

A. Permit Certificate
MUNICIPAL WASTEWATER REUSE PERMIT
LA-000141-03

UNITED STATES 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 LOCATED AT IDAHO NATIONAL LABORATORY'S (INL) CENTRAL FACILITIES AREA (CFA) SEWAGE TREATMENT PLANT (STP), (TOWNSHIP 2 NORTH, RANGE 30 EAST, SECTION 6 AND TOWNSHIP 2 NORTH, RANGE 29 EAST, SECTION 1) 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 EFFECTIVE FROM THE DATE OF SIGNATURE AND EXPIRES ON March 16, 2015.



Erick Neher
Idaho Falls Regional Administrator
Idaho Department of Environmental Quality

Date Issued: 3-17-10

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY
Idaho Falls Regional Office
900 N. Skyline, Suite B
Idaho Falls, ID 83402
(208) 528-2650

POSTING ON SITE RECOMMENDED

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References

1. Plan of Operation (See Section E, CA-141-01).
2. Waste Solids Management Plan for the Central Facilities Area Sewage Treatment Plant, INL/EXT-06-01068, January 2006.
3. Runoff Management Plan for the Central Facilities Area Sewage Treatment Plant Land Application Area, INL/EXT-06-01067, January 2006.

The Sections, Appendices, and Attachments listed on this page are all elements of Wastewater Reuse Permit LA-000141-03 and are enforceable as such. This permit does not relieve the owner, **United States Department of Energy – Idaho Operations (DOE-ID)**, hereafter referred to as the permittee, or the operator, **Battelle Energy Alliance , LLC (BEA)**, from responsibility for compliance with other applicable federal, state or local laws, rules, standards or ordinances.

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C. Abbreviations, Definitions

Table 1. Abbreviations and Definitions

Ac-in	Acre-inch. The volume of water or wastewater to cover 1 acre of land to a depth of 1 inch. Equal to 27,154 gallons.
BEA	Battelle Energy Alliance, LLC
BMP or BMPs	Best Management Practices
CFA	Central Facilities Area
COD	Chemical Oxygen Demand
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
GS	Growing Season – Typically April 01 through October 31 (214 days)
GWQR	IDAPA 58.01.11 “Ground Water Quality Rule”
HLRgs	Growing Season Hydraulic Loading Rate. Includes any combination of wastewater and supplemental irrigation water applied to land application hydraulic management units during the growing season. The HLRgs limit is specified in Section F. <i>Standard Permit Limits and Conditions</i> .
HLRngs	Non-Growing Season Hydraulic Loading Rate. Includes any combination of wastewater and supplemental irrigation water applied to each hydraulic management unit during the non-growing season. The HLRngs limit is specified in Section F. <i>Standard Permit Limits and Conditions</i> .
HMU	Hydraulic Management Unit (Serial Number designation is MU)
IDAPA	Idaho Administrative Procedures Act.
INL	Idaho National Laboratory
LG	Lagoon
lb/ac-day	Pounds (of constituent) per acre per day
MG	Million Gallons (1 MG = 36.827 acre-inches)
MGA	Million Gallons Annually (per WLAP Reporting Year)
NGS	Non-Growing Season – Typically November 01 through March 31 (151 days)
O&M manual	Operation and Maintenance Manual, also referred to as the Plan of Operation
SAR	Sodium Absorption Ratio
SI	Supplemental Irrigation water applied to the land application treatment site.
SMU	Soil Monitoring Unit (Serial Number designation is SU)
STP	Sewage Treatment Plant
TDS	Total Dissolved Solids or Total Filterable Residue
USDOE	United States Department of Energy
USGS	United States Geological Survey
WW	Wastewater applied to the land application treatment site

D. Facility Information

Table 2. Specific Facility Information

Legal Name of Permittee	United States Department of Energy – Idaho Operations Office (DOE-ID) and Battelle Energy Alliance, LLC (BEA)
Type of Wastewater	Municipal and Industrial
Method of Treatment	Aerobic lagoon, facultative lagoon, slow-rate land application
Type of Facility	Federal (USDOE) Facility located at the Idaho National Laboratory (INL). This treatment system is associated with the INL Central Facilities Area (CFA).
Facility Location	The Central Facility Area of INL is located approximately 52 miles west of Idaho Falls, ID.
Legal Location	T2N, R29E, Section 1 and T2N, R30E, Section 6
County	Butte
USGS Quad	North of Scoville, ID (formerly Circular Butte 3 SW)
Soils on Site	Silty clay loam
Depth to Ground Water	The depth to the regional aquifer (Snake River Plain aquifer) is approximately 500 feet.
Beneficial Uses of Ground Water	Agricultural, industrial, domestic
Nearest Surface Water	Big Lost River, 3.8-miles northwest
Beneficial Uses of Surface Water	Irrigation
Responsible Officials Mailing Address Phone / Fax	<p>Raymond V. Furstenau, Deputy Manager U.S. Department of Energy – Idaho Operations Office Mail Stop 1203 1955 Fremont Avenue Idaho Falls, Idaho 83401-1203 Tel: (208) 526-0193 Fax: (208) 526-0982</p> <p>Dwayne E. Coburn, Director, Facility and Site Services Battelle Energy Alliance Mail Stop 3406 1955 Fremont Avenue Idaho Falls, Idaho 83415-3406 Tel: (208) 526-8688 Fax: (208) 526-4451</p>

D. Facility Information

Facility Contacts Mailing Address Phone / Fax	<p>Richard Kauffman, Environmental Technical Support U.S. Department of Energy – Idaho Operations Office Mail Stop 1216 1955 Fremont Avenue Idaho Falls, Idaho 83401-1216 Tel: (208) 526-7177 Fax: (208) 526-1926</p> <p>Jo Anna Stenzel, Director, Environmental Support and Services Battelle Energy Alliance, LLC Mail Stop 3405 1955 Fremont Avenue Idaho Falls, Idaho 83415-3405 Tel: (208) 526-8496 Fax: (208) 526-3149</p>
Additional Facility Information	<p>The Department of Energy is a federal agency of the Executive Branch. By applying for, and accepting this WLAP, 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.</p> <p>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 wastewater land application activities authorized by this permit.</p>

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.

Table 3. Compliance Activities

Compliance Activity Number Completion Date	Compliance Activity Description
CA-141-01 Within 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 Plan shall include a description of approved sample collection methods, appropriate analytical methods and companion QA/QC protocol. The manual may reference other written procedures required for the operation and maintenance of the wastewater reuse facility.
CA-141-02 May 31, 2014	Submit a Seepage Testing Procedure to DEQ for review and approval for the three wastewater treatment lagoons. The Procedure shall describe the testing procedures, equipment, measurement methods, and calculation methodology conclusions for DEQ review and approval.
CA-141-03 August 31, 2014	Upon DEQ approval of the Seepage Testing Procedure (CA-141-02, above), the permittee shall complete seepage testing of CFA STP lagoons 1 through 3 and submit a Seepage Test Results Report to DEQ no later than August 31, 2015 for review and approval.

F. Permit Limits and Conditions

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

Table 4. Permit Limits and Conditions

Category	Permitted Limits and Conditions
Type of Wastewater	Class E Municipal and Industrial Wastewater
Application Site Area	73.5 acres
Application Season	April 1 through October 31. Land Application during the Non-Growing Season is not allowed.
Growing Season (GS)	GS – April 1 through October 31 (214 days).
Non-Growing Season (NGS)	NGS – November 1 through March 31 (151 days).
Reporting Year for Annual Loading Rates	November 1 through October 31.
Maximum Hydraulic Loading Rate, Growing Season (wastewater only)	37.00 Million Gallons (MG) may be applied on the 73.5 acre HMU, and shall not exceed 18.5 inches/acre . Wastewater shall be applied as evenly as practicable to the entire land application site.
Supplemental Irrigation	Application of supplemental (fresh) irrigation water is prohibited.
Disinfection	Not Required
Runoff	Runoff shall be managed in accordance with the most recent Runoff Management Plan approved by DEQ.
Ground Water Quality	As a result of the operation of the wastewater land treatment system authorized by this permit, the permittee shall be in compliance with the Ground Water Quality Rule (GWQR), IDAPA 58.01.11.
Grazing	Grazing of domesticated animals within the land application site is prohibited.
Allowable crops	Cultivation of crops grown for human consumption is prohibited.

F. Permit Limits and Conditions

Category	Permitted Limits and Conditions
Fencing and Posting	<p>Fencing is not required.</p> <p>Posting shall state "Sewage Effluent Application – Keep Out", or equivalent. Posting required every 500 feet and at each corner of the outer perimeter of the buffer zone(s) at the site. Posting shall be visible and legible from outside of the wastewater application perimeter.</p>
Buffer Zones	<p>The CFA STP effluent is not disinfected. Therefore, the following minimum buffer zone distances shall be provided between land application areas and the following items:</p> <p>Domestic Water Wells: 500 ft. Public Water Wells: 1000 ft Surface Water: 100 ft Public Access Areas: 1000 ft</p>
Construction Plans	<p>Prior to construction or modification of all wastewater facilities associated with the land application system or expansion, 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 to DEQ or submit a certification letter stating that all construction was done in substantial compliance with the DEQ approved plans and specifications.</p>

G. Monitoring Requirements

- 1) 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-141-01).
- 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, influent and 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. When effluent flow periods are less than 24 hours, an appropriate number of flow-proportioned aliquot samples shall be collected to yield a representative sample. The number of samples necessary for adequate sampling shall be described in the Plan of Operation (See Section E, CA-141-01).
- 5) If the soil management unit is less than 15 acres, use 5 sample locations. If the soil management unit is greater than 15 acres, use 10 sample locations. All soil sample collection locations shall be randomly identified within the soil management unit.
- 6) Three (3) soil samples shall be collected at each sample location, one at 0-12 inches, one at 12-24 inches, and one at 24-36 inches, or refusal. The soil samples collected at 0-12 inches from each sample location shall be composited. Similarly, all soil samples collected at 12-24 inches shall be composited and all soil samples collected at 24-36 inches shall be composited. This method will yield three samples for analysis, one for 0-12 inches, one for 12-24 inches and one for 24-36 inches.
- 7) Reporting of monitoring requirements is described in Section H, Standard Reporting Requirements.
- 8) Monitoring locations are defined in Appendix 1, "Environmental Monitoring Serial Numbers".

Table 5. Facility Monitoring

Frequency	Monitoring Point	Description and Type of Monitoring	Parameters
Daily (when land applying)	Discharge Point of Wastewater effluent to Land Application (Flow Meter)	Volume of Wastewater Land Applied	Gallons per Day (gpd)
Monthly (when land applying)	Effluent to Land Application	Grab sample	pH, Total Coliform (CFU/100ml)

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G. Monitoring Requirements

Frequency	Monitoring Point	Description and Type of Monitoring	Parameters
Monthly (when land applying)	Effluent to Land Application	24-hour composite sample	Total Kjeldahl Nitrogen, Nitrate + Nitrite - Nitrogen, Chemical Oxygen Demand, Total Dissolved Solids, Total Phosphorus
Monthly	HMU	Calculation – Wastewater Hydraulic Loading. Compile Monthly and Annual Totals for Annual Report.	Volume to HMU (MG and in/ac)
Monthly	HMU	Calculation – Wastewater Constituent Loading per acre. Compile Monthly and Annual Totals for Annual Report.	Total Nitrogen, Total Phosphorus, Chemical Oxygen Demand, Total Dissolved Solids (lb/ac)
October 2010 and October 2013	SMU	Soil Composites as specified in Section G, No. 6.	Ammonium-Nitrogen, Nitrate-Nitrogen, Electrical Conductivity, Sodium Absorption Ratio, pH, %Organic Matter, plant available phosphorus (Olsen Method)

H. Standard Reporting Requirements

- 1.) The Permittee shall submit an Annual Wastewater-Land Application 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 from November 1 through October 31. The Annual Report shall include an interpretive discussion of monitoring data (soils, hydraulic loading, wastewater etc.) with particular respect to environmental impacts by the facility.
- 2.) The annual report shall contain the results of the required monitoring as described in *Section G. Monitoring Requirements*. The permittee shall summarize and submit all monitoring data generated by the facility as specified in *Section G* to the Department with the annual report. If the permittee monitors any parameter for compliance purposes more frequently than required by this permit, the results of the additional compliance monitoring shall be included in this summary and submitted in the annual report. Data collected in support of the daily operation 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 WLAP 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 at the Idaho Falls Regional DEQ Office.

Greg Eager, P.E.
Idaho Falls Regional Office
900 N. Skyline, Suite B
Idaho Falls, ID 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.

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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 Rules, 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. Wastewater discharges to surface water that require a permit under the Clean Water Act must be authorized by the U.S. Environmental Protection Agency.
3. Wastewater must not create a public health hazard or nuisance condition as stated in IDAPA 58.01.16.600.03. In order to prevent public health hazards and nuisance conditions the permittee shall:
 - a. Apply wastewater as evenly as practicable to the treatment area;
 - b. Prevent organic solids (contained in the wastewater) from accumulating on the ground surface to the point where the solids putrefy, or support vectors; and
 - c. Prevent wastewater from ponding in the fields to the point where the ponded wastewater putrefies or supports vectors or insects.
4. The permittee shall not hydraulically overload any particular area of the wastewater land application treatment site.
5. All waste solids, including dredgings and sludges, shall be utilized or disposed in a manner which prevents their entry, or the entry of contaminated drainage or leachate therefrom, into state waters 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. If waste solids are generated by the permittee, a Waste Solids Management Plan shall be submitted to the Department for review and approval. 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.
6. 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 Rules and include recent (within 12 months) seepage tests on all lagoons per latest DEQ procedures (See Section E, CA-141-02 and CA-141-03).
7. 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.
8. 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.

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I. Standard Permit Conditions: Procedures and Reporting

- 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 Certification 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 Idaho Code Title 22, Chapter 24. Also address these control operations in an update to the Plan of Operation.

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J. Standard Permit Conditions: Modifications, Violations, and Revocations

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 H. *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 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.
6. The Director may revoke a permit if the permittee violates any permit condition or the Wastewater Reuse Rules.
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 requests an administrative hearing in writing to the Board of the Department of Environmental Quality pursuant to the Rules of Administrative Procedures contained in IDAPA 58.01.23.
8. If, pursuant to Idaho Code Section 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 the Department 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 land application facility from service, including any treatment, storage, or other facilities or equipment associated with the land application 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.

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Appendix 1
Environmental Monitoring Serial Numbers

Table 6. HYDRAULIC MANAGEMENT UNITS

Serial Number	Description	Acres
MU-014101	Land Application Site	73.5

Table 7. WASTEWATER SAMPLING POINTS

Serial Number	Description
WW-014102	Grab sample and 24-hour composite sample of effluent discharge to land application site, but not after the pump well.

Table 8. SOIL MONITORING UNITS

Serial Number	Description	Associated MU
SU-014101	Land Application Site, 73.5 acres	MU-014101

Table 9. LAGOONS

Serial Number	Description
LG-014101	Lagoon no. 1; Aeration lagoon
LG-014102	Lagoon no. 2; Facultative lagoon
LG-014103	Lagoon no. 3; Polishing lagoon

Appendix 2 Site Maps

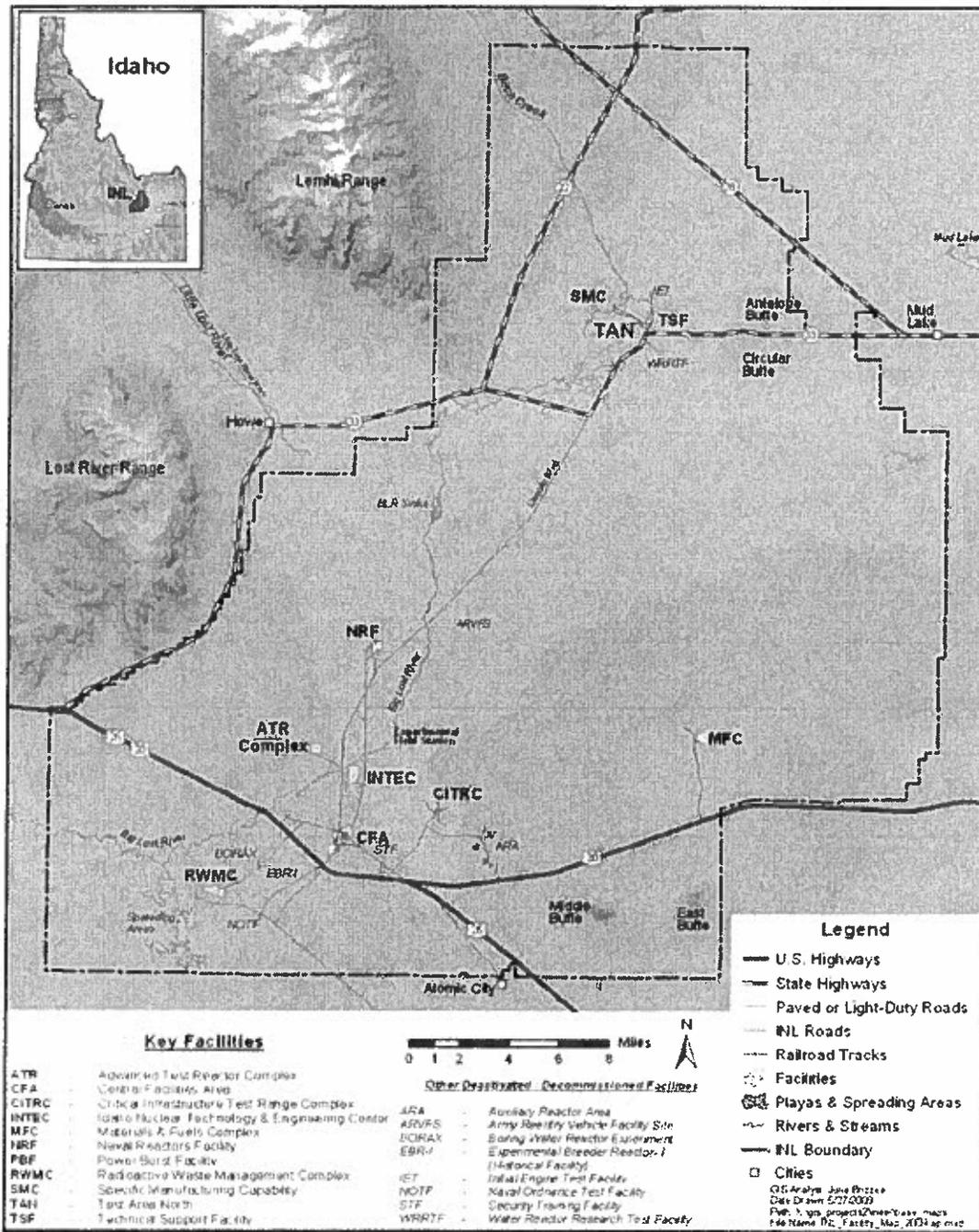


Figure 1. Idaho National Laboratory major facility areas.

Appendix 2 Site Maps

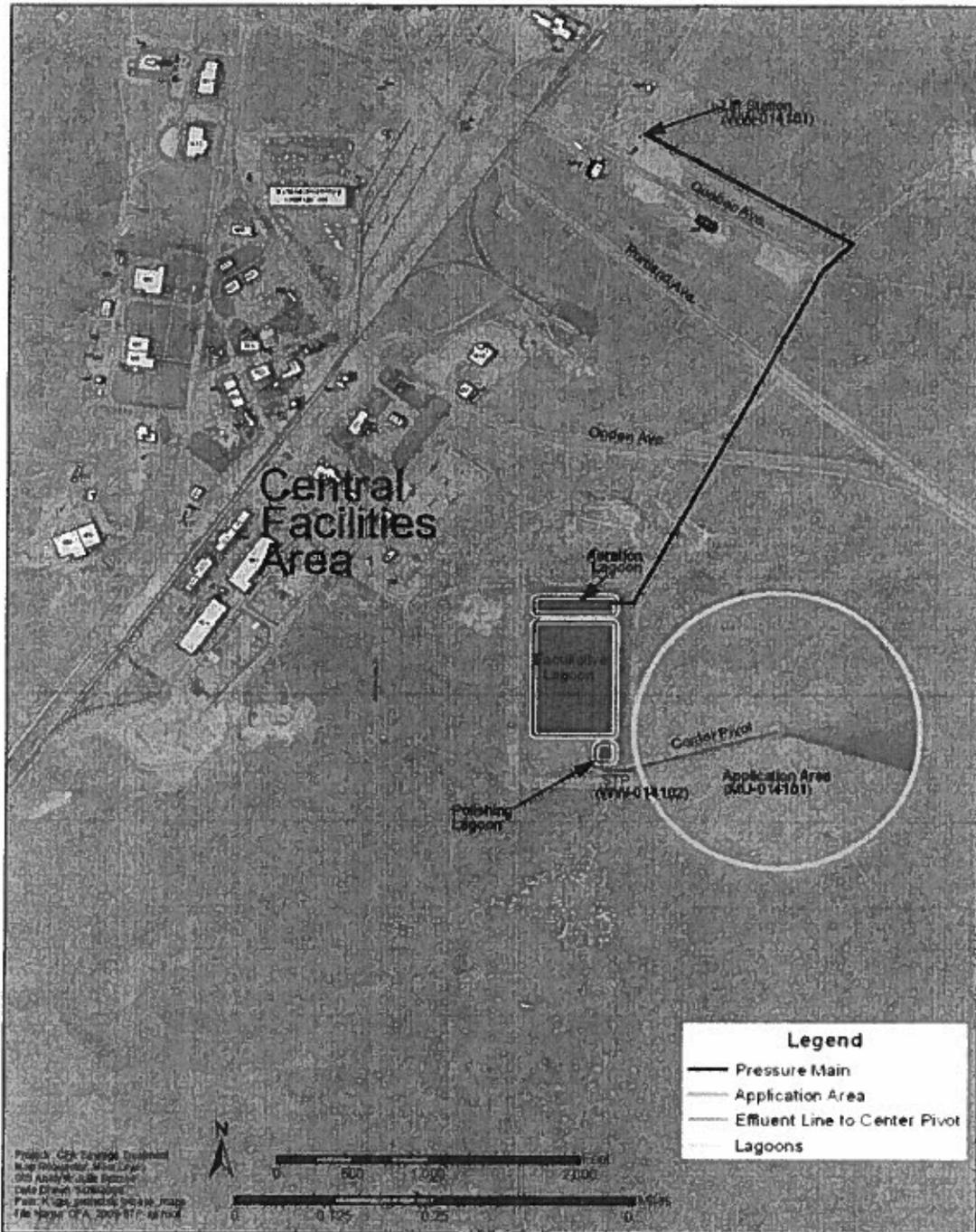


Figure 2. CFA STP monitoring locations, lagoons and land application site.

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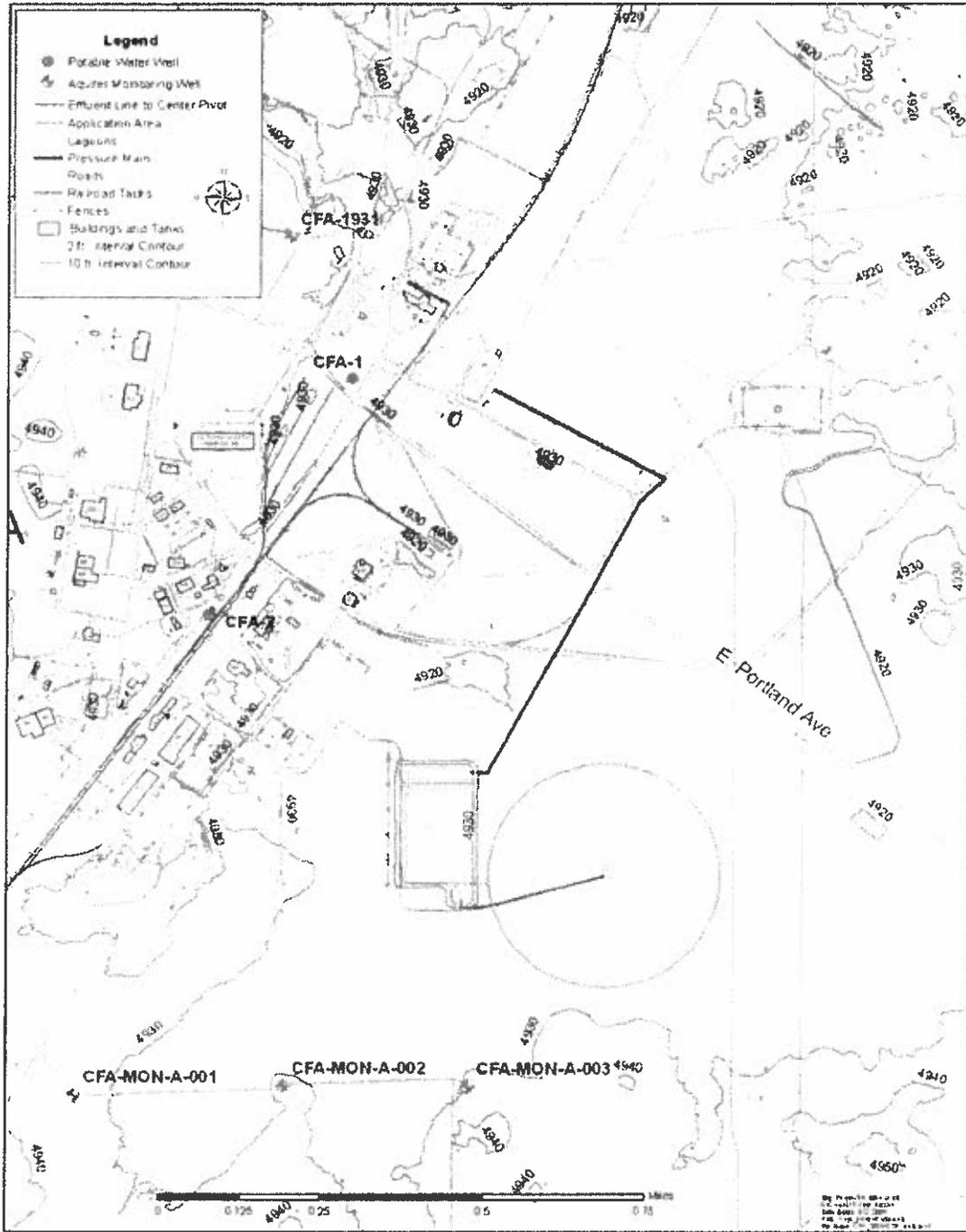


Figure 3. Locations of monitoring and potable production wells near the CFA STP.

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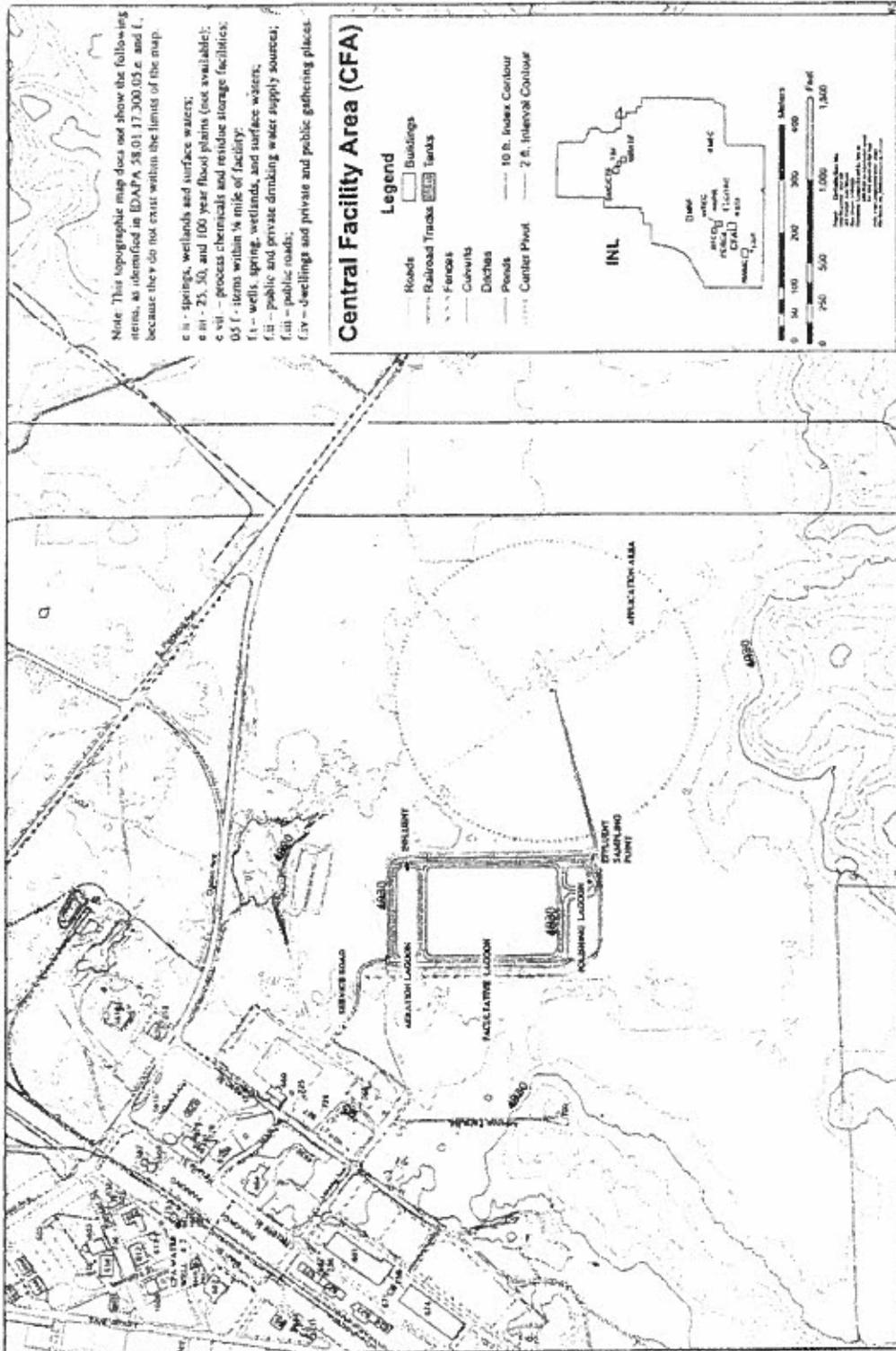


Figure 4. CFA STP Topography.

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Appendix 2 Site Maps

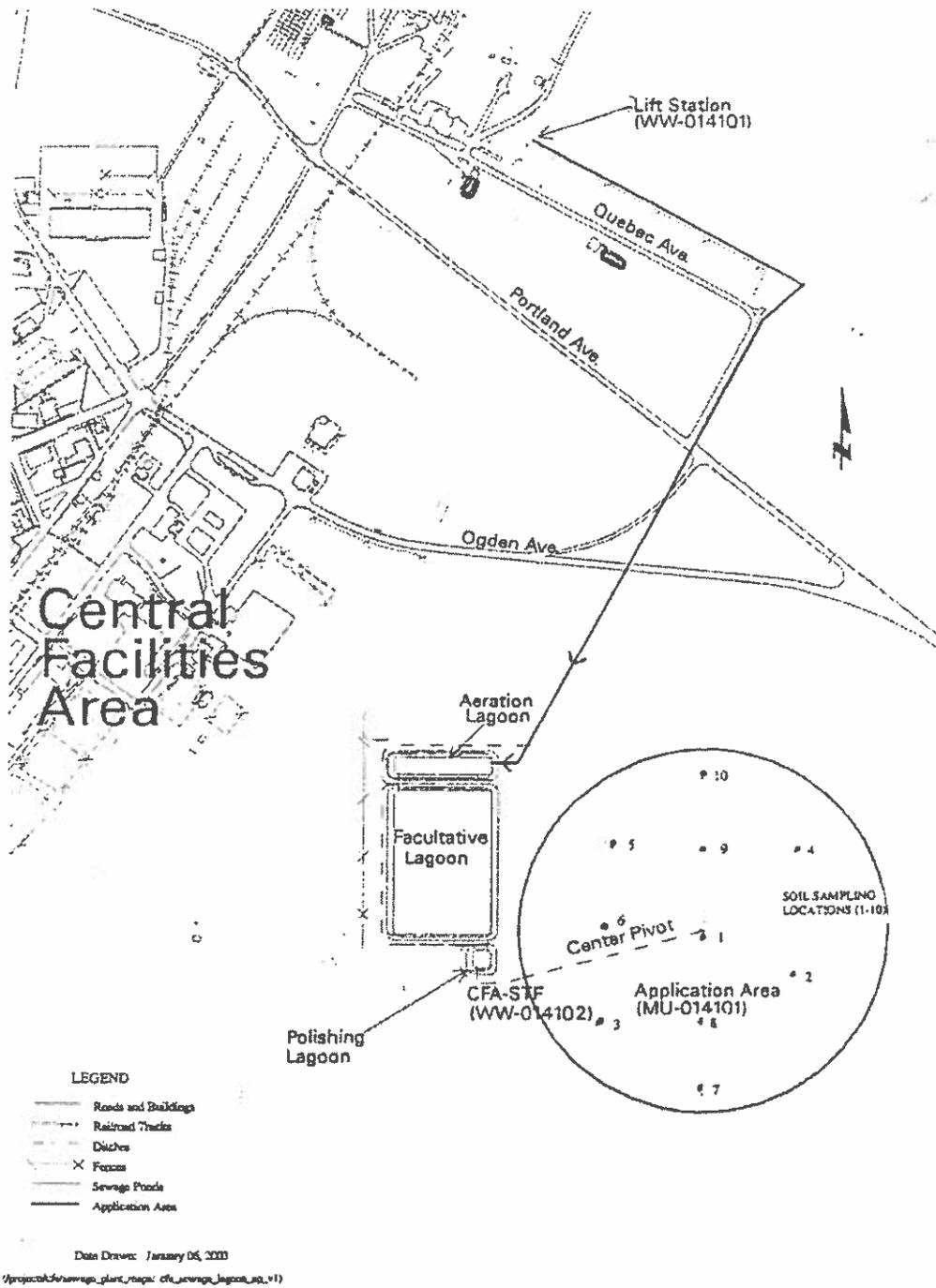


Figure 5. CFA wastewater and soil sampling locations.

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Appendix 2 Site Maps

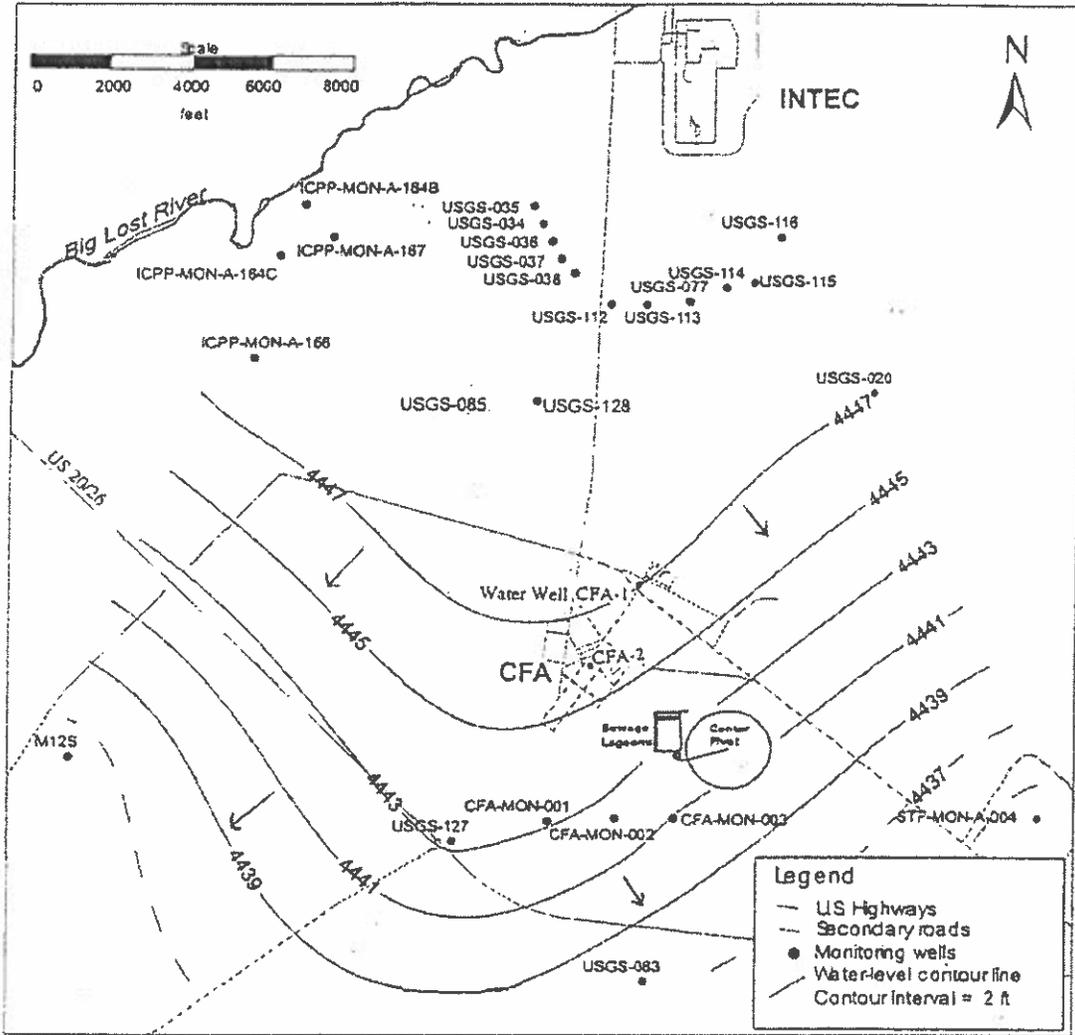


Figure 6. Ground water contours near CFA STP.

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