A. TOBLIN STAFF EXHIBIT 4

NIRS/PC EC-1

State of New Mexico
ENVIRONMENT DEPARTMENT
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GROUND WATER DISCHARGE PERMIT APPLICATION

Enclosed is a Ground Water Discharge Permit Application Form (Form) and checklist. Section 20.6.2.3104 NMAC of the NM Water Quality Control Commission Regulations (20.6.2 NMAC) requires that any person proposing to discharge effluent or leachate so that it may move directly or indirectly into ground water must have an approved discharge permit, unless a specific exemption is provided for in the Regulations. The enclosed Form is a general guideline for use by applicants to ensure that an application is complete and provides all of the information required by sections 20.6.2.3106, 20.6.2.3107, 20.6.2.3108, and 20.6.2.3109 NMAC.

Mail **three complete copies** of your application with a **$100 filing fee** check made payable to the New Mexico Environment Department (NMED) at the address below:

Maura Hanning, Program Manager
Ground Water Pollution Prevention Section
NM Environment Department
P. O. Box 26110
Santa Fe, NM 87502

Pursuant to Regulation 20.6.2.3108 NMAC, NMED will, within thirty (30) days of deeming the application administratively complete, publish a public notice and allow 30 days for public comment before taking final action on a discharge permit. A public hearing will be held if NMED determines that there is significant public interest. It takes approximately180 days to process a complete application and issue a discharge permit if no public hearing is held.

All applications must be accompanied by a filing fee of $100. **An additional fee will be assessed prior to permit issuance** to cover the estimated cost to the NMED for investigation, and, issuance of the permit. **Permit fees are listed in the Regulation 20.6.2.3114 NMAC.**

If you have any questions about this discharge permit application, call the Ground Water Pollution Prevention Section at 505-827-2900

NEF site. Effluent is not treated prior to release. If required, all storm water discharges will be regulated by a National Pollutant Discharge Elimination System (NPDES) Storm Water Permit, including a General Permit for construction and a Multi Sector General Stormwater Permit for facility operations.

The **Uranium Byproduct Cylinder (UBC) Storage Pad Storm Water Retention Basin** is utilized for the collection and containment of water discharges from three sources: (1) cooling tower blowdown discharges, (2) storm water runoff from the UBC Storage Pad and (3) heating boiler blowdown. The ultimate disposal of basin water will be through evaporation of water and impoundment of the residual dry solids after evaporation. It is designed to contain runoff for a volume equal to twice that for the 24-hour, 100-year return frequency storm, a 15.2-cm (6.0-in) rainfall plus an allowance for cooling tower and heating boiler blowdown water. The UBC Storage Pad Storm Water Retention Basin is designed to contain a volume of approximately 77,700 m^3 (63 acre-ft). Area served by the basin includes 9.2 ha (22.8 acres), the total area of the UBC Storage Pad. This basin is designed with a membrane lining to minimize any infiltration into the ground. To provide adequate chemical resistance to the various liquids, the liner material may consist of High Density Polyethylene (HDPE) or Ethylene Interpolymer Alloy (Coolgard ® XR-5® or Ultra Tech®). Liner thickness will be specified during final design. Effluent is not treated prior to release to the basin. The basin liner will comply with the NM Environment Department Ground Water pollution Prevention Sections, Guidelines for Liner Material and Site Preparation for Synthetically Lined Lagoons, December 11, 1995. The basin does not have an outlet.

Cooling Tower blowdown composition: pH will be in the range of 6.5 to 9.0, dissolved constituents with the exception of bicarbonate and sulfate will be those present in the potable water supply at a concentration factor of approximately 3 times. Sulfate will be higher and bicarbonate will be lower than three times the potable water concentrations due to the addition of sulfuric acid to the cooling water for pH adjustment to prevent carbonate scaling. Oxidizing biocide, corrosion inhibitor and dispersant chemical constituents will also be present as dissolved components of cooling tower blowdown.

Typical blowdown concentrations will be as follows:

Phosphate = 4-12 ppm
Epoxy carboxylate = 4-8 ppm
Hydroxyl sulfurate polymer = 5-10 ppm
Copper inhibitor HRA = 2-4 ppm

Typical chemicals used in cooling tower water treatment are as follows:

96% Sulfuric Acid
Continuum AEC3109
Liquid Bromine

Heating Boiler blowdown contains potential concentrations of sulfites (50 ppm), neutralizing amine (10 ppm), phosphate (30 ppm), and polymer (40 ppm).

Discharge of routine plant liquid effluents will be to the **Treated Effluent Evaporative Basin** on the site. The Treated Effluent Evaporative Basin is utilized for the collection and containment of waste water discharge from the Liquid Effluent Collection and Treatment System. The ultimate disposal of

4.b. **Quality:** Add rows as necessary to include all contaminants and toxic pollutants.

Contaminant(s) or Toxic Pollutant(s) generally associated with facility type (contaminants of concern are listed in 20.6.2.7. and 20.6.2.3103 NMAC)	**Influent Concentration (mg/L)**	**Effluent Concentration (mg/L)**
SSDB:		
Total Dissolved Solids (TDS)	Note 1	Note 2
USPSRB:		
Total Dissolved Solids (TDS)	Note 3	Not Applicable
TEEB:		
Total Dissolved Solids (TDS)	Note 4	Not Applicable
Uranium	0.225	Not Applicable
ST/L:		
Total Dissolved Solids (TDS)	Note 5	Not Applicable

Notes:

1. Concentrations will be measured as part of sampling program. LES will provide this information to NMGWQB after initial sampling. They will be typical of industrial storm water runoff prior to settling basin.
2. Concentrations will be measured as part of sampling program. LES will provide this information to NMGWQB after initial sampling. They will be typical of industrial storm water runoff after settling basin.
3. Concentrations will be measured as part of sampling program. LES will provide this information to NMGWQB after initial sampling. For storm water component, they will be typical of industrial storm water runoff prior to settling basin. Blowdown TDS will range from 3 to 5 times the potable water supply obtained from the City of Hobbs.
4. Concentrations will be measured as part of sampling program. LES will provide this information to NMGWQB after initial sampling.
5. Concentrations will be typical of sanitary wastes.

4.c. Flow Characteristics:

Number of days per week discharge occurs:	SSDB: 7 days (Note 1) USPSRB: 7 days (Note 2) TEEB: 7 days (Note 3) ST/L: 7 days
Number of months per year discharge occurs (specify months):	12
Is flow continuous or intermittent:	SSDB: Intermittent USPSRB: Intermittent for storm water and for blowdown TEEB: Intermittent (periodic batch releases) ST/L: Continuous

6. Permit Plans [20.6.2.3106.C.7, 20.6.2.3107.A, and 20.6.2.3109.C NMAC]:

6.a. Operational Plan [20.6.2.3106.C.7 and 20.6.2.3109.C NMAC]:

The operational plan must describe how the system(s) for conveyance, collection, treatment, distribution, and disposal of wastewaters or other discharges will be constructed, operated, inspected, and maintained. The operational plan must demonstrate that ground water standards will not be exceeded.

6.a.i. In the following table, identify all proposed conveyance, collection, treatment distribution, and disposal units included in the operational plan. Add rows as necessary to include all units.

Treatment/Storage/ or Disposal Unit **Treatment units** (lagoon, mechanical treatment plant, manure separator, clarifier, etc.) **Disposal Units** (land application area, leachfield, evaporative lagoon, leachstockpile, etc.)	**Construction Material**	**Volumetric Capacity*/Area*** (gallons or cubic yards/ acres)
Disposal Unit: Site Storm Water Detention Basin (SSDB) – The ultimate disposal of basin water (site storm water runoff) will be through infiltration to the ground and evaporation.	The basin will be constructed using a combination of excavation below the ground surface and an earth berm above grade. The basin is unlined. The basin will have a minimum of 2 feet of freeboard. The basin will have an outfall. The outfall will consist of a concrete structure with a discharge pipe sized and located to provide the proper flow attenuation. The basin will be maintained free of debris and will be enclosed by a fence to prevent entry by animals and unauthorized personnel.	The basin is sized to contain runoff for a volume equal to that for the 24-hour, 100-year return period storm. The basin will have approximately 23,350 m^3 (100 acre-ft) of storage capacity. Surface Area at High Water Elevation = 19.0 acres.
Disposal Unit: UBC Storage Pad Storm Water Retention Basin (USPSRB) – The ultimate disposal of basin water (UBC Storage Pad storm water runoff, Cooling Tower blowdown and Heating Boiler blowdown) will be through evaporation.	The basin will be constructed using a combination of excavation below the ground surface and an earth berm above grade. The basin is designed with a synthetic membrane lining to minimize any infiltration into the ground and does not have an outlet. The synthetic liner will be used to impose a barrier between the contents of the basin and the underlying soils and potential access to ground water. Access to any ground water is further impeded by the impervious clay layer underlying the liner. The basin liner will be selected and installed in accordance with NMED Guidelines for Liner Material and Site Preparation for Synthetically-Lined Lagoons, dated December 11, 1995. To provide adequate chemical resistance to the various liquids, the liner material may consist of High Density Polyethylene (HDPE) or Ethylene Interpolymer Alloy (Coolgard ® XR-5® or Ultra	The basin is sized to contain runoff for a volume equal to twice that for the 24-hour, 100-year return frequency storm. The design volume is approximately 77,700 m^3 (63 acre-ft). Surface Area at High Water Elevation = 18.9 acres.

	Tech®). Liner thickness will be specified during final design. From the bottom up the proposed liner system will consist of: • A prepared layer, minimum 2-foot thick, of on site clay-type soils, free from rock, compacted at optimum moisture content to 95% of Standard Proctor ASTM D698. The plastic limit of the clay will be approximately 20 and the material will be compacted to +3% of it's optimum moisture content. • A geosynthetic fabric suitable for the material being retained. • A prepared layer, minimum 1-foot thick, of on site clay, free of rock, and compacted at optimum moisture content • Installation of the liner will be by manufacturer certified installers and will be installed and tested according to project specifications. The basin will be maintained free of debris and will be enclosed by a fence to prevent entry by animals and unauthorized personnel.	
Disposal Unit: Treated Effluent Evaporative Basin (TEEB) – The ultimate disposal of liquid effluent from the Liquid Effluent Collection and Treatment System will be through evaporation.	The basin will be constructed using a combination of excavation below the ground surface and an earth berm above grade. The basin will be double-lined and provided with a leak detection system. The two synthetic liners are used to impose two barriers between the contents of the basin and the underlying soils and potential access to ground water. Access to any ground water is further impeded by the impervious clay layer underlying the liner. These synthetic liners are known as the primary (upper) and secondary (lower) liner. The basin is designed with a synthetic membrane lining to preclude any infiltration into the ground. The basin does not have an outlet. The basin liner will be selected and installed in accordance with NMED Guidelines for Liner Material and Site Preparation for Synthetically-Lined Lagoons, dated December 11, 1995. Access to ground water is further impeded by the impervious clay layer which underlies the secondary liner. Active liquid-sensor leak detection will be provided to detect leakage through the upper primary liner. The system is a drain/sump system. The chemical compatibility of the liners has been	Total annual discharge will be approximately 2,535 m^3 per year (669,844 gal/yr). The basin has a surface area of 0.75 acres and a maximum normal operating depth of 1.1 feet above the bottom of the basin. Total basin depth is 4.2 feet. Surface Area at High Water Elevation = 1.75 acres