 acres total).
System classification	Wastewater Collection Class III, Treatment Class I. Operators are required to have Class III collection, Class I treatment, and Land Application licensure.
Facility location	Approximately 1 mile northeast of Mack's Inn. Township 14N, Ranges 43E, Section 25, and 44E, Section 30. USGS *Big Springs, Idaho* quadrangle.
Facility mailing address	Fremont County Sewer, 151 N. 1st W., St. Anthony, ID 83445
Facility responsible official and authorized representative	Responsible Official: Chairman of the Fremont County Commission, 151 N. 1st W., St. Anthony, ID 83445 Phone (208) 624-4271; fax (208) 624-7335 Authorized Representative: Jon Brown, Facility Supervisor, Fremont County Sewer, P.O. Box 131, Mack's Inn ID. 83433 Phone (208) 558-7341; fax (208) 558-7641 Notify DEQ within 30 days if there is a change in personnel for any of the above facility contacts. A minor permit modification will be issued by DEQ to confirm the change
Ground water	Ground water depth varies from 10 to 52 feet below ground surface and flows to the south west. Beneficial uses include public and domestic water supply, agriculture, and fisheries. Nearby Public Water Supply wells have been constructed since the last permit cycle, and are located 1200 feet upgradient of both slow rate application areas. The 1200 feet buffer zone was included by the county as part of the construction approval.

Surface water	The Henry's Fork of the Snake River is approximately 0.4 miles from the nearest application area, snowfluent HMU 2. Beneficial uses for the river include: *Cold water*: water quality appropriate for the protection and maintenance of a viable aquatic life community for cold water species. *Salmonid spawning*: waters which provide or could provide a habitat for active self-propagating populations of salmonid fishes. *Primary contact recreation*: water quality appropriate for prolonged and intimate contact by humans or for recreational activities when the ingestion of small quantities of water is likely to occur. *Domestic*: water quality appropriate for drinking water supplies. *Special Resource Water*: segments or bodies of water which are recognized as needing intensive protection to preserve outstanding or unique characteristics or maintain current beneficial use.

3. Compliance Schedule for Required Activities

Compliance Activity (CA) Number and Completion Due Date	Compliance Activity Description
CA-057-01 Within one year of permit renewal	**Plan of Operation** (PO): The permittee shall submit for review and approval an updated PO that reflects current operations, including the facility expansion, and incorporates the requirements of this permit. The PO shall comply with the applicable requirements stated in IDAPA 58.01.17.300.05 and shall address applicable items in the Plan of Operation Checklist in the DEQ Guidance. The PO shall include the following site management plans or the permittee may submit the site management plans individually: 1. Runoff management plan. 2. Cropping Plan. The PO shall be updated as needed to reflect current operations. The permittee shall notify DEQ of material changes to the PO and copies shall be kept on site and made available to DEQ upon request.
CA-057-02 Within 1 year of permit renewal	**Quality Assurance Project Plan** (QAPP): The permittee shall prepare and implement a QAPP that incorporates all monitoring and reporting required by this permit. A copy of the QAPP along with written notice that the permittee has implemented the QAPP shall be provided to DEQ. The QAPP shall be designed to assist in planning for the collection, analysis, and reporting of all monitoring in support of this permit and in explaining data anomalies when they occur. At a minimum, the QAPP must include the following: 1. Details on the number of measurements, number of samples, type of sample containers, preservation of samples, holding times, analytical methods, analytical detection, and quantitation limits for each target compound, type and number of quality assurance field samples, precision and accuracy requirements, sample preparation requirements, sample shipping methods, and laboratory data delivery requirements. 2. Maps indicating the location of each monitoring, and sampling point. 3. Qualification and training of personnel. 4. Names, addresses, and telephone numbers of the laboratories used by or proposed to be used by the permittee. 5. Example formats and tables that will be used by the permittee to summarize and present all data in the annual report. The format and content of the QAPP should adhere to the recommendations and references in the Quality Assurance and Data Processing sections of the DEQ Guidance. The permittee shall amend the QAPP whenever there is a modification in sample collection, sample analysis, or other procedure addressed by the QAPP. The permittee shall notify DEQ of material changes to the QAPP and copies shall be kept on site and made available to DEQ upon request.

<table>
<tr><th>Compliance Activity (CA) Number and Completion Due Date</th><th>Compliance Activity Description</th></tr>
<tr><td>CA-057-03
As specified</td><td>Seepage Testing: The following table shows the date by which the permittee shall complete seepage testing on the specified lagoons:
<table><tr><td>Lagoon:</td><td>Seepage Test Due Date:</td></tr><tr><td>LG-05701/Cell A</td><td>August 2016</td></tr><tr><td>LG-05702/Cell B</td><td>August 2015</td></tr><tr><td>LG-05703/Cell C</td><td>August 2015</td></tr><tr><td>LG-05704/Cell D</td><td>September 2014</td></tr></table>Submit to DEQ for review and approval a proposed schedule and procedure for performing the required seepage tests at least 42 days prior to the planned seepage test. Seepage test procedures are available at: http://www.deq.idaho.gov/water-quality/wastewater/lagoon-seepage-testing.aspx The seepage test procedures shall be sealed by the Idaho licensed professional engineer or professional geologist in responsible charge for the test.

Seepage tests shall be completed in accordance with the procedures approved by DEQ. The seepage test report shall be sealed by the person in responsible charge and submitted within 90 days after completion of the seepage test.</td></tr>
<tr><td>CA-057-04
Within 8 months of permit renewal</td><td>Posted Signs shall read "Warning: Recycled Water—Do Not Enter," or equivalent signage both in English and Spanish. Signs to be posted every 500 feet and at each corner of the outer perimeter of the irrigated site. Signs are required where management unit border areas are accessible to the public.</td></tr>
<tr><td>CA-057-05
One year prior to permit expiration</td><td>Pre-Application Workshop: If the permittee intends to continue operating the reuse facility beyond the expiration date of this permit, the permittee shall contact DEQ and schedule a pre-application workshop to discuss the compliance status of the facility and the content required for the reuse permit application package.</td></tr>
<tr><td>CA-057-06
Six months prior to permit expiration</td><td>Renewal Permit Application: The permittee shall submit to DEQ a complete permit renewal application package, which fulfills the requirements specified at the pre-application workshop identified in CA-057-05.</td></tr>
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4. Permit Limits and Conditions

4.1 Hydraulic Management Unit Descriptions

Serial Number	Description	Irrigation System Type and Irrigation Efficiency	Maximum Acres[a] Allowed
MU-057-01	Original acreage	Fixed sprinkler system (Ei = 0.80)	58
MU-057-02	Snowfluent	Non growing season artificial snow making	12
MU-057-03	2013 expansion acreage	Pivot (Ei = 0.85)	50
Evaporator: see section 4.5 *Other Permit Limits and Conditions* for evaporator restrictions.			0[b]
		Total acreage	120

a. Maximum acres represent the total permitted acreage of the MU as provided by the permittee. If the permittee uses less acreage in any season or year, then loading rates shall be presented and compliance shall be determined based on the actual acreage utilized during each season or year.

b. The evaporator operates between lagoons. There is no acreage involved as non-evaporated wastewater sprays back into to the lagoons.

4.2 Hydraulic Loading Limits

Serial Number	Growing Season Hydraulic Loading	Nongrowing Season Maximum Hydraulic Loading, inches[a]
MU-057-01	18 inches/acre and 28.35 million gallons to 58 acres.	Not allowed
MU-057-02	Not allowed	36.8 inches/acre, equal to 16 million gallons gross, or 12 million gallons net (estimated 25% sublimation/evaporation)
MU-057-03	18 inches/acre and 24.44 million gallons to 50 acres.	Not allowed

a. Record daily, as necessary, abnormal conditions as a result of nongrowing season application including ponding, excessive ice buildup, or runoff from the permitted site.

4.3 Constituent Loading Limits

Serial Number	Constituent Loading
MU-057-01	No constituent loading limits
MU-057-02	No constituent loading limits
MU-057-03	No constituent loading limits

4.4 Management Unit Buffer Zones

Serial Number	Class C Buffer Distances (in feet) from Hydraulic Management Units					
	Public Water Supplies	Private Water Supplies	Inhabited Dwellings	Permanent and Intermittent Surface Water	Irrigation Ditches and Canals	Areas Accessible to the Public
MU-057-AB	1,000	500	300	100	50	50
MU-057-AB	1,000	500	300	100	50	50
MU-057-AB	1,000	500	300	100	50	50
MU-057-AB	1,000	500	300	100	50	50

4.5 Other Permit Limits and Conditions

Category	Permit Limits and Conditions
Growing season	April 1 through October 31 (214 days)
Nongrowing season	November 1 through March 31 (151 days)
Reporting year for annual loading rates	October 16 through October 15
Operator certification and endorsement	The wastewater treatment facility and reuse system shall be operated by personnel certified and licensed in the State of Idaho wastewater operator training program at the operator class level specified in IDAPA 58.01.16.203 and properly trained to operate and maintain the system. Macks Inn System Classification: Wastewater Collection Class III, Treatment Class I. Operators are required to have Class III collection, Class I treatment, and Land Application licensure.
Disinfection limits in recycled water	Class C: The median number of total coliform organisms does not exceed 23 total coliform organisms/100 mL, as determined from the bacteriological results of the last 5 days for which analyses have been completed. No sample shall exceed 230 total coliform organisms/100 mL in any confirmed sample.
Crop or vegetation allowed	Native forest and grasses
Grazing	Grazing is not allowed.

Category	Permit Limits and Conditions
Posting	Signs shall read "Warning: Recycled Water—Do Not Enter," or equivalent signage both in English and Spanish. Signs to be posted every 500 feet and at each corner of the outer perimeter of the irrigated site. Signs are required where management unit border areas are accessible to the public.
Fencing	MU-057-01, MU-057-02 and MU-057-03: three-wire knock down fencing.
Construction plans	Pursuant to Idaho Code §39-118, IDAPA 58.01.16, and IDAPA 58.01.17, detailed plans and specifications shall be submitted to DEQ for review and approval prior to construction, modification, or expansion of any wastewater treatment, storage, conveyance structures, or reuse facility. Inspection requirements shall be satisfied and within 30 days of completion of construction and the permittee shall submit as-built plans or a letter from an Idaho Professional Engineer certifying the facilities or structures were constructed in substantial accordance with the approved plans and specifications.
Backflow prevention and testing requirements	Backflow prevention is required to protect surface water and ground water from an unauthorized discharge of recycled water or wastewater. Refer to section 9.1.1 of this permit.
Records retention requirements	Keep records generated to meet the requirements of this permit for the duration of permit, including administrative extensions, plus 2 years.
Evaporator	Maximum Hydraulic Loading: none. Months of Operation: May thru October (184 days). Disinfection: Class C effluent. Wind speed limits: the evaporator system shall shut down automatically if the wind speed exceeds 5 mph in the direction of the road or buildings. The system shall also shut down automatically when wind speeds are in excess of 20 mph in any direction. Reporting: the total annual wastewater volume to the evaporator shall be reported and submitted with the annual report.

5. Monitoring Requirements

5.1 Recycled Water and Supplemental Irrigation Water Sampling and Analyses

5.1.1 Constituent Monitoring

Monitoring Point Serial Number and Location	Sample Description	Sample Type and Frequency	Constituents (units in mg/l unless otherwise specified)
WW-057-00 Influent trough in headworks area	Influent water to growing season and non-growing season applications	Grab/monthly (during periods of use)	- BOD_5
WW-057-01 or WW-057-03 Post chlorination lagoon effluent designated sample port located in the pump room.	Recycled water to growing season acreage and evaporator	Grab/monthly (during periods of use)	- Nitrate + nitrite-nitrogen, as N - Total Kjeldahl nitrogen, as N - Total Dissolved Solids - Phosphorus - BOD_5
		Grab/weekly (during periods of use)	- Total coliform
WW-057-02 Post chlorination lagoon effluent located designated sample point located in the control room basement.	Recycled water to non-growing season snowfluent acreage	Grab/monthly (during periods of use)	- Nitrate + nitrite-nitrogen, as N - Total Kjeldahl nitrogen, as N - Total Dissolved Solids - Phosphorus - BOD_5
		Grab/weekly (during periods of use)	- Total coliform

5.1.2 Management Unit and Other Flow Monitoring

Management Unit or Flow Measurement Serial Number and Location	Sample Description	Sample Type and Frequency	Measured Parameters, each MU
MU-057-01, MU-057-03 and evaporator effluent flow	Growing season recycled water flow	- Weekly meter reading - Monthly compilation of data	- Volume (MG/month) - Application depth (inches/month)

Management Unit or Flow Measurement Serial Number and Location	Sample Description	Sample Type and Frequency	Measured Parameters, each MU
MU-057-02 Snowfluent flow	Non-growing season recycled water flow	- Weekly meter reading - Monthly compilation of data	- Volume (MG/month) - Application depth (inches/month)
FM-057-01 Influent meter	Wastewater influent volume	- Monthly meter reading - Monthly compilation of data	- Volume (MG/month) - Volume (MG/year)

5.2 Ground Water Monitoring

5.2.1 Ground Water Monitoring Point Descriptions

Monitoring Point Serial Number	Common Designation	Well Type	Gradient Location
GW-057-01	MW 1	Monitoring well	Upgradient
GW-057-02	MW 2	Monitoring well	Upgradient
GW-057-03	MW 3	Monitoring well	Upgradient
GW-057-04	MW 4	Monitoring well	Midgradient
GW-057-05	MW 5	Monitoring well	Downgradient
GW-057-06	MW 6	Monitoring well	Downgradient
GW-057-07	MW 7	Monitoring well	Upgradient
GW-057-08	MW 8	Monitoring well	Downgradient
GW-057-09	MW 9	Monitoring well	Downgradient

5.2.2 Ground Water Monitoring, Sampling, and Analyses

Monitoring Point Serial Number	Sampling Point Description	Sample Type and Frequency	Constituents (units in mg/L unless otherwise specified)
GW-057-01 through GW-057-09	Monitoring wells	Annually in June or as soon as snowmelt allows; unfiltered grab sample	- Water table elevation (feet) - Water table depth (feet) - Chloride - Nitrate-nitrogen, as N - Phosphorus - Total coliform

5.3 Soil Monitoring

5.3.1 Soil Monitoring Unit Descriptions

Monitoring Point Serial Number	Description	Associated Hydraulic Management Unit
SU-057-01	58 acre original site	MU-057-01
SU-057-02	Snowfluent site	MU-057-02
SU-057-03	50 acre expansion site	MU-057-03

5.3.2 Soil Monitoring, Sampling, and Analyses

Monitoring Point Serial Number	Sample Type	Sample Frequency	Constituents (units in mg/L unless otherwise specified)
SU-057-01 SU-057-02 SU-057-03	Composite samples[a]	Annually in June or as soon as snowmelt allows	- Chloride - Cation exchange capacity (CEC) - Nitrate plus Nitrite as nitrogen - Plant available phosphorus

a. The number of sample locations specified in the PO or QAPP for each SU shall be sampled. At each location, samples shall be obtained from three depths: 0–12 inches; 12–24 inches; and 24–36 inches or refusal. The samples obtained from each depth shall be composited by depth to yield three composite samples for each soil monitoring unit; one composite sample for each depth.

5.4 Crop Monitoring

No crop monitoring is required.

5.5 Lagoon Information

Serial number	Description	Surface Area, acres	Maximum Operating Volume, MG	Liner Type
LG-057-01	Cell A, aerated	0.9	3.0	Synthetic
LG-057-02	Cell B, aerated	0.9	3.0	Synthetic
LG-057-03	Cell C, facultative & storage	2.0	7.5	Synthetic
LG-057-04	Cell D, facultative & storage	1.3	3.9	Synthetic

6. Reporting Requirements

6.1 Annual Report Requirements

The permittee shall submit to DEQ an Annual Report prepared by a competent environmental professional covering the previous reporting year.

6.1.1 Due Date

The Annual Report is due no later than January 31 of each year, which shall cover the previous reporting year.

6.1.2 Required Contents

The Annual Report shall include the following:

1. A brief interpretive discussion of all required monitoring data. The discussion shall address data quality objectives, validation, and verification; permit compliance; and reuse facility environmental impacts. The reporting year for this permit is specified in section 4.5.
2. Results of the required monitoring as described in section 5 of this permit. If the permittee monitors any parameter for compliance purposes more frequently than required by this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Annual Report. The report shall present all monitoring data in organized data summary tables to expedite review.
3. Status of all work described in section 0 of this permit.
4. Results of all backflow testing, repairs, and replacements required by Section 9.1.1 of this permit.
5. Discussion of major maintenance activities such as major equipment replacement, lagoon liner maintenance, and wastewater treatment and reuse facility maintenance.
6. A summary of all noncompliance events that occurred during the reporting year. Examples of noncompliance events that must be discussed include, but are not limited to: complaints, missed monitoring events, incorrect monitoring dates or frequencies, dry monitoring wells, uncontained spills causing runoff, construction without DEQ engineering plan approval, construction without engineering inspection, and reporting incorrect acreage.
7. Submittal of the calculations and observations for hydraulic management units specified in the table below.
8. All laboratory analytical reports, chain of custody forms, and crop yield documentation.
9. The parameters in the following table:

Monitoring Point Serial Number	Parameter (Calculate for each MU)	Units
MU-057-01 MU-057-02 MU-057-03	Recycled water loading rate	Million gallons/month Inches/month
	Recycled water nitrogen and phosphorus loading rates	Pounds/acre-year
Evaporator	Wastewater volume to the evaporator	Million gallons/year

6.1.3 Submittals

All applications, annual reports, or information submitted to DEQ as required by this permit shall be signed and certified as follows:

1. Permit applications shall be signed by the Responsible Official as follows:
   a. For a corporation: by a responsible corporate officer;
   b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;
   c. For a municipality, state, federal, Indian tribe, or other public agency: by either the principal executive officer or ranking elected official.
2. Annual reports and other information requested by DEQ shall be signed by the responsible official or by a duly authorized representative of that person. A person is a duly authorized representative only if:
   a. The authorization is made in writing by the responsible official;
   b. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual having overall responsibility for environmental matters for the company; and
   c. The written authorization is submitted to DEQ.

Submit the annual report to the following DEQ regional office at this address:

Engineering Manager
Idaho Department of Environmental Quality
Idaho Falls Regional Office
900 N. Skyline, Suite B, Idaho Falls, ID 83402

The annual report shall include the following certification statement and be signed, dated, and certified by the permittee's Responsible Official or Authorized Representative:

> *"I certify that the information provided in this submittal was prepared in conformance with the Quality Assurance Project Plan required by permit M-057-04 and is to the best of my knowledge, true, accurate and complete and I acknowledge that knowing submission of false or incomplete information may result in permit revocation as provided for in IDAPA 58.01.17.920.01 or other enforcement action as provided for under Idaho law."*

6.2 Emergency and Noncompliance Reporting

Report noncompliance incidents to DEQ's regional office at (208) 528-2650 or 1-800-632-8000.

In case of emergencies, call the emergency 24-hour number at 1-800-632-8000 and DEQ's regional office.

See Section 8, "Standard Permit Conditions," and IDAPA 58.01.17.500.06 for reporting requirements for facilities.

All instances of unpermitted discharges of wastewater to Surface Waters of the United States shall also be reported to the Environmental Protection Agency by telephone within 24 hours from the time the permittee becomes aware of the discharge and in writing within five days at this address:

NPDES/Stormwater Coordinator, USEPA Idaho Operations Office
950 W. Bannock, Suite 900
Boise, ID 83702
(208) 378-5746 / (208) 378-5744 and EPA Hot Line (206) 553-1846

7. Reserved

8. Standard Permit Conditions

The following standard permit conditions are included as terms of this permit as required by the "Recycled Water Rules," (IDAPA 58.01.17.500).

500. STANDARD PERMIT CONDITIONS.
The following conditions shall apply to and be included in all permits. (4-1-88)

01. Compliance Required. The permittee shall comply with all conditions of the permit. (4-1-88)

02. Renewal Responsibilities. If the permittee intends to continue operation of the permitted facility after the expiration of an existing permit, the permittee shall apply for a new permit in accordance with these rules. (4-1-88)

03. Operation of Facilities. The permittee shall at all times properly maintain and operate all structures, systems, and equipment for treatment, control and monitoring, which are installed or used by the permittee to achieve compliance with the permit or these rules. (4-1-88)

04. Provide Information. The permittee shall furnish to the Director within a reasonable time, any information including copies of records, which may be requested by the Director to determine whether cause exists for modifying, revoking, re-issuing, or terminating the permit, or to determine compliance with the permit or these rules. (4-1-88)

05. Entry and Access. The permittee shall allow the Director, consistent with Title 39, Chapter 1, Idaho Code, to: (4-1-88)

a. Enter the permitted facility. (4-1-88)

b. Inspect any records that must be kept under the conditions of the permit. (4-1-88)

c. Inspect any facility, equipment, practice, or operation permitted or required by the permit. (4-1-88)

d. Sample or monitor for the purpose of assuring permit compliance, any substance or any parameter at the facility. (4-1-88)

06. Reporting. The permittee shall report to the Director under the circumstances and in the manner specified in this section: (4-1-88)

a. In writing at least 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. When the alteration or addition results in a need for a major modification, such alteration or addition shall not be made prior to Department approval issued in accordance with these rules. (4-7-11)

b. In writing thirty (30) days before any anticipated change which would result in noncompliance with any permit condition or these rules. (4-1-88)

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

permit by the Director. (4-1-88)

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: (4-1-88)

i. A description of the noncompliance and its cause; (4-1-88)

ii. The period of noncompliance including to the extent possible, times and dates and, if the noncompliance has not been corrected, the anticipated length of time it is expected to continue; and (4-7-11)

iii. Steps taken or planned, including timelines, to reduce or eliminate the continuance or reoccurrence of the noncompliance. (4-7-11)

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. (4-1-88)

07. Minimize Impacts. The permittee shall take all necessary actions to eliminate and correct any adverse impact on the public health or the environment resulting from permit noncompliance. (4-1-88)

08. Compliance with "Ground Water Quality Rule." Permits issued pursuant to these rules shall require compliance with IDAPA 58.01.11, "Ground Water Quality Rule." (4-7-11)

9. General Permit Conditions

The following general permit conditions are based on the cited rules at the time of issuance and are enforceable as part of this permit. Note that the rules cited in this section, and elsewhere in this permit, are supplemented by the rules themselves. Rules applicable to your facility are enforceable whether or not they appear in this permit.

9.1 Operations

9.1.1 Backflow Prevention

Reuse facilities with existing or planned cross-connections or interconnections between the recycled water system and any water supply (potable or nonpotable) or surface water, shall have backflow prevention assemblies, devices, or methods as required by applicable rule or as specified in this permit and approved by DEQ.

For public water systems, backflow assemblies shall meet the requirements of IDAPA 58.01.08.543. Assemblies shall be adequately maintained and shall be tested annually by a certified backflow assembly tester, and repaired or replaced as necessary to maintain operational status.

For domestic water supply wells, backflow prevention devices shall meet the requirements of IDAPA 07.02.04 and shall be adequately operated and maintained.

Irrigation water supply wells shall meet the requirements of IDAPA 37.03.09.36 for preventing any waste or contamination of the ground water resource. Backflow prevention assemblies or devices used to protect the ground water shall be adequately operated and maintained.

Discharge of recycled water to surface water is regulated by the EPA NPDES program. An NPDES permit is required for any discharge to surface water and backflow prevention shall be implemented to prevent any unauthorized discharge. Backflow prevention assemblies or devices used to protect surface water shall be adequately operated and maintained.

Records of all testable backflow assembly test results, repairs, and replacements shall be kept at the reuse facility along with other operational records, and shall be discussed in the Annual Report and made available for inspection by DEQ. Other approved means of backflow prevention, such as siphons and air-gap structures that cannot be tested, shall be maintained in operable order.

9.1.2 Restricted to Premises

Wastewaters or recharge waters applied to the land surface must be restricted to the premises of the application site. Wastewater discharges to surface water that require a permit under the Clean Water Act must be authorized by the United States Environmental Protection Agency (IDAPA 58.01.16.600.02).

9.1.3 Health Hazards, Nuisances, and Odors Prohibited

Health hazards, nuisances, and odors are prohibited as follows:

- Wastewater must not create a public health hazard or nuisance condition (IDAPA 58.01.16.600.03).
- No person shall allow, suffer, cause or permit the emission of odorous gases, liquids, or solids into the atmosphere in such quantities as to cause air pollution (IDAPA 58.01.01.776.01).
- Air Pollution. The presence in the outdoor atmosphere of any air pollutant or combination thereof in such quantity of such nature and duration and under such conditions as would be injurious to human health or welfare, to animal or plant life, or to property, or to interfere unreasonably with the enjoyment of life or property (IDAPA 58.01.01.006.06).

9.1.4 Solids Management

Biosolids are the nutrient-rich organic materials resulting from the treatment of sewage sludge. When treated and processed, sewage sludge becomes biosolids which can be safely recycled and applied as fertilizer to sustainably improve and maintain productive soils and stimulate plant growth.

Biosolids generated from sewage sludge are regulated by EPA under 40 CFR Part 503 and require a DEQ approved sludge disposal plan as outlined in IDAPA 58.01.16.650. Contact DEQ prior to application of biosolids at any permitted reuse facility.

Sludge is the semi-liquid mass produced and removed by wastewater treatment processes. This does not include grit, garbage, and large solids.

Sludge is generated by wastewater treatment processes at municipal and industrial facilities.

Solid Waste is any garbage or refuse, sludge from a waste water treatment plant, water supply treatment plant, or air pollution control facility and other discarded material including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved material in irrigation return flows or industrial discharges which are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended.

Solid waste does not include inert wastes, manures and crop residues ultimately returned to the soils at agronomic rates, and any agricultural solid waste which is managed and regulated pursuant to rules adopted by the Idaho Department of Agriculture. DEQ reserves the right to use existing authorities to regulate agricultural waste that impacts human health or the environment.

Solid waste is regulated under IDAPA 58.01.06, "Solid Waste Management Rules. Wastes otherwise regulated by DEQ (i.e. this permit) are not regulated under 58.01.06.

Waste Solids include sludge and wastes otherwise regulated by DEQ in accordance with IDAPA 58.01.06.001.03.a.xii. Waste solids may include vegetative waste, silt and mud containing organic matter, and other non-inert solid wastes.

Inert wastes are defined as non-combustible, nonhazardous, and non-putrescible solid wastes that are likely to retain their physical and chemical structure and have a deminimis potential to generate leachate under expected conditions of disposal, which includes resistance to biological attack.

Waste solids require a DEQ approved sludge disposal plan as outlined in IDAPA 58.01.16.650.

9.1.5 Temporary Cessation of Operations and Closure (IDAPA 58.01.17.801)

Temporary cessation of operations and closure must be addressed as follows:

01. Temporary Cessation. A permittee shall implement any applicable conditions specified in the permit for temporary cessation of operations. When the permit does not specify applicable temporary cessation conditions, the permittee shall notify the Director prior to a temporary cessation of operations at the facility greater than sixty (60) days in duration and any cessation not for regular maintenance or repair. Cessation of operations necessary for regular maintenance or repair of a duration of sixty (60) days or less are not required to notify the Department under this section. All notifications required under this section shall include a proposed temporary cessation plan that will ensure the cessation of operations will not pose a threat to human health or the environment. (4-7-11)

02. Closure. A closure plan shall be required when a facility is closed voluntarily and when a permit is revoked or expires. A permittee shall implement any applicable conditions specified in the permit for closure of the facility. Unless otherwise directed by the terms of the permit or by the Director, the permittee shall submit a closure plan to the Director for approval at least ninety (90) days prior to ceasing operations. The closure plan shall ensure that the closed facility will not pose a threat to human health and the environment. Closure plan approval may be conditioned upon a permittee's agreement to complete such site investigations, monitoring, and any necessary remediation activities that may be required. (4-7-11)

9.1.6 Plan of Operation (IDAPA 58.01.17.300.05)

The PO must comply with the following:

05. Reuse Facility Operation and Maintenance Manual or Plan of Operations. A facility's operation and maintenance manual must contain all system components relating to the reuse facility in order to comply with IDAPA 58.01.16 "Wastewater Rules," Section 425. Manuals and manual amendments are subject to the review and approval provision therein. In addition to the content required by IDAPA 58.01.16.425, manuals for reuse facilities shall include, if applicable: operation and management responsibility, permits and standards, general plant description, operation and control of unit operations, land application site maps, wastewater characterization, cropping plan, hydraulic loading rate, constituent loading rates, compliance activities, seepage rate testing, site management plans, monitoring, site operations and maintenance, solids handling and processing, laboratory testing, general maintenance, records and reports, store room and inventory, personnel, an emergency operating plan, and any other information required by the Department. (4-7-11)

9.1.7 Seepage Testing Requirements (IDAPA 58.01.16.493.02.c)

Subsequent Tests. All lagoons covered under these rules must be seepage tested by an Idaho licensed professional engineer, an Idaho licensed professional geologist, or by individuals under their supervision every ten (10) years after the initial testing. (5-8-09)

9.1.8 Ground Water Quality Rule (IDAPA 58.01.11)

The permittee shall comply with the requirements of "Ground Water Quality Rule" (IDAPA 58.01.11).

9.2 Administrative

Requirements for administration of the permit are defined as follows.

9.2.1 Permit Modification (IDAPA 58.01.17.700)

01. Modification of Permits. A permit modification may be initiated by the receipt of a request for modification from the permittee, or may be initiated by the Department if one (1) or more of the following causes for modification exist: (4-7-11)

a. Alterations. There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit. (4-7-11)

b. New standards or regulations. The standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued. (4-7-11)

c. Compliance schedules. The Department determines good cause exists for modification of a compliance schedule or terms and conditions of a permit. (4-7-11)

d. Non-limited pollutants. When the level of discharge of any pollutant which is not limited in the permit exceeds the level which may cause an adverse impact to surface or ground waters. (4-7-11)

e. To correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions. (4-7-11)

f. When a treatment technology proposed, installed, and properly operated and maintained by the permittee fails to achieve the requirements of the permit. (4-7-11)

9.2.2 Permit Transferable (IDAPA 58.01.17.800)

01. General. A permit may be transferred only upon approval of the Department. No transfer is required for a corporate name change as long as the secretary of state can verify that a change in name alone has occurred. An attempted transfer is not effective for any purpose until approved in writing by the Department. (4-7-11)

9.2.3 Permit Revocation (IDAPA 58.01.17.920)

01. Conditions for Revocation. The Director may revoke a permit if the permittee violates any permit condition or these rules, or the Director becomes aware of any omission or misrepresentation of condition or information relied upon when issuing the permit. (4-7-11)

02. Notice of Revocation. 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 thirty-five (35) days of receipt of the notice by the permittee, unless within that time the permittee requests an administrative hearing in writing. The hearing shall be conducted in accordance with IDAPA 58.01.23, Rules of Administrative Procedure before the Board of Environmental Quality." (5-3-03)

03. Emergency Action. 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 IDAPA 58.01.23, Rules of Administrative Procedure Before the Board of Environmental Quality." (3-15-02)

04. Revocation and Closure. A permittee shall perform the closure requirements in a permit, the closure requirements of these rules, and complete all closure plan activities notwithstanding the revocation of the permit. (4-7-11)

9.2.4 Violations (IDAPA 58.01.17.930)

Any person violating any provision of these rules 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. (4-1-88)

9.2.5 Severability

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.

10. Other Applicable Laws

DEQ may refer enforcement of the following provisions to the state agency authorized to enforce that rule. The permittee shall comply with all applicable provisions identified in this section, as well as all other applicable federal, state, and local laws, statutes, and rules.

10.1 Owner Responsibilities for Well Use and Maintenance

10.1.1 Well Use

The well owner must not operate any well in a manner that causes waste or contamination of the ground water resource. Failure to operate, maintain, knowingly allow the construction of any well in a manner that violates these rules, or failure to repair or properly decommission (abandon) any well as herein required will subject the well owner to civil penalties as provided by statute. See IDAPA 37.03.09.036.01 and consult the Idaho Department of Water Resources (IDWR) for more information.

10.1.2 Well Maintenance

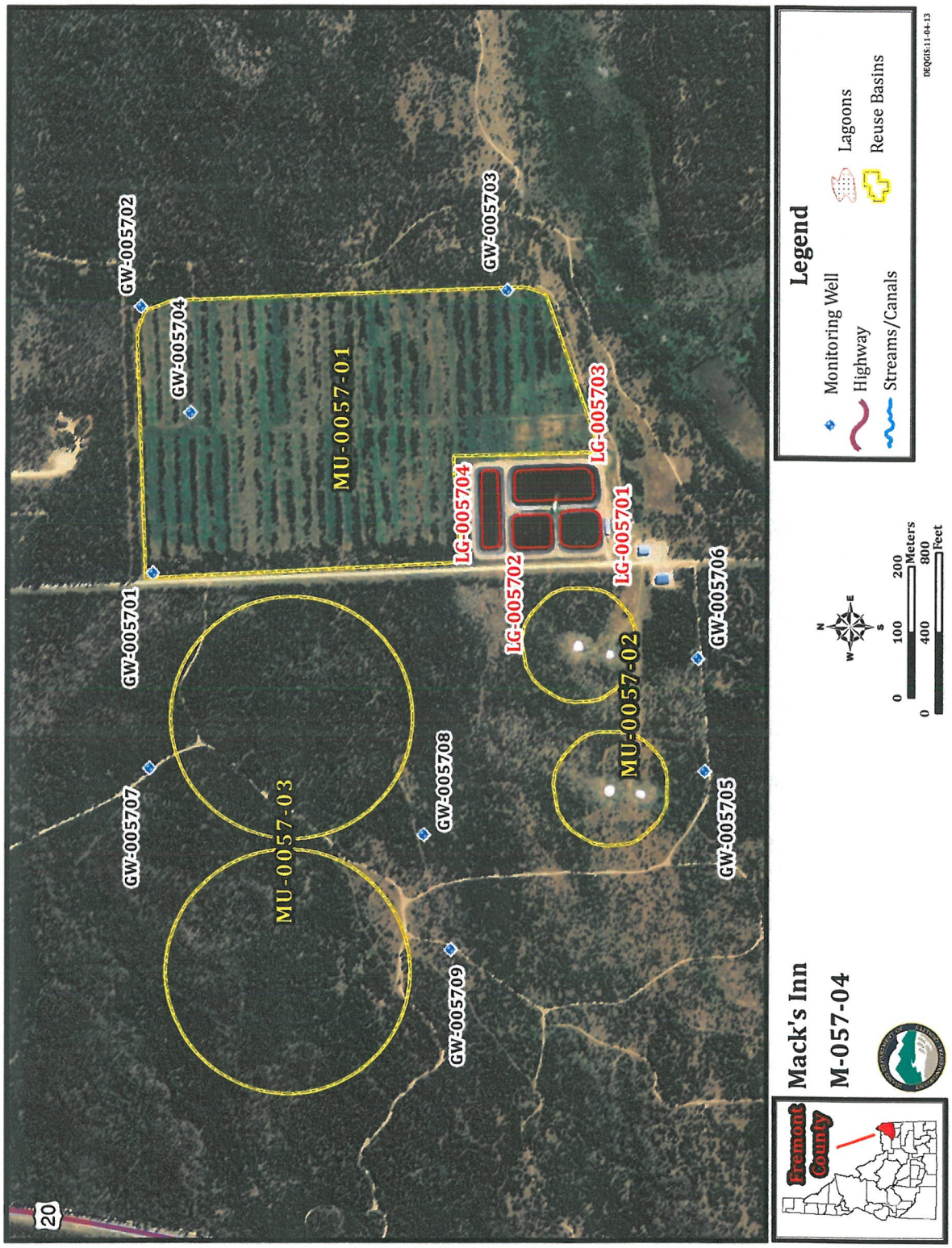
The well owner must maintain the well to prevent waste or contamination of ground waters through leaky casings, pipes, fittings, valves, pumps, seals, or through leakage around the outside of the casings, whether the leakage is above or below the land surface. Any person owning or controlling a noncompliant well must have the well repaired by a licensed well driller under a permit issued by the IDWR director in accordance with the applicable rules. See IDAPA 37.03.09.036.02 and consult IDWR for more information.

10.1.3 Wells Posing a Threat to Human Health and Safety or Causing Contamination of the Ground Water Resource

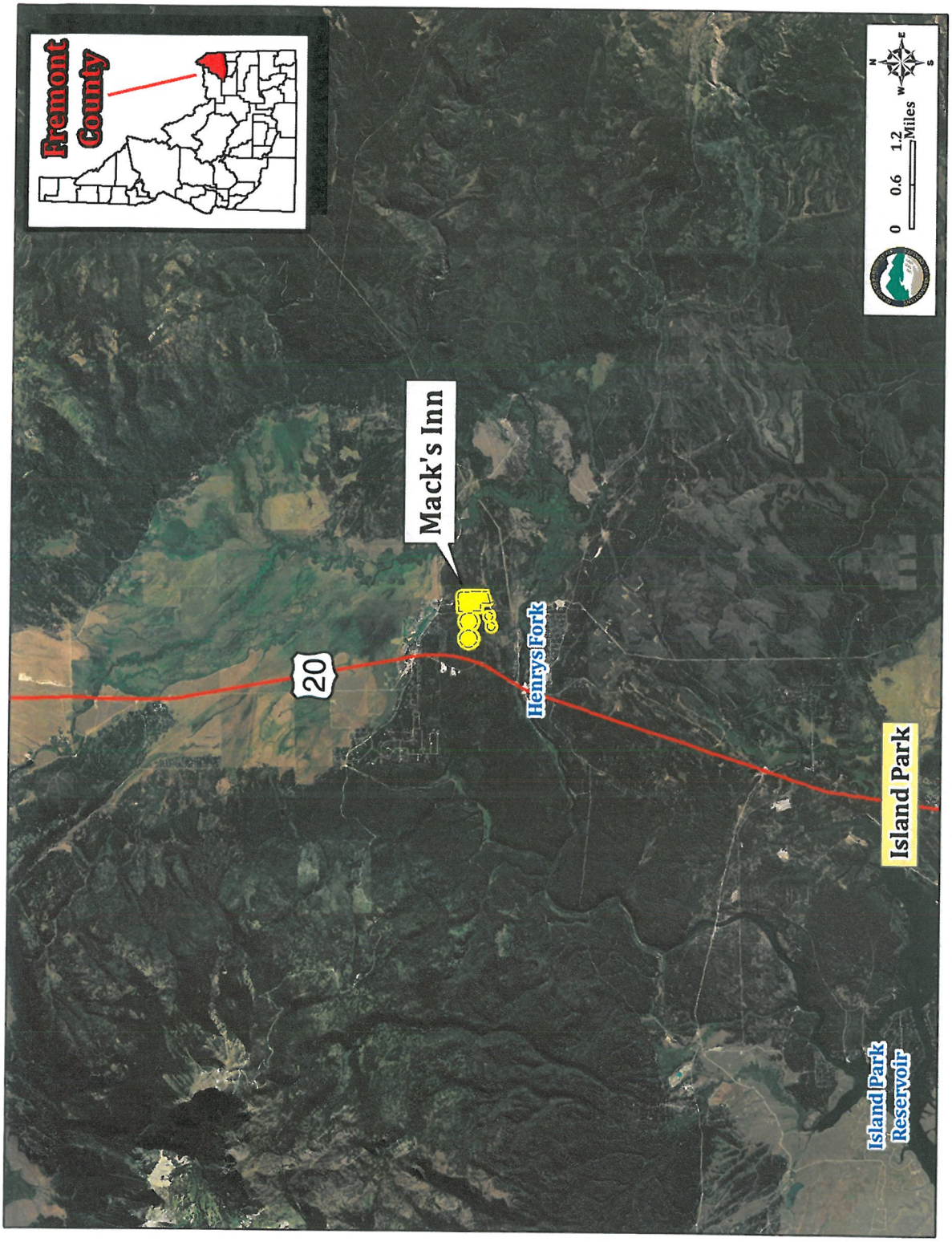
The well owner must have any well shown to pose a threat to human health and safety or cause contamination of the ground water resource immediately repaired or decommissioned (abandoned) by a licensed well driller under a permit issued by the IDWR director in accordance with the applicable rules. See IDAPA 37.03.09.036.06 and consult the IDWR for more information.

11. Site Maps

11.1 Facility Maps



11.2 General Area Maps



December 6, 2013

MEMORANDUM

To: Chas Ariss, Wastewater Program Manager
Erick Neher, Idaho Falls Regional Administrator
Greg Eager, Idaho Falls Engineering Manager

From: Mazzone, DEQ Idaho Falls

Re: Reuse Permit M-057-04, Mack's Inn municipal wastewater treatment facility, Staff Analysis supporting reuse permit renewal.

Executive Summary

Mack's Inn is a Class 1 municipal wastewater treatment facility which reused an average of 38.29 million gallons annually during the last four years: 26.35 MG to 58 acres during the growing season and 11.94 MG to 12 acres during the non-growing season.

The facility is currently undergoing a 50 acre growing season expansion to meet future needs. The expansion is included in this permit under identical requirements for the existing acreage.

Inspections and annual reports during this permit cycle have shown substantial permit compliance. High inflow in 2011 was caused by a landowner who uncovered and broke inlets to a manhole during the winter, causing large inflow at spring melt off. The facility notified the DEQ when they located the problem, along with the resultant over capacity expected in the lagoons and the need to land apply the excess wastewater.

The DEQ recommends this routine permit renewal with a permit period of 10 years based on superior facility management, substantial permit compliance, and the expansion's ability to supply the requirements for future community growth.

Introduction

The purpose of this memorandum is to satisfy the requirements of IDAPA 58.01.17.400 for issuing Wastewater Reuse permits. It briefly states the principal facts and significant questions considered in preparing the draft permit and provides a summary of the basis for the draft permit conditions.

The current permit, LA-000057-03, was issued February 24, 2009, and expires on February 24, 2014. In 2013 the facility initiated a 50 acre growing season expansion which will not be completed prior to issuance of the renewed permit.

The facility submitted the permit renewal technical report, including the facility expansion, received by the DEQ on January 16, 2013. The DEQ decided to delay a permit modification and roll the expansion into the permit renewal based on the timeline for expansion completion. The pre-application meeting was held during the facility inspection on September 19, 2013. The application was determined to be complete on October 23, 2013.

1. Site Location and Ownership

Site location and ownership are given in detail on the draft permit and the facility permit application (JUB Engineers, Inc., 2013). Appendix 1 of this analysis is a site map.

Location: Approximately 1 mile northeast of Mack's Inn. Township 14N, Ranges 43E, Section 25, and 44E, Section 30. The area is covered by the USGS *Big Springs, Idaho* quadrangle.

The entire treatment site is USDA Forest Service land, with site usage granted to Fremont County through a Term Special Use Permit which was renewed in 2013 and carries a 20 year term.

The facility is managed by Fremont County; the responsible official is the chairman of the Fremont County Commissioners.

2. Process Description

A detailed process description is located in the permit application, page 4(JUB Engineers, Inc., 2013).

Influent to this facility has averaged 31 million gallons over the last 4 years and is delivered to the facility via two lift stations.

Wastewater is screened and treated to secondary standards via two aerated lagoons and a facultative lagoon. A fourth lagoon serves as storage.

Growing season slow rate application occurs on two hydraulic management units: 1) a 58 acre forested site via fixed irrigation lines, and 2) a recently constructed fifty acre native vegetation site via two pivot sprinklers. Growing season reuse volumes have averaged 26.35 million gallons over the last four years.

Non-growing season application occurs on 12 acres via two snowfluent towers (snow making). Non-growing season reuse volumes have averaged 11.94 million gallons over the last four years.

The facility also utilizes an evaporator between two lagoons. The evaporator is wind speed, wind vector, and growing season limited. Wastewater which does not evaporate falls back to lagoons for containment. The last four years averaged 5.98 gallons of wastewater to the evaporator; actual evaporated volume is unknown. Evaporation efficiency is difficult to quantify due to dynamic meteorological conditions and difficult measurement techniques, but the facility estimates 25 percent to 50 percent efficiency, for a range of 1.5 to 3 MG evaporated per year. However, the evaporator is permit limited by allowable months of operation, and not limited by volume of wastewater.

All wastewater is chlorine disinfected prior to reuse or evaporation.

3. Site Characteristics

A. Site Management History

The facility has been limited to silviculture since its 1981 inception due to United States Forest Service restrictions on its land leased for use by the facility. As part of the lease agreement, no harvesting has been allowed on the reuse site, with the exception of saplings mowed down during the course of set sprinkler line maintenance. Therefore, site management has been unchanged:

secondary treatment of wastewater and slow rate reuse. Two snowfluent towers were added in the year 2000.

Future site management is discussed below in Section 5.F – *Cropping Plan*.

B. Climatic Characteristics

The climatic characteristics are described in detail on page 9 of the permit application (JUB Engineers, Inc., 2013). The nearest weather station is Island Park, ID.

The average total precipitation is 28.84 inches per year; average total snowfall is 211.1 inches per year. The annual average maximum temperature is 51.6 °F and annual average minimum temperature is 22.4 °F. Additional meteorological data can be found at: http://www.wrcc.dri.edu/summary/climsmid.html

The wind direction is from the SSW 50% of the time, and from the south 50% of the time. The average wind speed is 9 mph.

The precipitation deficit (net irrigation water requirement) is 18.0 inches growing season and 36.0 inches non-growing season (Wakagawa, 1996).

C. Soils

Soil types present are described in detail on page 10 and in Appendices E & F of the permit application (JUB Engineers, Inc., 2013). Predominant soil types are Perfa and Bootjack soils: deep, sandy loams, and moderately well drained. Additional soil information for the site can be found in the NRCS soil survey for Fremont County: http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

Soil	Profile	AWC*	Slope
Perfa	0 to 1": moderately decomposed plant material 1 to 12": sandy loam 12 to 62": gravelly coarse sand	Very low; about 1.9 inches	0 to 4%
Bootjack	0 to 2": moderately decomposed plant material 2 to 5": silt loam 5 to 17": loam 17 to 60": stratified fine sand to coarse sand	Low; about 3.8 inches	0 to 2%

*Available water capacity

D. Surface Water

The nearest surface water is the Henry's Fork, 0.4 miles from the southwest edge of the snowfluent site. The facility is outside the 100 year flood plain.

E. Ground Water / Hydrogeology

Groundwater is first encountered 18 to 25 feet below the ground surface at the facility. Groundwater flow is generally to the south southwest. Sampling conducted at this facility shows no evidence of groundwater contamination due to reuse activities.

4. Wastewater Characterization and Loading Rates

A. Wastewater Characterization

Wastewater effluent to reuse is summarized in Table 4A, below.

Table 4A. Wastewater Volumes, Quality, and Constituent Loading

Loading Rates	Permit	2009	2010	2011	2012
Land Application					
Acres	58	58	58	58	58
Days per year	168	168	168	168	168
Wastewater					
MG	**28.35**	23.747	20.869	38.058	22.723
ac*in.	1044	874.52	768.53	1401.55	836.81
ac*in/ac	**18.0**	15.1	13.3	24.2	14.4
Nitrogen:					
NTKN + NNO3 mg/L		19.94	17.05	11.39	13.28
lb/yr		3943	2963	3610	2512
lb/ac*yr		68.0	51.1	62.2	43.3
Phosphorus:					
mg/L		3.93	3.81	2.56	3.23
lb/yr		777	662	811	612
lb/ac*yr		13	11	14	11
TDS:					
mg/L				183	157
lb/yr				57,994	29,722
lb/ac*yr				1,000	512
Snowfluent					
Acres	12	12	12	12	12
Days per year	197	197	197	197	197
Wastewater					
MG applied:	**16.000**	10.285	9.667	12.089	15.730
MG minus 25% sublimation	12.0	7.714	7.250	9.067	11.798
ac*in.	441.9	284.1	267.0	333.9	434.5
ac*in/ac	**36.8**	23.7	22.3	27.8	36.2
Nitrogen:					
NTKN + NNO3 mg/L		21.52	23.57	15.65	25.92
lb/yr		1,843	1,897	1,575	3,395
lb/ac*yr		154	158	131	283
Phosphorous:					
mg/L		5.68	5.23	3.57	4.73
lb/yr		486	421	359	619
lb/ac*yr		41	35	30	52
TDS:					
mg/L				176	225
lb/yr				13,263	22,089
lb/ac*yr				1,105	1,841
Evaporator					
Days per year	184				
Wastewater circulated, MG		8.40	8.40	3.2	3.90

B. Hydraulic Loading Rates

Historic hydraulic loading rates for each of the reuse fields are shown above in Table 4A.

Note the year 2011 over applied wastewater due to spring melt inflow and infiltration. The facility contacted the DEQ to notify of expected overloading, as well as locating and correcting the cause of the increased inflow and infiltration.

C. Constituent Loading Rates

Constituent loading rates are given in table 4A, above.

5. Site Management

A. Buffer Zones

Section 6.5.1 of the *DEQ Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater* recommends the following buffer distances for Class C wastewater; the facility buffer distances are listed below.

- A land treatment system should not be located closer than 300 feet from the nearest inhabited dwelling.
  - Land was developed north of HMU 1 since the last permit issuance. The county negotiated deed restrictions for the properties which include 300 feet dwelling setbacks from the HMU.
- A land treatment system should not be located closer than 1,000 feet from a public water supply well or 500 feet from a private water supply well used for human consumption.
  - Land was developed north of HMU 1 since the last permit issuance. The county negotiated deed restriction for the properties which include 1200 feet well setbacks from the HMU.
- A minimum buffer of 50 feet should be provided between the wastewater application site and areas accessible by the public.
  - HMU 1 borders the county road providing access to the facility. Consequently, a six feet tall fence was constructed to deny public access.
  - Due to the popularity of snowmobiling in the area, knock down fences surround the HMUs to avoid winter hazards. That excludes the section of HMU 1 along the county road, which has a six feet tall fence.
  - HMU 2, the snowfluent site, has a fence along the north border, and is left unfenced on three sides to avoid winter snowmobile hazards. Signage warns snowmobilers to keep out due to wastewater.
- The distance from the treatment site to permanent or intermittent surface water, other than irrigation ditches and canals, should be 100 feet.
  - There is no permanent or intermittent surface water within 100 feet.
- A 50-foot separation distance should be provided between the land treatment site and temporary surface water and irrigation ditches and canals.
  - There are no temporary surface water features within 50 feet.

B. Runoff

The facility does not have a runoff management plan. A runoff management plan is required as a compliance activity in this permit renewal.

C. Seepage Rate Testing

Cell D was relined in the autumn of 2013, and will be seepage tested in 2014. The facility plans to retest all the lagoons in 2014.

Lagoon	Test date	Test approval date	Seepage rate (in./day)	Allowable rate (in./day)	Next seepage test due date
Cell A	2005 2006	(failed) 2006	0.228 0.02	0.125 0.125	- 2016
Cell B	2005	2005	.012	0.125	2015
Cell C	2005	2005	-0.024	0.125	2015
Cell D	2005	2005	-0.024	0.125	2014

**negative values reflect uncertainty at very low seepage rates; these two ponds were relined prior to the (negative value) seepage tests.*

Test procedures for completing seepage tests should be submitted six months prior to the due date shown in the table above.

D. Waste Solids/Biosolids/Sludge/Solid Waste

The facility conducted biosolids disposal for Cell D dredgings under a DEQ approved plan in the autumn of 2013. The disposal plan should be updated and resubmitted for approval upon any future need for biosolids disposal.

The facility has a waste solids management plan approved by the DEQ on November 26, 2013.

E. Nuisance Odors

A nuisance odor management plan was submitted and approved by the DEQ on November 26, 2013.

F. Cropping Plan

The silvicultural practice of cultivating native vegetation at this facility - along with the USDA imposed restriction disallowing harvesting - negated the need for a cropping plan previously. However, with the addition of 50 acres, the facility is requested to submit a cropping plan for all acreage as part of the Plan of Operation update.

G. Grazing

Grazing is not allowed at Mack's Inn.

6. Monitoring

Monitoring at Mack's Inn has historically shown no constituents of concern as determined by concentrations. Therefore, this facility should be subject to less rigorous monitoring. For example, COD was removed from wastewater monitoring during the last permit renewal, as concentration were well below COD loading limits imposed by the DEQ. Other changes are listed below according to the monitored medium.

A. Wastewater Monitoring

Wastewater monitoring is based on Table 7-9 (page 7-53) of the DEQ *Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater Monitoring*, under the category *Municipal Facility (Guideline Loading Rates)*.

Deviations from Table 7-9 'usually monitored' category include:

- Total Settleable Solids and Total Suspended Solids were replaced with Total Dissolved Solids for both historic consistency as well as potential impact to ground water associated with Total Dissolved Solids.
- Electrical Conductivity was not included as it has never been required of this facility, and considered of little value to operations and management.
- Chloride was not included as it has never been required of this facility, and considered of little value to operations and management.

Deviations from Table 7-9 as 'generally not monitored' include:

- Total Dissolved Solids were included due to potential impact to ground water.
- Total phosphorus is included for calculating yearly phosphorus loading.
- pH was removed as a required monitored constituent due to limited monitoring value.

The following wastewater monitoring is required. Only total coliform has a permit limited maximum concentration: Class C effluent at 23 CFUs total coliform per 100 mL, based on a median average of the last 5 results and a maximum limit of 230 CFUs/100 mL on individual samples.

Sample Type and Frequency	Constituents
Grab/monthly (during periods of use)	- Nitrate + Nitrite, as N - Total Kjeldahl Nitrogen, as N - Total Dissolved Solids - Total Phosphorus
Grab/weekly (during periods of use)	- Total coliform

B. Soil Monitoring

Soil monitoring is based on Table 7-5 (page 7-41) of the DEQ *Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater Monitoring*, under the category *Municipal Facility (Guideline Loading Rates)*.

Deviations from the 'usually monitored' category include:

- Ammonium (NH_4) was removed as the facility does not actively fertilize or manage nutrient levels for crops.
- Texture was not included for historic consistency – it has never been required of this facility.

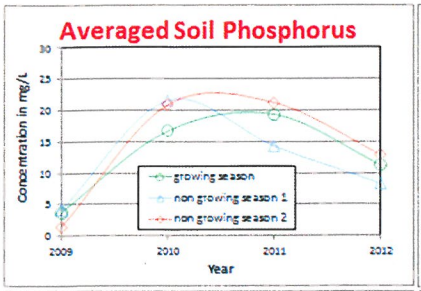
Deviations from the 'generally not monitored' category include:

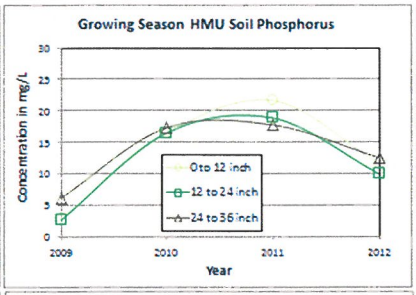
- First year indicators of hydraulic overloading (SAR, DTPA-Mn and DTPA-Fe) were removed due to historically low values showing not only lack of overloading concern, but also less of a concern with the addition of another 50 acres to the facility.
- Electrical Conductivity was removed as Cation Exchange Capacity is required and a viable substitute.

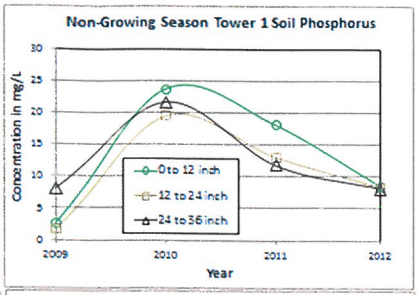
The following soil monitoring is required.

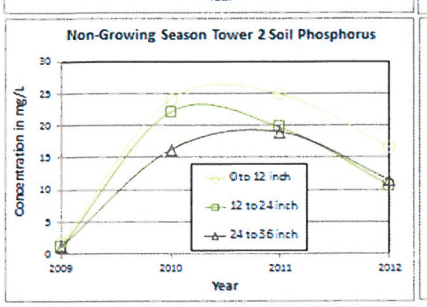
Sample Frequency	Constituents
Annually, June, or as soon as snowmelt allows	Chloride Cation Exchange Capacity (CEC) Nitrate plus nitrite as nitrogen Plant available phosphorus

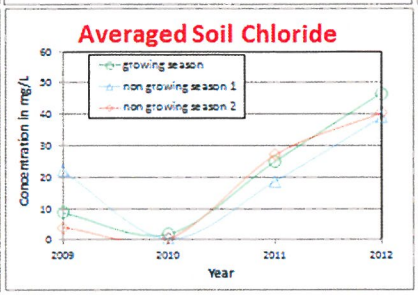
Soil monitoring results are charted below; a summary table follows the charts.

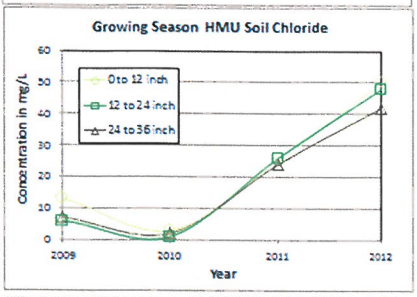


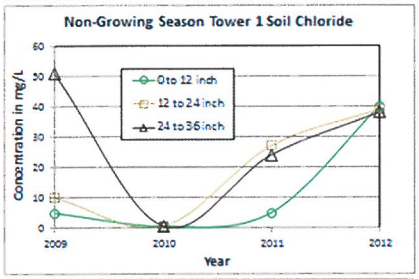


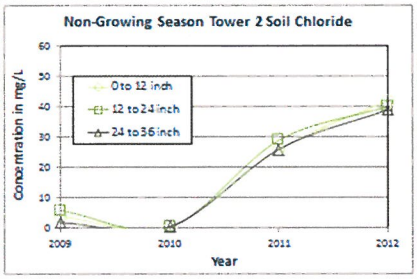


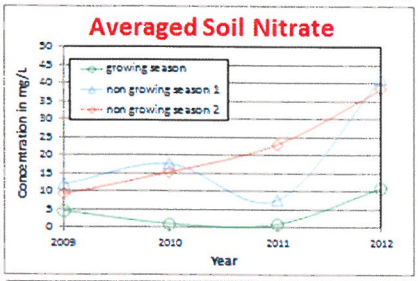


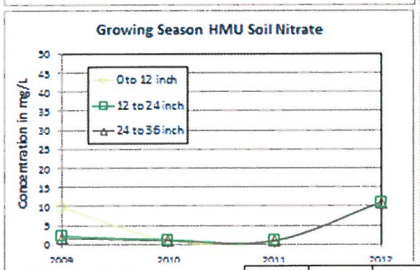


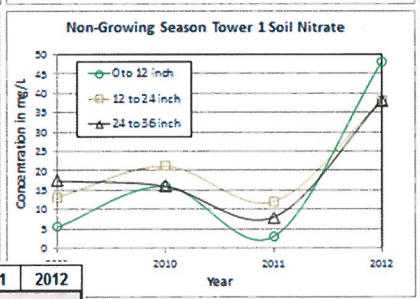


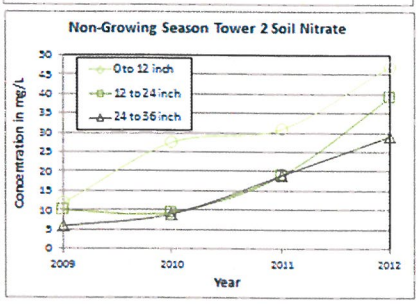












Soil Analysis	2009	2010	2011	2012
Average values for Growing Season Irrigation				
CEC, cmon(+)/kg; meq/100g	28.4	24.9	28.5	34.2
Cl, mg/Kg	8.7	2.0	25.0	46.7
Ammonia, mg/Kg	1.1	1.6	0.7	0.4
Nitrate, mg/Kg	4.6	1.1	1.0	11.0
P, mg/Kg	3.8	16.7	19.4	11.3
pH	8.7	5.3	5.3	5.2
Fe - DTPA, mg/L	65.7			
Mn - DPTA, mg/L	18.1			
SAR, ppm	11.6			
Average values for SU05702 Snowfluent tower 1 (west)				
CEC, cmon(+)/kg; meq/100g	23.7	18.5	29.2	28.9
Cl, mg/Kg	22.0	0.5	18.7	39.0
Ammonia, mg/Kg	1.4	3.6	1.4	0.6
Nitrate, mg/Kg	12.0	17.7	7.7	41.3
P, mg/Kg	4.2	21.6	14.3	8.3
pH	5.8	5.1	4.9	4.8
Fe - DTPA, mg/L	90.3			
Mn - DPTA, mg/L	29.6			
SAR, ppm	11.2			
Average values for SU05703 Snowfluent Tower 2 (east)				
CEC, cmon(+)/kg; meq/100g	21.6	22.3	27.8	29.0
Cl, mg/Kg	4.0	0.5	27.0	40.3
Ammonia, mg/Kg	1.1	2.8	1.3	0.9
Nitrate, mg/Kg	9.2	15.3	23.0	38.3
P, mg/Kg	1.4	20.9	21.2	12.9
pH	5.7	4.9	5.2	4.9
Fe - DTPA, mg/L	69.3			
Mn - DPTA, mg/L	15.6			
SAR, ppm	11.9			

The charts above and data table left show concern for soil nitrate at the non-growing season snowfluent sites. Soil nitrate and ground water nitrate should be reviewed and interpreted in future monitoring to evaluate increasing concentrations in the soil as well as potential breakthrough to the ground water.

C. Ground Water Monitoring

Ground water monitoring is based on Table 7-1 (page 7-17) of the DEQ *Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater Monitoring*, under the category *Municipal Facility (Guideline Loading Rates)*.

Deviations from the 'usually monitored' category include:

- pH was removed as this 'field parameter' is typically lower in volcanic soils, and does not indicate operations or management.
- Phosphorus is included to monitor any potential breakthrough of the phosphorus from the soil to the groundwater.

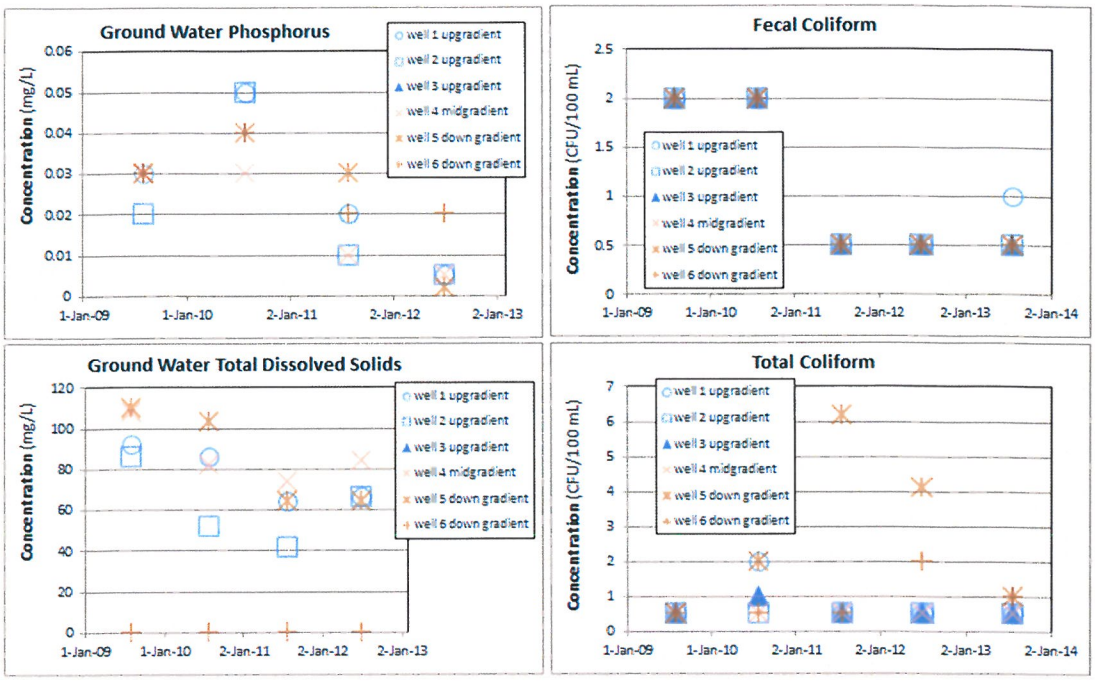
Deviations from the 'generally not monitored' category include:

- Total and dissolved Fe and Mn were removed as both are typically high concentration in the volcanic soils of the area, and therefore not indicators of hydraulic overloading.
- Fecal coliform was removed as a monitored parameter, leaving only total coliform, more in line with current ground water sampling protocol.
- Total Dissolved Solids (TDS) were included to monitor ground water impact from wastewater.

The following ground water monitoring is required.

Sample Type	Constituents
Annual unfiltered grab sample	Water table depth and elevation Chloride Nitrate-nitrogen, as N Phosphorus Total coliform

Ground water phosphorus, TDS, and coliforms are charted below. Note that fecal coliform upgradient concentrations are identical to downgradient concentrations, showing the contamination originating off-site (a groundwater flow diagram is located at the end of Appendix I). Total coliform in wells 5 and 6 are suspected to be caused by the leaking Cell D liner which was replaced in 2013. The sample results for 2013 show decreased concentrations, and are believed to be results of the Cell D water level drawn down in preparation for relining.



D. Supplemental Irrigation Water Monitoring

This facility does not utilize supplemental irrigation.

E. Crop Yield and Tissue Monitoring

This facility does not harvest crop material; therefore, no yield data or tissue monitoring is required. However, if the cropping plan submitted for the new acreage includes tree removal, yield and tissue analysis will be addressed at that time.

F. Meteorological Monitoring

Mack's Inn is wind direction and velocity limited for evaporator use. As stated in the permit, the following limitations exist for the evaporator.

- The evaporator system shall shut down automatically if the wind speed exceeds 5 mph in the direction of the road or buildings. The system shall also shut down automatically when wind speeds are in excess of 20 mph in any direction.

The evaporator is automated to shut down if either of the above two conditions occur.

G. Calculation Methodologies

The following methods of calculation are used to determine permit compliance.

a) Hydraulic volumes

- Influent volumes are measured by flow meter;
- Effluent volumes to reuse and evaporation are measured by flow meter;
- Inches of irrigation are calculated by dividing the total flow by the acreage according to the annual report worksheet.

b) Constituent loading rates

Constituent loading rates are determined by applying analyzed concentrations to wastewater volumes and irrigated acreage.

H. Quality Assurance Project Plan

A Quality Assurance Project Plan (QAPP) has not been developed for this facility, and is a compliance activity on this permit renewal.

7. Site Operation and Maintenance

System Classification: Wastewater Collection Class III, Treatment Class I. Operators are required to have Class III collection, Class I treatment, and Land Application licensure.

Five Fremont County employees operate the wastewater collection, treatment, and reuse site. Collective licensure among the operators is:

- Treatment: 3 Class II treatment and 1 Class I treatment licenses;
- Collection: 1 Class IV Collection, 1 Class III Collection, and 2 Class II Collection licenses. One employee is soon to upgrade from Class II to Class III.
- Land Application: four operators have land application licenses.
- Operator in Training: one OIT Collection and one OIT Treatment.

8. Compliance Activities

A. Status of Compliance Activities in Current Permit

1. CA-057-01: A Plan of Operation update required the following items.
   - Irrigation schedules for the slow rate application.
     - Status: complete.
   - An Odor Management Plan.
     - Status: complete.
   - A Waste Solids Management Plan;
     - Status: complete.
   - A Runoff Management Plan.
     - Status: incomplete. This requirement is included in the permit renewal as a compliance activity.

2. CA-057-02. Well Locations Survey Report
   Status: complete.

3. CA-057-03. Seepage test
   Status: although this requirement was removed due to the DEQ policy change from 5 year seepage testing frequency to 10 year frequency, the facility will test the newly relined Cell D in 2014, and plans to test all the other cells at the same time.

4. CA-057-04. Collaborative site inspection.
   Status: this requirement was waived by the DEQ due to the US Forest Service restrictions already placed on site management which restrict harvesting and limit vegetation to native flora. Further, the current expansion lease negotiations between the USDA Forest Service and Fremont County detailed all lease expectations and requirements.

B. Compliance Activities Required in New Permit

The following Compliance Activities are specified in the draft permit:

- A Plan of Operation update which includes a Runoff Management Plan and a Cropping Plan is required. The facility is currently preparing an irrigation schedule to include the 50 acre expansion.

- A Quality Assurance Project Plan (QAPP) is required.
- Seepage testing: permit required dates are listed below; the facility plans to test all lagoons in 2014.

Lagoon:	Seepage Test Due Date:
LG-05701/Cell A	August 2016
LG-05702/Cell B	August 2015
LG-05703/Cell C	August 2015
LG-05704/Cell D	September 2014

- Posted signs which include the Spanish language.
- Pre-application workshop.
- Renewal permit application.

9. Recommendation

Staff recommends the draft wastewater reuse permit be issued. The permit specifies hydraulic and constituent loading limits and establishes monitoring and reporting requirements to evaluate system performance, environmental impacts, and permit compliance.

References

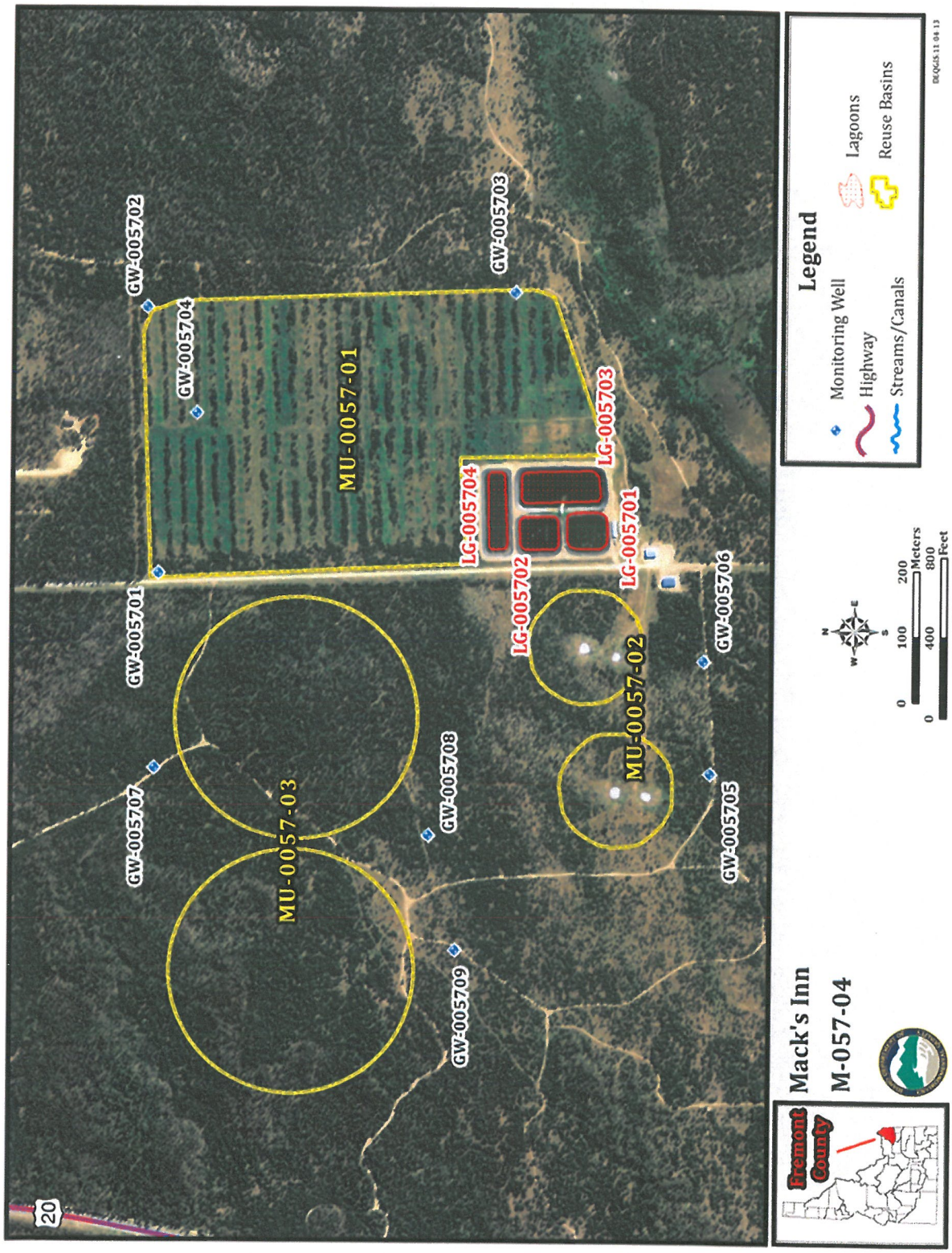
DEQ, 2008, *Permit Renewal Staff Analysis: Mack's Inn Wastewater Treatment and Reuse Facility; LA-000057-3*. July 18, 2008.

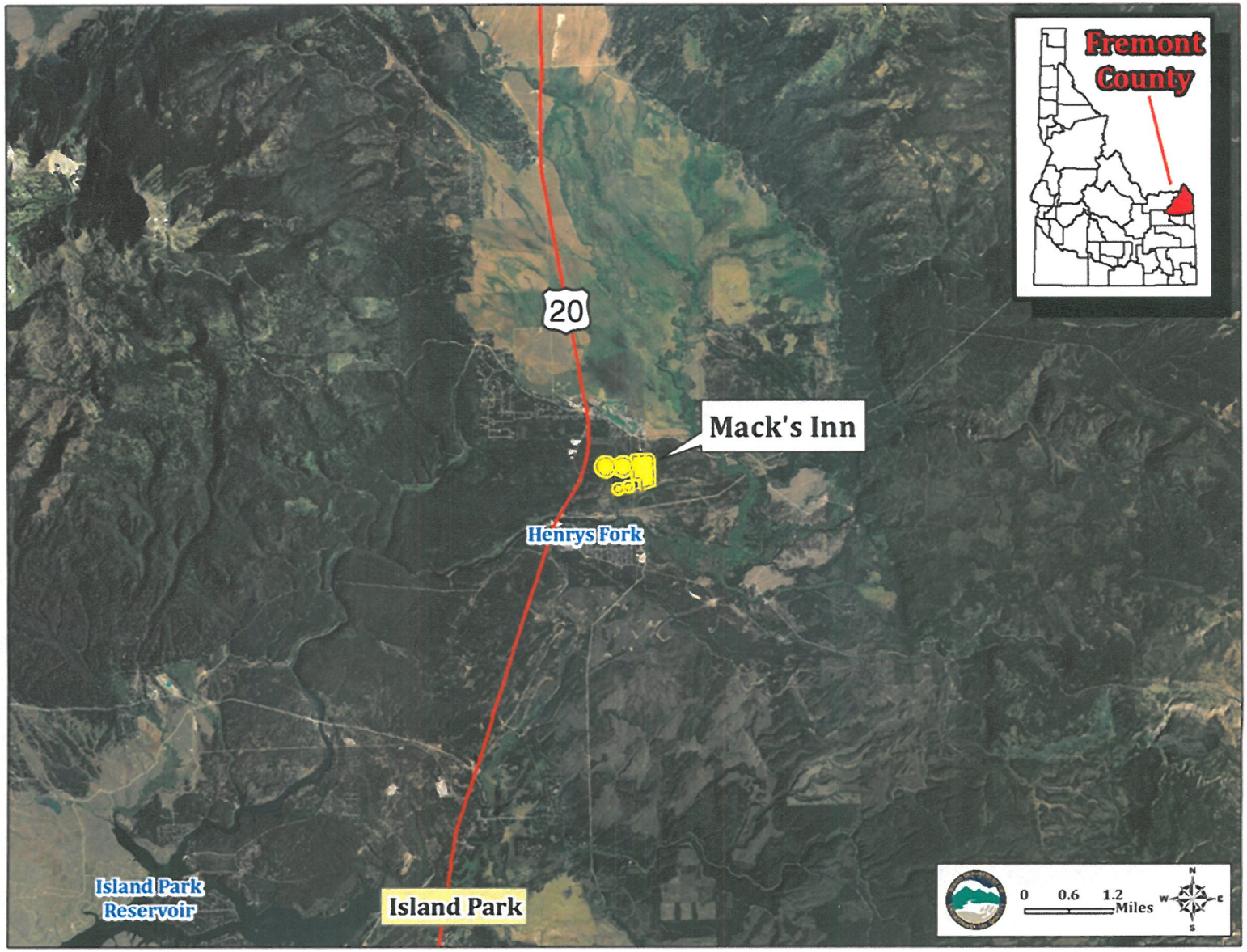
DEQ, 2009, *Municipal Wastewater Reuse Permit LA-000057-03*. February 24, 2009.

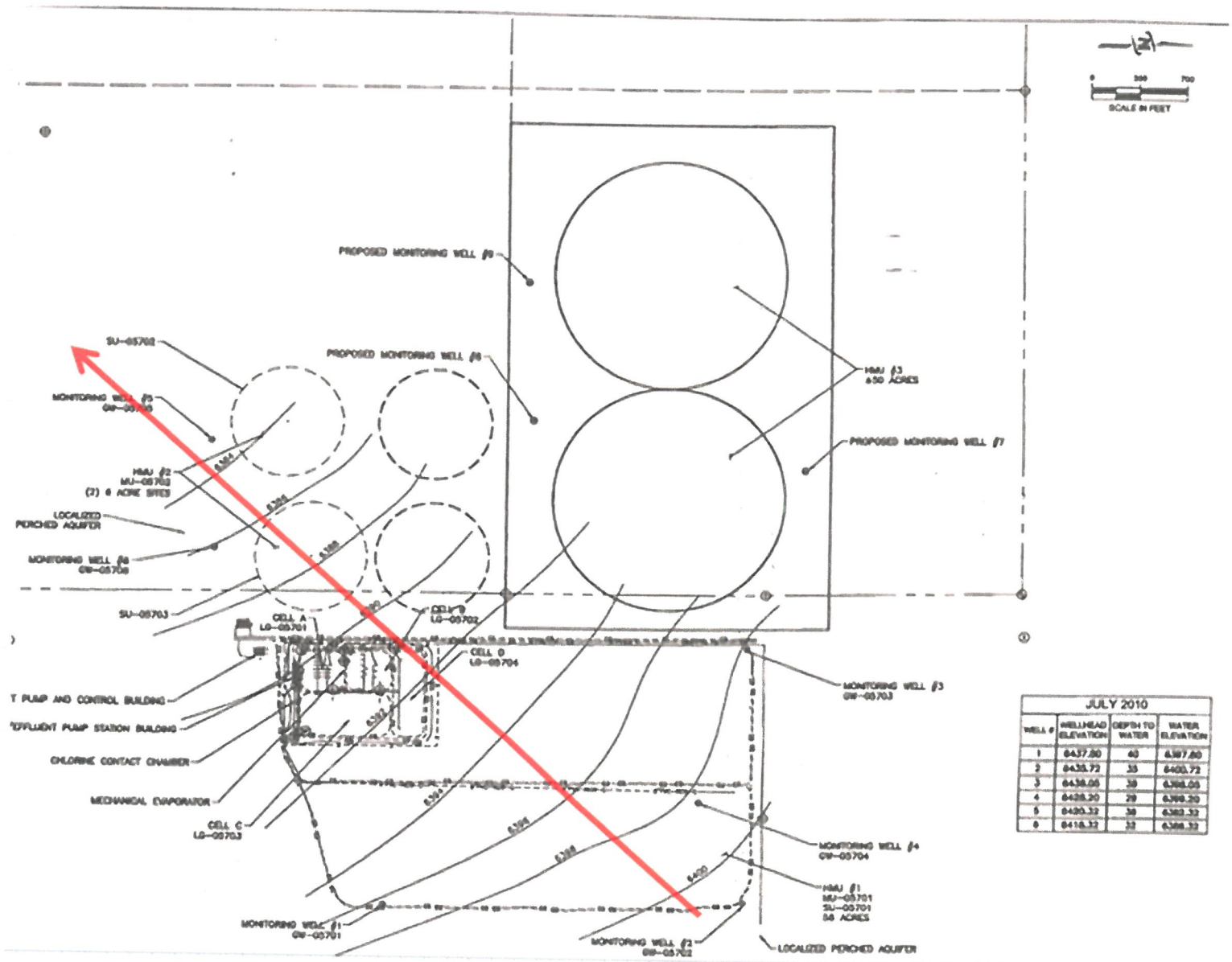
JUB Engineers, Inc., 2013, *Technical Report for Wastewater Land Application Permit Major Modification*, TRIM no. 2013AGH69. January 2013.

Wakagawa, 1996, Memo *Macks Inn/Island Park Land Application Permit, LA-57*. May 6, 1996.

Appendix 1
Site Maps




Fremont County
20
Mack's Inn
Henrys Fork
Island Park Reservoir
Island Park
0 0.6 1.2 Miles
N
W
E
S



JULY 2010

WELL #	WELLHEAD ELEVATION	DEPTH TO WATER	WATER ELEVATION
1	6437.80	40	6397.80
2	6438.72	38	6400.72
3	6438.05	38	6398.05
4	6428.20	29	6399.20
5	6430.32	38	6392.32
6	6418.32	33	6388.32

NDER: COMPLETE THIS SECTION

Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

LEROY MILLER
FREMONT CTY COMMISSIONER
151 W 1ST N
ST ANTHONY ID 83445

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Lori Lewis
C. Date of Delivery 2-10-14

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

RECEIVED
FEB 11 2014
DEQ-IDAHO FALLS

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7013 1090 0001 7435 9211

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

JON BROWN
FREMONT COUNTY SEWER
PO BOX 131
MACKS INN ID 83433

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Jon Brown ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* JON BROWN

C. Date of Delivery 2-10-2014

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

RECEIVED
FEB 11 2014
DEQ IDAHO FALLS

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7013 1090 0001 7435 9204

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540