A. Permit Certificate

INDUSTRIAL
WASTEWATER REUSE PERMIT
~~LA~~WRU I-~~000~~160-01
(Formerly LA-000160-01)

U.S. Department of Energy – Idaho Operations Office, 1955 Fremont Avenue, Idaho Falls, Idaho 83415 and Battelle Energy Alliance, LLC, P.O. Box 1625, Idaho Falls, Idaho 83415 ARE HEREBY AUTHORIZED TO CONSTRUCT, INSTALL, AND OPERATE A WASTEWATER REUSE SYSTEM IN ACCORDANCE WITH THE WASTEWATER REUSE RULES (IDAPA 58.01.17) AND WASTEWATER RULES (IDAPA 58.01.16), THE GROUND WATER QUALITY RULE (IDAPA 58.01.11), AND ACCOMPANYING PERMIT, APPENDICES, AND REFERENCE DOCUMENTS. **This permit is applicable to the INL Materials and Fuels Complex (MFC) Industrial Waste Ditch (IWD) and Industrial Waste Pond (IWP).** THIS PERMIT BECOMES EFFECTIVE ON **MAY 1, 2010** AND EXPIRES ON **APRIL 30, 2015**.

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

Date:_____

DEPARTMENT OF ENVIRONMENTAL QUALITY
900 North Skyline, Suite B
Idaho Falls, Idaho 83402
208-528-2650

POSTING ON SITE RECOMMENDED

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References

1. Plan of Operation (Operation and Maintenance Manual) (See Section E, CA-160-01)
2. Waste Solids Management Plan (See Section E, CA-160-02)

The Sections, Appendices, and Reference Documents listed on this page are all elements of Wastewater Reuse Permit LA-000160-01 and are enforceable as such. This permit does not relieve United States Department of Energy and Battelle Energy Alliance, hereafter referred to as the permittee, from responsibility for compliance with other applicable federal, state or local laws, rules, standards or ordinances.

C. Abbreviations, Definitions

BMP or BMPs	Best Management Practices
DEQ or the Department	Idaho Department of Environmental Quality
Director	Director of the Idaho Department of Environmental Quality, or the Directors Designee, i.e. Regional Administrator
GW	Ground Water
GWQR	IDAPA 58.01.11 "Ground Water Quality Rule"
Guidance	Guidance for the Reclamation and Reuse of Municipal and Industrial Wastewater, DEQ
HMU	Hydraulic Management Unit (Serial Number designation is MU)
IDAPA	Idaho Administrative Procedures Act.
INL	Idaho National Laboratory
IWD	Industrial Waste Drainage Ditch
IWP	Industrial Waste Pond
MG	Million Gallons (1 MG = 36.827 acre-inches)
MFC	Materials and Fuels Complex
MGA	Million Gallons Annually (per WWRU Reporting Year)
O&M manual	Operation and Maintenance Manual, also referred to as the Plan of Operation
SMU	Soil Monitoring Unit (Serial Number designation is SU)
TDS	Total Dissolved Solids or Total Filterable Residue
USDOE	United States Department of Energy
USDOE - ID	United States Department of Energy – Idaho Operations Office
USGS	United States Geological Survey
WW	Wastewater applied to the reuse treatment site

D. Facility Information

Legal Name of Permittee	United States Department of Energy (USDOE) – Idaho Operations Office and Battelle Energy Alliance LLC.
Type of Wastewater	Non-hazardous, Non-radiological Industrial Wastewater consisting primarily of a mixture of non-contact cooling water, steam condensate, boiler blowdown, reverse osmosis and laboratory sink effluent, and periodic industrial wastewater discharges from MFC process holdup tanks.
Method of Treatment	Rapid Infiltration
Type of Facility	Federal – U.S. Department of Energy Laboratory that conducts nuclear research and technology development, develops and demonstrates national security technologies, and other science and technology activities.
Facility Location	Idaho National Laboratory (INL), Materials and Fuels Complex (MFC). MFC is located in the southeastern corner of INL, approximately 36 miles west of Idaho Falls in Bingham County.
Legal Location	Township 3N, Range 32E, Sections 12,13 and 14
County	Bingham
USGS Quad	Circular Butte 3SW
Soils on Site	Bondfarm-Rock Outcrop-Grassy Butte Complex
Depth to Ground Water	Depth to Snake River Plain Aquifer: 650 feet
Beneficial Uses of Ground Water	Agricultural, Industrial, Domestic, and Aquaculture
Nearest Surface Water	N/A
Beneficial Uses of Surface Water	N/A

D. Facility Information

IWP Facility Manager **Mailing Address** **Phone / Fax** **Email**	Idaho National Laboratory ~~David B. Lively~~Scott L. Lyman MFC Facility and Site Services Operation Manager Battelle Energy Alliance, LLC P.O. Box 1625, MS 6172 Idaho Falls, ID 83415 Tel: (208) 533-7438 Fax (208) 533-7030 Email ~~David.Lively@inl.gov~~Scott.Lyman@inl.gov
Responsible Officials **Mailing Address** **Phone / Fax**	William F. Hamel Assistant Manager for Infrastructure Support U.S. Department of Energy-Idaho Operations Office 1955 Fremont Ave. Idaho Falls, Id 83415 Tel: (208) 526-9322 Fax: (208) 525-8082 ~~Dwayne E. Coburn~~Carlo D. Melbihess Facilities and Site Services Director Battelle Energy Alliance, LLC P.O. Box 1625, MS 3406 Idaho Falls, Idaho 83415-~~6146~~3406 Tel: (208) 526-9732 Fax: (208) 526-4451 Email: Carlo.Melbihess@inl.gov
Facility Contacts **Mailing Address** **Phone / Fax**	Venica Dugger Environmental Technical Support U.S. Department of Energy-Idaho Operations Office 1955 Fremont Ave. Idaho Falls, Id 83415-1216 Tel: (208) 526-8870 Fax: (208) 526-1926 Jo Anna Stenzel Environmental Support and Services Director Battelle Energy Alliance, LLC P.O. Box 1625, MS 3405 Idaho Falls, Idaho 83415-~~3404~~3405 Tel: (208) 526-8496 Fax: (208) 526-3149

Additional Facility Information: The United States Department of Energy (USDOE) is a federal agency of the Executive Branch. By applying for, and accepting this Reuse Permit, USDOE reserves and does not waive any rights, authority, claim or defenses, including both sovereign immunity and federal preemption under the Atomic Energy Act (AEA) that it may have or wish to pursue in any administrative, judicial or other proceeding.

USDOE asserts, with respect to AEA radioactive materials, that it is a self-regulating entity under the AEA. As such, the approval granted by DEQ to the permittee to land apply wastewater, as contained in this permit, does not authorize the application or disposal of AEA radioactive materials that may occur during the Reuse activities authorized by this permit.

E. Compliance Schedule for Required Activities

The Activities in the following table shall be completed on or before the Completion Date unless modified by the Department in writing.

Compliance Activity Number Completion Date	Compliance Activity Description
CA-160-01 **Within twelve (12) months of permit issuance.**	A final Plan of Operation (O&M Manual) for the wastewater reuse facility, incorporating the requirements of this permit shall be submitted to the Department for review and approval. The manual may reference other written procedures required for the operation and maintenance of the cold waste pond system. Upon approval, the Manual shall be incorporated by reference into this permit and shall be enforceable as a part of this permit.
CA-160-02 **As needed. Review and approval required prior to removal of any Waste Solids.**	A Waste Solids Management Plan shall be submitted for DEQ review and shall be approved by DEQ prior to any dredging or removal of solids, mud, or sludge from the Industrial Waste Pond. The plan shall outline actions associated with the removal (dredging) of solids in the Industrial Waste Pond. The plan shall include: specific information used in the determining the need for removal of solids, responsible person (s) for the decision, and a complete SOP for the removal of the solids.

F. Permit Limits and Conditions

Category	Permit Limits and Conditions
Type of Wastewater	Non-hazardous, Non-radiological Industrial Wastewater consisting primarily of a mixture of non-contact cooling water, steam condensate, boiler blowdown, reverse osmosis and laboratory sink effluent, and periodic industrial wastewater discharges from MFC process holdup tanks.
Application Site Area	Approximately 3 acres
Application Season	Year round (365 days)
Reporting Year for Annual Loading Rates	November 1 through October 31
Maximum Hydraulic Loading Rate	~~13~~ 17 million gallons/yr
Livestock Grazing	N/A
Ground Water Quality	Ground water quality shall be in compliance with the Ground Water Quality Rule (GWQR), IDAPA 58.01.11.
Maximum Effluent Concentrations, prior to disposal in the HMU for Total Nitrogen and Total Suspended Solids (TSS)	The maximum effluent constituent concentrations for Total Nitrogen and Total Suspended Solids monitored at the discharges into the Hydraulic Management Unit shall not exceed the following: Nitrogen (Total as N) shall not exceed a thirty (30) day average concentration of twenty (20) mg/L, IDAPA 58.01.17.600.06b Total Suspended Solids (TSS), which includes organic and inorganic particulate matter, shall not exceed a thirty (30) day average concentration of one hundred (100) mg/L, IDAPA 58.01.17.600.06.a
Construction Plans	Prior to construction or modification of all wastewater facilities associated with the reuse system or expansion, including monitoring wells, detailed plans and specifications shall be reviewed and approved by DEQ. Within 30 days of completion of construction, the permittee shall submit as-built plans for review and approval.
Fencing and Posting	Fencing and posting are not required at this facility.

G. Monitoring Requirements

The Permittee is allowed to apply wastewater and treat it on a reuse site as prescribed in the table below and in accordance with all other applicable permit conditions and schedules.

1) Pursuant to IDAPA 58.01.02.090.01 and IDAPA 58.01.11.200.01.(c)., appropriate analytical methods, as given in 40 CFR 136, 40 CFR 141, 40 CFR 143, or as approved by the Idaho Department of Environmental Quality, shall be employed. A description of approved sample collection methods, appropriate analytical methods and companion QA/QC protocol shall be included in the Plan of Operation (see Section E, CA-160-01).

2) The permittee shall monitor and measure parameters as stated in the Facility Monitoring Table in this section.

3) Samples shall be collected at times and locations that represent typical environmental and process parameters being monitored.

4) Unless otherwise specified in this permit, effluent wastewater samples shall be 24 hour flow proportioned samples of at least 8 aliquots collected either manually or automatically in a manner that yields a representative sample.

5) Ground water sampling procedures shall be incorporated into the Plan of Operation (see Section E, CA-160-01). The static water level shall be measured prior to pumping or sampling for ground water. Wells with inadequate sampling volume shall be reported as "Dry" in the Annual Report.

6) Annual reporting of monitoring requirements is described in Section H, Standard Reporting Requirements.

7) Monitoring locations are defined in Appendix 1, "Environmental Monitoring Serial Numbers".

G. Monitoring Requirements

Facility Monitoring Table

Frequency	Monitoring Point	Description/Type of Monitoring	Parameters
Monthly	Flow Meter	Flow of wastewater from Industrial Waste Pipeline into Industrial Waste Pond (Fig.2)	Volume (to the nearest 0.000 million gallons) to the hydraulic management unit (HMU), report monthly and annual totals.
Monthly	Estimation or Calculation	Flow of wastewater into Industrial Waste Ditch C from the Industrial Waste Water Under-ground Pipe (Fig. 2).	Volume (to the nearest 0.000 million gallons) to the hydraulic management unit (HMU), report monthly and annual totals.
Monthly	Effluent to IWP	Wastewater quality – 24-hr. Composite from Industrial Waste Pipeline (WW-016001), (Fig. 2)	Chloride, Fluoride, TDS, TSS, Sulfate, Total Phosphorous, Nitrite + Nitrate, Total Kjeldahl Nitrogen, pH Total recoverable metals (As, Ba, Cd, Cr, Pb, Hg, Se, Ag, Zn)
Quarterly	Effluent to Ditch C	Wastewater quality – into Industrial Waste Ditch C from the Industrial Waste Water Under-ground Pipe (WW-016002) (Fig. 2).	Chloride, Fluoride, TDS, TSS, Sulfate, Total Phosphorous, Nitrite + Nitrate, Total Kjeldahl Nitrogen, pH Total recoverable metals (As, Ba, Cd, Cr, Pb, Hg, Se, Ag, Zn)
Semi – Annual (September / October and April / May)	Ground Water monitoring wells, listed in appendix 1	Groundwater Quality – grab See Note ~~6~~5	Water Table Elevation, Water Table Depth, Temperature, Conductivity, Sodium, Chloride, pH, Sulfate, TDS, Total recoverable metals (As, Ba, Cd, Cr, Pb, Hg, Se, Ag, Zn), Nitrate-Nitrogen, Total Phosphorous, Total Iron, Total Manganese, Dissolved Iron[1], Dissolved Manganese[1].
First Year of Permit, and after replacement or modification of Meter(s) and/or associated piping(s)	Flow Meter on the Industrial Waste Pipeline (see Fig. 2).	Flow measurement calibration of all flows to HMU.	Document the flow measurement calibration of all flow meters and any other equipment or methods used to directly or indirectly measure all flows applied to the HMU. Submit the calibration testing and results to DEQ within the Annual Report.

1. Analytical results are required for dissolved iron and/or manganese only if the results for total iron and/or manganese exceed the standards in IDAPA 58.01.11.200.01.b.

H. Standard Reporting Requirements

1.) The Permittee shall submit an Annual Wastewater-Reuse Site Performance Report ("Annual Report") prepared by a competent environmental professional no later than **March 1st** of each year, which shall cover the previous reporting year. The Annual Report shall include an interpretive discussion of monitoring data (ground water, soils, hydraulic loading, wastewater etc.) with particular respect to environmental impacts by the facility. The Annual Report shall include ground water contour maps indicating depth to water, water table elevation, and direction of flow for each monitoring period, utilizing the monitoring wells specified in Appendix 1 of this permit.

2.) The annual report shall contain the results of the required monitoring as described in *Section G. Monitoring Requirements*. 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. Data collected in support of the daily operations of the treatment system shall not be included.

3.) The annual report shall contain a discussion of all noncompliance events, reported under Section I.7 of this permit, which occurred during the Reuse Reporting Year. The discussion shall include the cause of each noncompliance, the corrective actions implemented to reduce or eliminate each noncompliance, and whether or not each noncompliance has been corrected. For the noncompliance events that have not been corrected, the annual report shall present further corrective actions that will be implemented to reduce or eliminate the noncompliance, including an implementation plan and schedule for the corrective actions and an expected time period when the facility expects to return to compliance

4.) One copy of the annual report shall be submitted to the Engineering Manager in the Idaho Falls Regional DEQ Office.

Mr. Greg Eager, P.E.
Idaho Falls Regional Office
900 North Skyline, Suite B
Idaho Falls, Idaho 83402
(208) 528-2650

5.) Notice of completion of any work described in *Section E. Compliance Schedule for Required Activities* shall be submitted to the Department within 30 days of activity completion. The status of all other work described in Section E shall be submitted with the Annual Report.

6.) All laboratory reports containing the sample results for monitoring required by *Section G. Monitoring Requirements* of this permit shall be available for review upon request.

7.) The permittee agrees to provide to the Department the results of ground water radiological monitoring with respect to the MFC Industrial Waste Pond and Ditch (the HMU) that is performed to fulfill Department of Energy requirements under the Atomic Energy Act. The permittee agrees to provide the results with the Annual Report

8.) The permittee agrees to provide to the Department the results of radiological monitoring of the MFC effluent, prior to discharge into the HMU, with respect to the MFC Industrial Waste Pond and Ditch (HMU) that is performed to fulfill Department of Energy requirements under the Atomic Energy Act.

I. Standard Permit Conditions: Procedures and Reporting

1. The permittee shall at all times properly maintain and operate all structures, systems, and equipment for treatment, operational controls and monitoring, which are installed or used by the permittee to comply with all conditions of the permit or the Wastewater Reuse Permit Regulations, in conformance with a DEQ approved, current Plan of Operations (Operations and Maintenance Manual) which describes in detail the operation, maintenance, and management of the wastewater treatment system. This Plan of Operations shall be updated as necessary to reflect current operations.

2. Wastewater(s) or recharge waters applied to the land surface must be restricted to the premises of the application site unless permission has been obtained from the DEQ authorizing a discharge into the waters of the State as stated in IDAPA 58.01.16.

3. Wastewater must not create a public health hazard or nuisance condition as stated in IDAPA 58.01.16

4. All waste solids, including dredging and sludges, shall be utilized or disposed in a manner which will prevent their entry, or the entry of contaminated drainage or leachate there from, into the waters of the state such that health hazards and nuisance conditions are not created; and to prevent impacts on designated beneficial uses of the ground water and surface water. The permittee's management of waste solids shall be governed by the terms of the DEQ approved Waste Solids Management Plan, which upon approval shall be an enforceable portion of this permit.

5. 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 at least six months prior to the expiration date of the existing permit in accordance with the Wastewater Reuse Permit Regulations and include seepage tests on all lagoons per latest DEQ procedures.

6. The permittee shall allow the Director of the Idaho Department of Environmental Quality or the Director's designee (hereinafter referred to as 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.

7. 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 non-compliance with any permit condition or these regulations.
   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 in the permit by the Director (see below)

      DEQ Regional Office: see Permit Certificate Page
      Emergency 24 Hour Number: 1-800-632-8000

   d. In writing as soon as possible but within sixty (60) days of the date the permittee knows or should know of any non-compliance unless extended by the DEQ. This report shall contain:

      i. A description of the non-compliance and its cause;
      ii. The period of non-compliance including to the extent possible, times and dates and, if the non-compliance 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 non-compliance.

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.

9. 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.

10. The permittee shall determine (on an on-going basis) if any noxious weed problems relate to the permitted sites. Noxious weeds shall be controlled in accordance with the Idaho Code Title 22, Chapter 24. Also address these control operations in an update to the Operations and Maintenance Manual.

J. Standard Permit Conditions: Modifications, Violation, and Revocation

1. The permittee shall furnish to the Director within 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 regulations.

2. Both minor and major modifications may be made to this permit as stated in IDAPA 58.01.17.700.01 and 02 with respect to any conditions stated in this permit upon review and approval of the DEQ.

3. 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 DEQ 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 reports as described in Section I. *Standard Reporting Requirements*, and plans and specifications for the proposed changes. No such facility expansion, production increase or process modification shall be made until plans have been reviewed and approved by the DEQ and a new permit or permit modification has been issued.

4. 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.

5. Any person violating any provision of the Wastewater Reuse 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.

6. The Director may revoke a permit if the permittee violates any permit condition or the Wastewater Reuse Permit Regulations.

7. 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 request an administrative hearing in writing to the Board of Environmental Quality pursuant to the Rules of Administrative Procedures contained in IDAPA 58.01.23.

8. If, pursuant to Idaho Code 67-5247, 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, a revocation hearing before the Board of Environmental Quality shall be provided. Such hearings shall be conducted in accordance with the Rules of Administrative Procedures contained in IDAPA 58.01.23.

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.

10. The permittee shall notify the DEQ at least six (6) months prior to permanently removing any permitted reuse facility from service, including any treatment, storage, or other facilities or equipment associated with the reuse site. Prior to commencing closure activities, the permittee shall: a) participate in a pre-site closure meeting with the DEQ; b) develop a site closure plan that identifies specific closure, site characterization, or cleanup tasks with scheduled task completion dates in accordance with agreements made at the pre-site closure meeting; and c) submit the completed site closure plan to the DEQ for review and approval within forty-five (45) days of the pre-site closure meeting. The permittee must complete the DEQ approved site closure plan.

Appendix 1
Environmental Monitoring Serial Numbers

HYDRAULIC MANAGEMENT UNITS

Serial Number	Description	Acres
MU-016001	Industrial Waste Pond (IWP) and Ditch C.	3 (approximately)

WASTEWATER SAMPLING POINTS

Serial Number	Description
WW-016001	Composite sample of effluent in the Industrial Waste Pipeline prior to discharge into the Industrial Waste Pond. (see Fig. 2)
WW-016002	Grab sample of effluent discharging into Ditch C. (see Fig. 2)

GROUND WATER MONITORING

Serial Number	Description (Site dedicated monitoring)	Location
GW-016001	ANL-W-MON-A-012	Up gradient
GW-016002	ANL-W-MON-A-013	Down gradient
GW-016003	ANL-W-MON-A-014	Down gradient

Site Maps

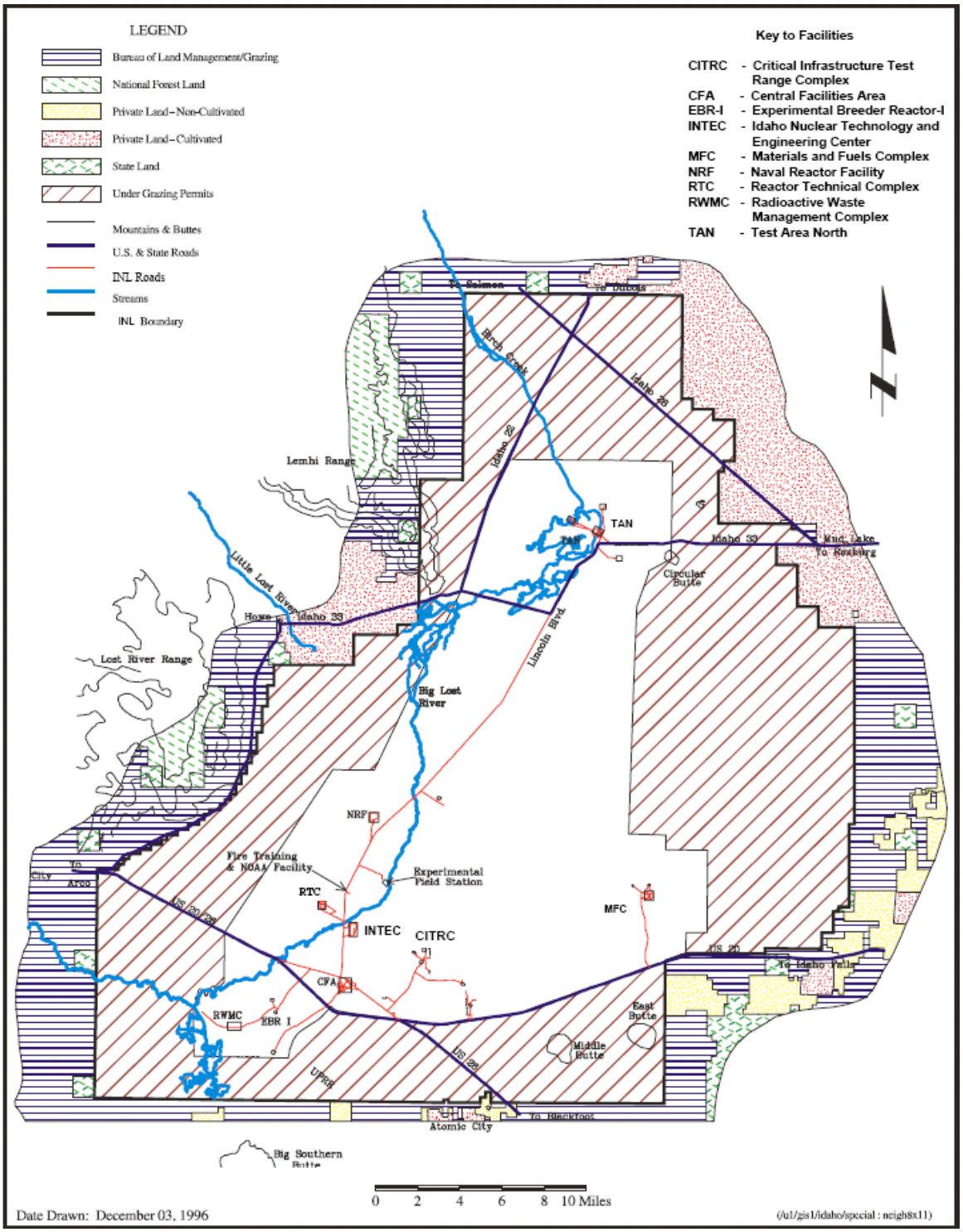

Figure 1 – INL Facility Map

Appendix 2
Site Maps

Industrial Waste Water System at the Materials and Fuels Complex

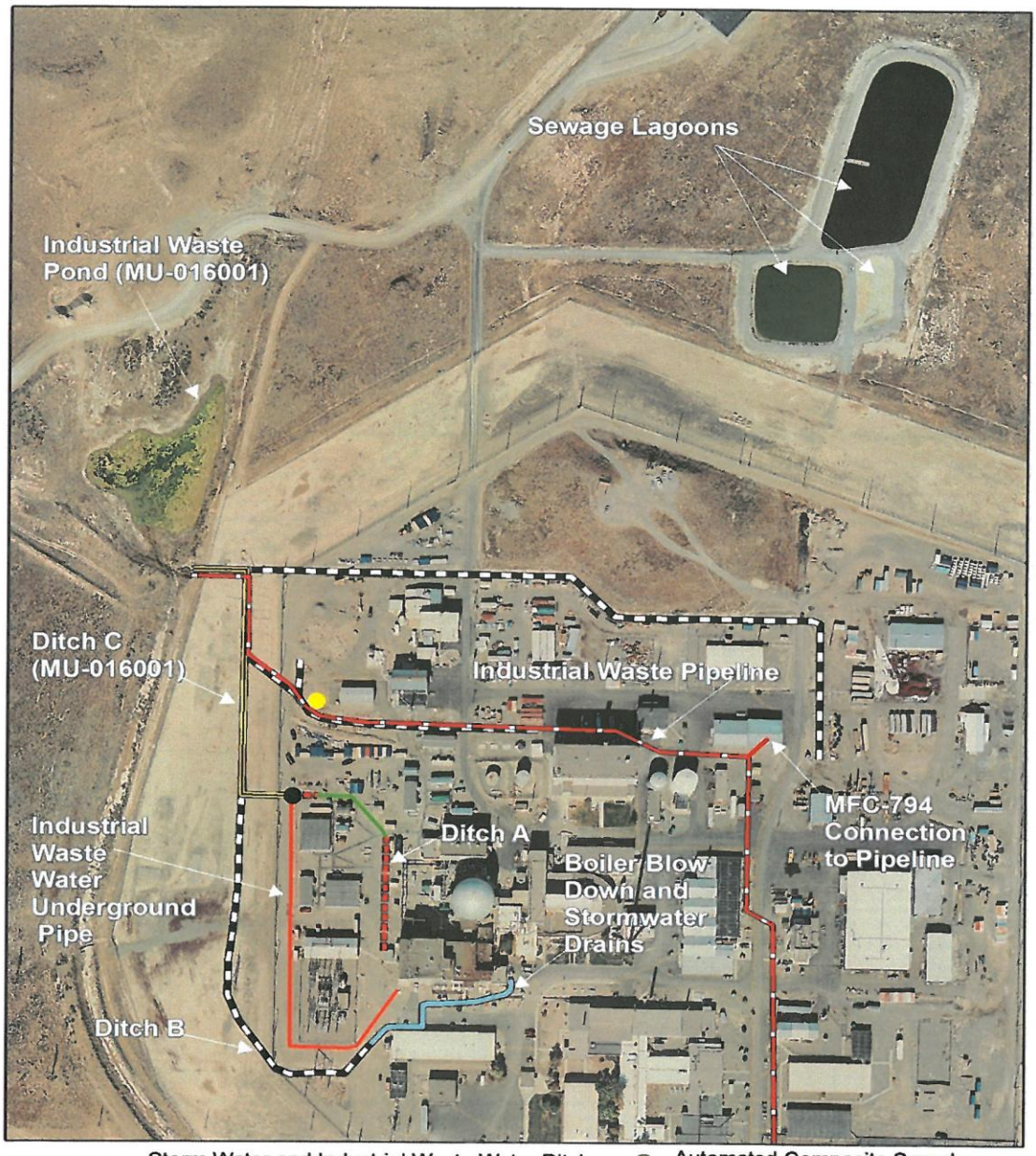

Figure 2. Updated MFC Facility Site Map including minor corrections and additional non-contact water inflow from building MFC-794.

Appendix 2
Site Maps

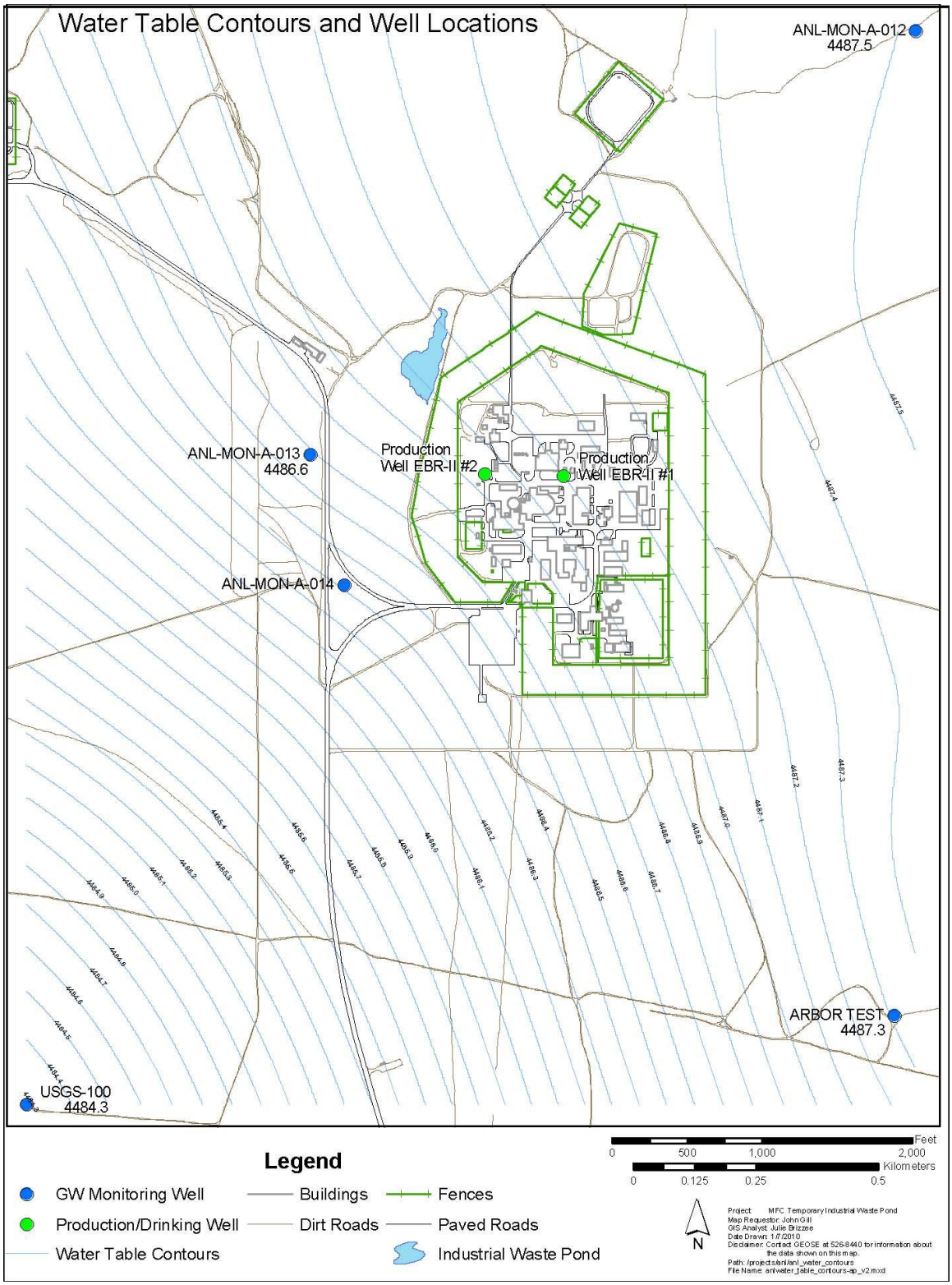

Figure 3 – MFC Groundwater Map