BUREAU OF LAND MANAGEMENT
PLAN OF OPERATIONS
SHEEP MOUNTAIN

Prepared for:

Titan Uranium, USA Inc.

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June 2011

Book 1 of 2

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BLM Sensitive Species Report for Vegetation

Legal Description of 381C Permit and Amendments

Part 1 - Operator Information

Operator: Titan Uranium USA Inc.

Address: 2510 E 15th St., Suite #7
Casper, Wyoming 82609

Phone Number: 1-307-265-6664

Point of Contact: Gregory Adams, VP US Operations

1.1 MINE PERMIT

Active Mine Permit: Wyoming Department of Environmental Quality (WDEQ)
Mine Permit Number 381C.

(a) Mine Permit Number 381C issued 8/15/1975 – Western Nuclear
Amendment A-1 issued 12/2/1975
Amendment A-2 issued 5/30/1978
Amendment A-3 issued 6/29/1979
Amendment A-4 issued 9/25/1981
Amendment A-5 issued 11/16/1982

Transferred to USE/CC on 6/14/1988
Transferred to Uranium One on 6/25/2007
Transferred to Titan Uranium USA Inc. (Titan) on 10/1/2009

(b) Issued for the mining of uranium oxide.

1.2 MINERAL HOLDINGS

Mineral Holdings: State and Federal Mineral Lease Numbers include the following:

(a) State of Wyoming Mineral Lease, ML 0-15536.

(b) Unpatented BLM Claims, CHRISTIE 4-E, CINDY 1D, GOLDEN GOOSE 1D to 4D, HIGHLAND 4D to 7D, JAMIE 1 to 23 and 27 to 33, FRANKIE 1, KEY 1D to 4D, 5C, and 6D to 8D, LAST CHANCE 1D, LOUISE 1-D, MIKE A, NH 1-D to 4-D, NEW SHEEP 1, PAY DIRT 6, 7, 12D and 13C, POORBOY # 1D, SM-1 to 28, SNOWBALL 1 to 4, and 6 to 8, SUN 3C, 4C and 5-D, SUNDOG 2D, 17C to 19C, 20D, 21C and 22C, SUNDOG NO. 3 and 16B, SUSAN JAMES 4D, TREY 1 and 2, TREY JR 1D, and ZEB 1C to 4C, 5D and 6D.

Project Overview Item 1

Federal Tax Identification Number

Titan Uranium USA: EIN# - [redacted]

Project Overview Item 2

BLM Serial Numbers of Unpatented Mining Claims within WDEQ Mine Permit 381C

Serial No.	Claim Name/Number				
WMC261466	Christie 4-E	WMC300879	Jamie-33	WMC260795	SM #27
WMC261467	Cindy 1-D	WMC248332	Key #1D	WMC260796	SM #28
WMC300863	Frankie-1	WMC248333	Key #2D	WMC260775	SM #3
WMC169177	Golden Goose #2	WMC248334	Key #3D	WMC260776	SM #4
WMC247090	Golden Goose #3C	WMC248335	Key #4D	WMC260777	SM #5
WMC261469	Golden Goose #4-D	WMC247103	Key #5C	WMC280500	SM #6
WMC261468	Golden Goose 1-D	WMC248336	Key #7D	WMC260778	SM #7
WMC261472	Highland 6-D	WMC261478	Key 6-D	WMC260780	SM #9
WMC261473	Highland 7-D	WMC261479	Key 8-D	WMC260779	SM# 8
WMC261470	Highland No. 4-D	WMC299476	Last Chance 1D	WMC303909	SM-8A
WMC261471	Highland No. 5-D	WMC261480	Louise No. 1-D	WMC297417	Snoball 4
WMC299462	Jamie 1	WMC261481	Mike-A	WMC297419	Snoball 6
WMC299471	Jamie 10	WMC275870	New Sheep #1	WMC247120	Sun #3C
WMC299472	Jamie 11	WMC304801	New Sheep 2	WMC247121	Sun #4C
WMC299473	Jamie 12	WMC261474	NH 1-D	WMC261489	Sun 5-D
WMC299474	Jamie 13	WMC261475	NH 2-D	WMC247130	Sundog #17C
WMC299475	Jamie 14	WMC261476	NH 3-D	WMC247131	Sundog #18C
WMC299463	Jamie 2	WMC261477	NH 4-D	WMC247132	Sundog #19C
WMC299464	Jamie 3	WMC248331	Paydirt #12D	WMC247134	Sundog #21C
WMC299465	Jamie 4	WMC247108	Paydirt #13C	WMC247135	Sundog #22C
WMC299466	Jamie 5	WMC261482	Poorboy #1D	WMC261491	Sundog 20-D
WMC299467	Jamie 6	WMC260773	SM #1	WMC261490	Sundog 2-D
WMC299468	Jamie 7	WMC260781	SM #10	WMC261492	Susan James 4-D
WMC299469	Jamie 8	WMC260782	SM #11	WMC297422	Trey 1
WMC299470	Jamie 9	WMC260783	SM #12	WMC297423	Trey 2
WMC300864	Jamie-15	WMC260784	SM #13	WMC261495	Trey Jr. 1-D
WMC300865	Jamie-16	WMC260785	SM #14	WMC247141	Zeb #1C
WMC300866	Jamie-17	WMC260786	SM #15	WMC247142	Zeb #2C
WMC300867	Jamie-18	WMC260787	SM #16	WMC247143	Zeb #3C
WMC300868	Jamie-19	WMC260788	SM #17	WMC247144	Zeb #4C
WMC300869	Jamie-20	WMC280501	SM #18	WMC261496	Zeb 5-D
WMC300870	Jamie-21	WMC260789	SM #19	WMC261497	Zeb 6-D
WMC300871	Jamie-22	WMC260774	SM #2		
WMC300872	Jamie-23	WMC260790	SM #20		
WMC300873	Jamie-27	WMC260791	SM #21		
WMC300874	Jamie-28	WMC280502	SM #22		
WMC300875	Jamie-29	WMC280503	SM #23		
WMC300876	Jamie-30	WMC260972	SM #24		
WMC300877	Jamie-31	WMC260793	SM #25		
WMC300878	Jamie-32	WMC260794	SM #26		

Part 2 - Description of Operations

2.1 PROJECT OVERVIEW

The Sheep Mountain Uranium Project (Project) is located approximately 8 road miles South of Jeffrey City, Wyoming in Fremont County, Township 28 North, Range 92 West, in portions of Sections 16, 17, 20, 21, 22, 27, 28, 29, 32 and 33 in an area of historic uranium mining development, the earliest of which dates back to the 1950s. This area lies approximately 62 road miles southeast of Riverton, Wyoming and approximately 105 road miles west of Casper, Wyoming in the Crooks Gap Mining District, in which little to no actual mining activity has taken place since the late 1980s. Refer to Figure 2.1-1 Project Location.

The project is entirely within an active mine permit, WDEQ Permit to Mine 381C, which includes approximately 3,625 surface acres (approximately 5.7 sq. miles) of mixed ownership including 2,313 acres of federal surface, 768 acres under state ownership, and 544 acres of fee lands. Approximately 2,836 acres of federal mineral estate is included in the project area. Refer to Figure 2.1-2 Land Ownership.

In addition to proposed mining related activities the Project is pursuing a Source Materials License from the U.S. Nuclear Regulatory Commission (NRC) to operate a uranium recovery facility within the project boundary, WDEQ Permit to Mine 381C, as part of the project scope. The uranium recovery facility will be the subject of a separate licensing process administrated by the NRC, which will prepare a parallel but separate EIS for the uranium recovery facility.

The purpose of the proposed project is to explore for and identify mining reserves and extract approximately 1.5 million to 2.0 million pounds of uranium per year over an anticipated project life of 15-20 years. The Project will use conventional open pit and modified room and pillar underground mining methods to extract the ore. Uranium recovery will be performed on-site using heap leach methods and a processing facility to produce “yellowcake” (uranium oxide-U3O8).

The surface disturbance will include approximately 178 acres for excavation of new open pit mines to extract shallow ores, which will result in approximately 152 acres of overburden piles. Existing roads and mine shafts will be rehabilitated for ventilation and new declines will be advanced from the surface to access existing underground workings for rehabilitation further mine development. The underground mine operations will not in any new disturbance of land surface but will re-affect 21 acres. A series of double lined pads and ponds will be constructed for the heap leach facility and new buildings will house the site’s processing plant, with a smaller structures for administration and shop facilities which together will occupy approximately 92 acres of the total disturbance. In addition, approximately 118 acres will be disturbed or re-disturbed by ancillary activities including roads and utilities. Figure 2.2-3 – Project Overview shows the maximum limits of planned surface disturbance.

The Project activities will include the drilling of exploratory boreholes; construction of open mine pits, excavation of underground mine declines (low angle accesses tunnels) and underground mine workings using modified room and pillar methods, rehabilitation of existing mine shafts for ventilation, installation of monitoring wells, construction of uranium processing and waste water treatment facilities; and development of new and improvement of existing access roads. Surface disturbing and interim reclamation activities will be performed sequentially to minimize the amount of surface disturbance at any one time.

Both the surface and underground mining will use diesel powered equipment and some blasting to extract ores. Placement of overburden materials to their temporary and final storage locations will be accomplished with diesel powered equipment. All pit overburden will be temporarily stockpiled on the surface during the initial phases of mining, while later pit mining phases will sequentially backfill the overburden and waste material within previously mined portions of the pit. Ore will be trucked from the open pits to a stockpile site located adjacent to the underground mine portal. Ores from the underground mine will be transported to the surface via belt conveyors and then combined with open pit ores and transported via an enclosed overland conveyor system to the processing facility.

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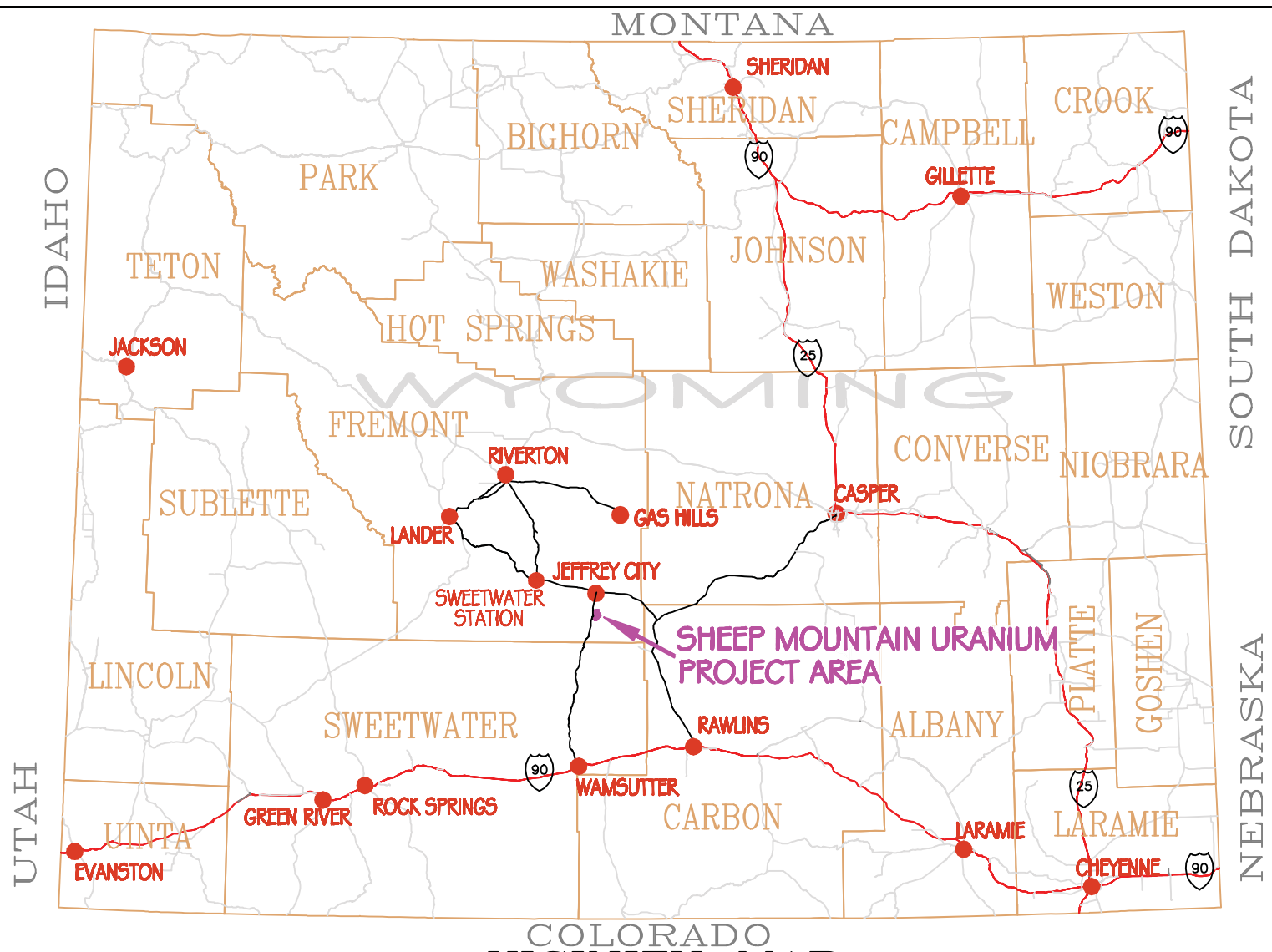
Surface disturbance will be phased over several years, depending on the uranium production rate, economic conditions and the availability of mine construction equipment and personnel. Final surface reclamation is also required by state regulatory agencies and assured by bonds. At the end of surface mining, all stockpiled overburden will be returned to the pits and the surface re-graded with top soil and seeded for re-vegetation. To the extent practical underground mining spoils will be remain underground and will be reclaimed within the underground workings. Any excess mine wastes from the underground will be backfilled and reclaimed with the open pit mine wastes. Final reclamation includes placing all pit mine overburden and spoils back in the mine pits, plugging and abandoning all ventilation shafts and access tunnels, removing all ponds, buried piping, and re-grading the surface to approximate pre-mine contours, replacement of topsoil and revegetation of the disturbed surface with native plant species approved by the regulatory agencies.

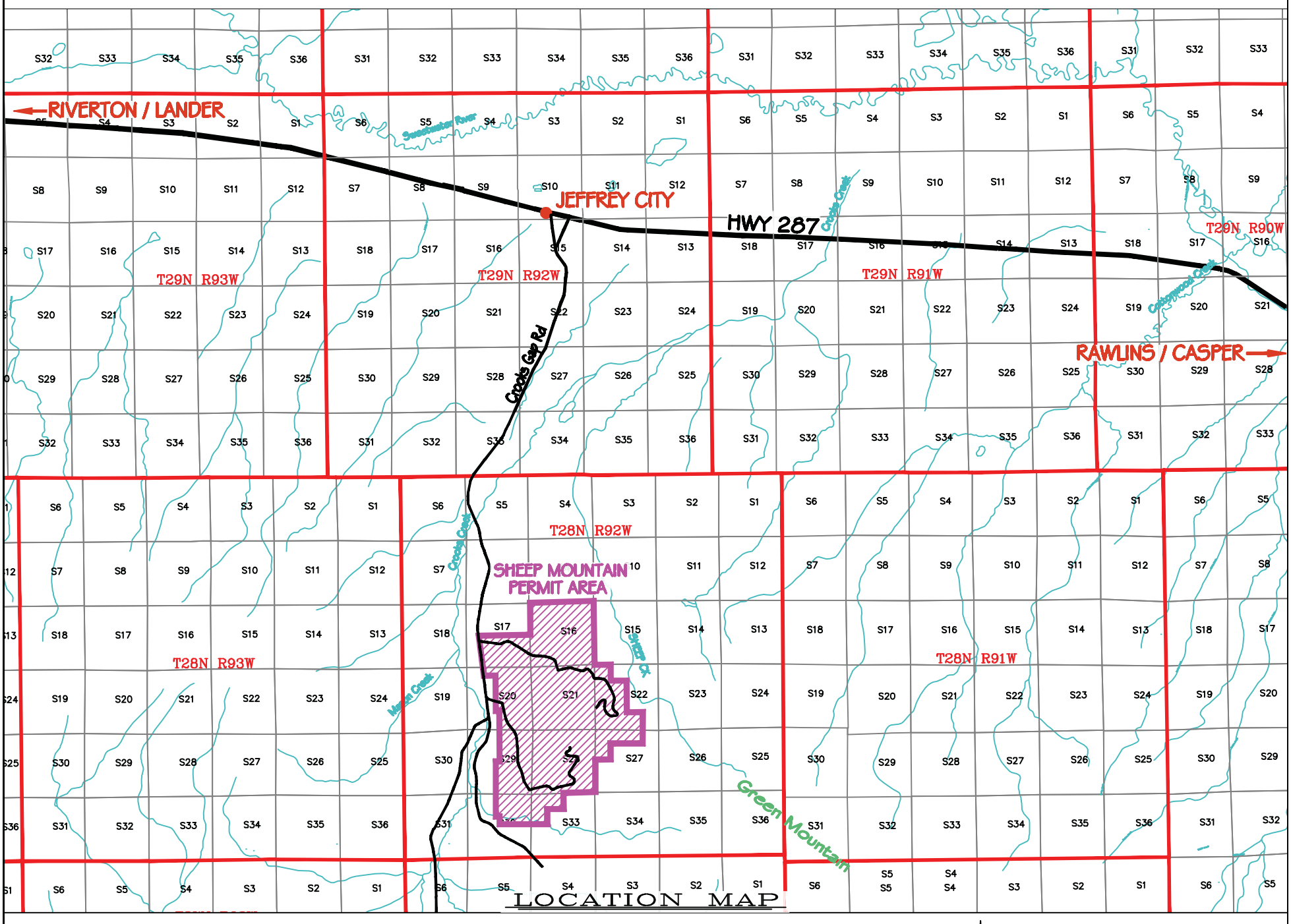
No adverse impacts to groundwater quality are anticipated. Once the mine surface has been re-graded and reclaimed in accordance with the approved reclamation plan, vegetation, site stability and ground water monitoring will continue until it is demonstrating the lands have been adequately reclaimed to support their pre-mine land use. Until that time the Project will be subject to review by regulatory agencies and assured by financial bonds, final surface. Once the final reclamation has been approved by regulatory agencies the bonds can be released.

The Project will employ a mix of full-time personnel and temporary contractors throughout the life of the mine. During mining operations, approximately 210 full-time employees plus approximately 40 contractors will be required. It is likely that the majority will live in Riverton and Lander with the remainder living in Casper. The Project is projected to provide an economic benefit through a variety of taxes paid to federal, state, and local governments to include employee income taxes, severance taxes, property taxes, and sales taxes.



VICINITY MAP

NOT TO SCALE



LOCATION MAP

LEGEND

- T&R LINE
- SECTION LINE
- PERMIT BOUNDARY
- MAJOR ROADWAY
- ACCESS ROADWAY
- WATERWAY

10,000' 0 5,000' 10,000'

1 inch = 10,000'

LOCATION MAP

BRS ENGINEERING	**PROJECT LOCATION**	**SHEEP MOUNTAIN MINES MINE PERMIT 381C**	REVISION DATE: 06/15/11
	SCALE: 1"=10,000' DATE: 5/13/11		CAD FILENAME: LP2008/PERMITING/LOCATION
	DRAWN BY: CDS		DWG. NUMBER: FIGURE 2.1-1

TITAN URANIUM USA INC

R 92 W

T 28 N

T27 N

KIRK, FLORENCE (DEC'D)

CLAYTOR, LONNIE J

S7

CLAYTOR, LONNIE J

S8

BLM

S9

BLM

BLM

BLM

S10

GREEN MOUNTAIN 46 RANCH INC

S11

STATE OF WYOMING

Jeffrey City

CLAYTOR, LONNIE J

FREMONT COUNTY SOLID WASTE

BLM

S17

State of Wyoming Mining Lease 0-15536

S16

STATE OF WYOMING

BLM

S15

BLM

BLM

S14

S18

STATE OF WYOMING

STATE OF WYOMING

CROOKS GAP ROAD

BLM

GREEN MOUNTAIN 46 RANCH INC

STATE OF WYOMING

STATE OF WYOMING

CLAYTOR LIVESTOCK RANCH CO

S20

BLM

S21

BLM

BLM

MCINTOSH, CHARLES T

MCINTOSH, CHARLES T

S22

S23

S19

BLM

GREEN MOUNTAIN 46 RANCH INC

MCINTOSH, CHARLES T

FEUCHUK, ELLEN M

S30

BLM

S29

FEUCHUK, ELLEN M

S28

BLM

S27

BLM

S26

BLM

FEUCHUK, ELLEN M

BLM

Wamsutter

S31

FEUCHUK, ELLEN M

S32

BLM

S33

BLM

FEUCHUK, ELLEN M

S34

BLM

S35

BLM

BLM

JACOBS, SHIRLEE LOUISE (1/2 INT) & KARNEGES, FREDNA FISH (1/2 INT)

S6

BLM

S5

FEUCHUK, ELLEN M

S4

BLM

S3

BLM

S2

BLM

LEGEND

TOWNSHIP LINE		PROPERTY LINE	
SECTION LINE		KEY 8D	MINING CLAIM
PERMIT BOUNDARY			SURFACE LEASE AREA
EXISTING ROADS			TITAN PURCHASE LOI
1/2 MILE BOUNDARY			

2,000' 0 1,000' 2,000'

1 inch = 2,000'

BRS ENGINEERING

LAND OWNERSHIP

SCALE: 1"=2,000' DATE: 5/11/11

DRAWN BY: CDS

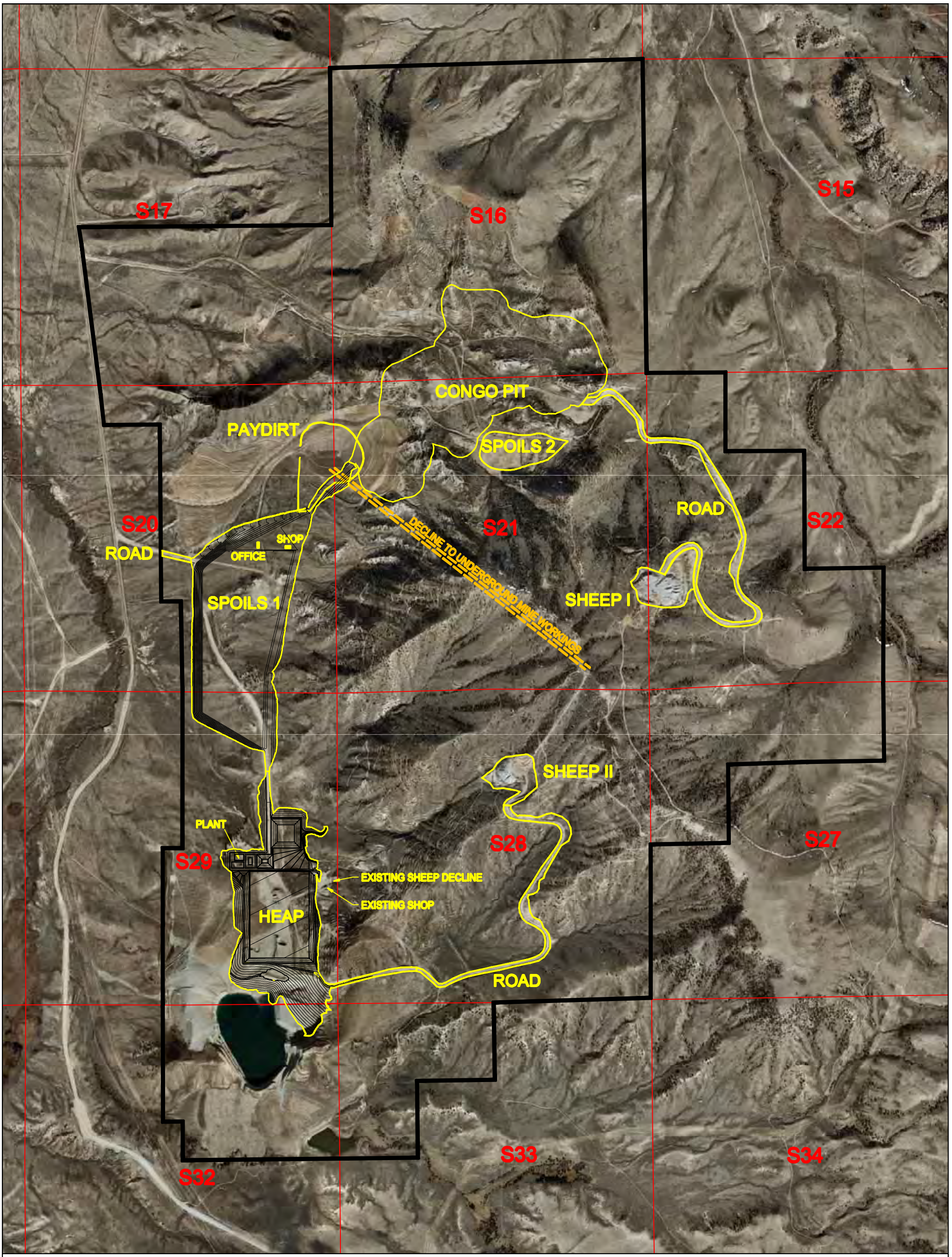
SHEEP MOUNTAIN MINES MINE PERMIT 381C

REVISION DATE: 06/13/11

CAD FILENAME: LP2008/PERMITING/OWNERSHIP

DWG. NUMBER: FIGURE2.1-2

TITAN URANIUM USA INC



LEGEND

- SECTION LINE
- PERMIT BOUNDARY
- MAXIMUM EXTENT OF SURFACE DISTURBANCE
- PROPOSED DECLINE TO UNDERGROUND MINE WORKINGS
- DESIGN CONTOURS CI-10'

T.28N., R.92W.

1,500' 0 750' 1,500'

1 inch = 1,500'

BRS ENGINEERING

PROJECT OVERVIEW

SCALE: 1"=1500' | DATE: 5/16/11

DRAWN BY: CDS

SHEEP MOUNTAIN MINES
MINE PERMIT 381C

REVISION DATE: 06/15/11

CAD FILENAME: LP2008/PERMITING/PROJECT OVERVIEW

DWG. NUMBER: FIGURE 2.1-3

TITAN URANIUM USA INC

2.1.1 Mine Permit 381C

Mining and reclamation activities at the Sheep Mountain Project are permitted through the current WDEQ/LQD Permit to Mine, 381C. This permit was originally granted to Western Nuclear Inc, in 1975 following the passage of the 1973 Environmental Quality Act and subsequent implementing regulations in 1975. The permit has received 5 amendments. The permit has remained in force and in good standing through a succession of owners up to an including the transfer of the mine permit to Titan in 2009. (Refer to Section 1.1)

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SEE Part 7 - Reclamation cost estimate PAGE 44 A

2.1.2 Existing C*onditions*

Mining at Sheep Mountain began in the 1950's. The first mine reclamation requirements in Wyoming were implemented in 1969 through the Open Cut Reclamation Act. Subsequently in 1973 the Wyoming Environmental Quality Act was enacted and in 1975 the first Rules and Regulations were promulgated under the 1973 Act. Mine operations at Sheep Mountain were once licensed under the 1969 Act and later permitted under the 1973 Act with the issuance of Permit of Mine 381C which remains in full force and effect. As a result of this 60 year history of mining and mine land reclamation various portions of the mine permit were operated and reclaimed under varying degrees of regulations and to varying reclamation standards. Figure 2.2-1, Existing Conditions, shows the areas of existing disturbance and mine reclamation by era along with a general outline of the affected area for the proposed mine development.

Additional areas of mine related disturbance, including exploratory adits, exploration cuts and roads, have been inventoried by AML but are of a low priority for reclamation under the current program. Titan has no outstanding reclamation responsibility for these disturbances. The significant mine related disturbance with respect to AML is the McIntosh Pit as discussed in Section 2.1.1. Titan has discussed the fate of the McIntosh pit on several occasions jointly with the WDEQ/LQD and AML. Titan is committed to cooperative effort to with AML to reclaim the site. The McIntosh pit is located entirely on private lands.

Existing site conditions are summarized in Part 6 of this Plan of Operations and documented in Mine Permit 381C, Mine Permit 381C Annual Reports (current August 15, 2010), and recent addenda to Appendix D of the mine permit including:

- D-1 Land Use
- D-2 History
- D-3 Archeology
- D-4 climatology
- D-5 Geology
- D-6 Hydrology
- D-7 Soils
- D-8 Vegetation
- D-9 Wildlife
- D-10 Radiology

Specific Items of note:

1. Radiological Levels. Surface radiological levels are summarized in Section 6.10 and further documented in Mine Permit 381C, Appendix D-10, Radiology Addendum 2011. Current baseline radiological surveys including gamma surveys correlated to equivalent Radium 226 in soils show elevated background levels of both Natural Occurring Radioactive Materials (NORM) and Technically Enhanced Natural Occurring Radioactive Materials (TENORM). These elevated background levels are related to the local geologic setting and outcropping of mineralized material and to the historical mining and mine reclamation activities.

2. Surface Drainage. Historic access to the site includes two routes both originating from the Jeffery City/Wamsutter County road. The northern access route is along Hank's Draw. The access road alignment has impacted the surface drainage in the area and led to increased sediment transport. The southern access route is more stable. The reclaimed Paydirt pit (AML) is a closed depression, lacking a surface outlet. Previously the access road between the Sheep I and Sheep II shafts was creating surface drainage issues, erosion, and off-site sediment transport. This access road was re-graded to approximate original contours and reclaimed by Titan in 2010.
3. Exploration and Historic Disturbances. The existing land surface within the Congo Pit limits (both State Lands and BLM) has been affected by mineral exploration, historic underground shafts and vents, and mine subsidence. Although this area is shown as new disturbance in the Operating Plan, the land surface has been impacted by historic exploration and mine development.
4. Ground Water Hydrological Conditions. As discussed in Section 6.6 and further documented in Mine Permit 381C, Appendix D-6, Hydrology Addendum 2011, despite the long history of mining, some of which proceeded modern regulations, existing ground water quality does not show significant degradation from mining. In the vicinity of the McIntosh pit, the pit and 5 surrounding wells have been monitored for water level and water quality since 1988. This included the period of time from 1990 to October, 2000 when the Sheep underground mine was being continuously dewatered and water was discharged into the McIntosh pit. While water levels in the pit were affected the water levels in the monitor wells were not. Water quality in both the pit and monitor wells was stable and consistent. The only exception was a slight but general rise in Radium 226 and uranium concentrations in the McIntosh pit.
5. Mineral Processing and Heap Leach Facility. The Mineral processing and heap leach facility will be located on lands which have been previously disturbed. These lands are private lands granted originally under the Stock Raising Homestead Act of 1916. Titan has executed a Letter of Intent with the current land owner for the purchase of these lands. This will facilitate the transfer of surface lands to the DOE for long term care and maintenance under USNRC when the project is closed out and reclaimed.

S17

S16

S15

RAVINE

SUBSIDENCE(AML):
CONGO PIT

VENT SHAFT(AML)

PAYDIRT

SEISMIC SHAFT(AML)

S20

S21

S22

SHEEP I SHAFT

9.5 ACRES OF DRILL ROADS
RECLAIMED IN THIS AREA:1975–1985

SHEEP II SHAFT

S28

S29

S27

BIG SHEEP DECLINE

SUN HEALD

S32

S33

S34

LEGEND

SECTION LINE

PERMIT BOUNDARY

PLANNED DEVELOPMENT

BONDED FOR RECLAMATION

RECLAIMED AREAS TO DATE
- 2010
- 2003–2006
- 1985–1986
- 1979–1985
- PREVIOUS
- AML

RECLAIMED ROADS DATE
- 2010
- 2003–2006

T.28N., R.92W.

1,500' 0 750' 1,500'

1 inch = 1,500'

BRS ENGINEERING

EXISTING CONDITIONS

SCALE: 1"=1500'

DRAWN BY: CDS

DATE: 6/13/11

SHEEP MOUNTAIN MINES
MINE PERMIT 381C

REVISION DATE: 06/15/11

CAD FILENAME: LP2008/PERMITING/EXISTING CONDITIONS

DWG. NUMBER: FIGURE 2.2–1

TITAN URANIUM USA INC

*2.1.*3 Project B*enefits*

The Sheep Mountain Project is located within an area designated in the current Resource Management Plan (RMP) for industrial development and is accessible from the Jeffery City / Wamsutter County road which is designated as an industrial access corridor in the RMP. In addition, the project is meritorious in many aspects.

1. Economic Benefits. Economic benefits of the project include regional and local economic development, increased employment, and increased tax revenue. During mining operations, approximately 210 full-time employees plus approximately 40 contractors will be required. The Project is projected to provide an economic benefit through a variety of taxes paid to federal, state, and local governments to include employee income taxes, severance taxes, property taxes, and sales taxes. In addition, a valuable mineral resource will be efficiently extracted as part of the uranium fuel cycle in which supply is currently not meeting demand.
2. Mine Reclamation Benefits. While there will be short term environmental impacts from the proposed mining and mineral operation, any lands disturbed or re-affected by the operation will be reclaimed to current standards. This would include any existing mineral exploration, historic underground shafts and vents, and mine subsidence disturbances which may be re-affected or otherwise disturbed as a part of the mining and mine reclamation.
3. Radiological Levels. Although not required by regulation, Titan has proposed as a reclamation goal, as discussed in Section 6.10 and Mine Permit 381C Appendix D-10, to limit the near surface soils/overburden concentration to a maximum limit of 20 pCi/g Radium 226 which would equate to approximately 70 µR/hr. Except where local conditions and such factors as availability of cover and topsoil affect the ability to meet this goal, principals of ALARA will be employed. Employing this goal would dramatically lower surface radiological levels within the majority of the proposed disturbance areas including the Congo Pit, associated mine spoil areas, and mineral processing and heap leach area which in many cases currently exceed 75 µR/hr.
4. Ground Water Hydrology. As discussed in the Section 2.3, Water Management Plans, when the Sheep underground mine is dewatered initially the water will be pumped and conveyed via a temporary waterline to the McIntosh pit. Barium Chloride (BaCl) will be added to the water prior to discharge to remove Radium 226 from the discharge waters and gradually reduce Radium 226 levels in the pit. During operations water from the McIntosh pit and from mine dewatering will be utilized in mine and mineral processing operations resulting in zero discharge to surface waters of the state. In addition, Titan is committed to cooperative effort to with AML to reclaim ultimately reclaim the McIntosh pit. When this is accomplished the current evaporative loss which is creating a local depression in the ground water surface will be eliminated.
5. Surface Water: Planned operations will backfill the Paydirt pit reconnecting surface drainage. Discharge will be routed through the existing surface drainage channel constructed by AML as part of the Paydirt project. Planned operations will also eliminate site access via Hank's Draw and reclaim the access road stabilizing the area and reducing off-site sedimentation.

2.2 Operating Plan

Map 2.2-1 – Operating Plan shows the maximum extent of mining activities, waste rock stockpiles, processing facility, heap leach pads, solution collection and evaporation ponds, support facilities, buildings, and access routes.

Map 2.2-2 – Construction Details provides typical construction details and cross sections for the mining areas, waste rock stockpiles and heap leach facilities.

2.2.1 MINE PLAN - CONGO PIT

The current mine design for the Congo Pit includes typical highwall heights in the range of 100 to 400 feet, and reaches a maximum depth of 600 feet in localized areas in the southeast pit corner. The open pit design employs similar design parameters and mining equipment configurations to those used successfully in past operations. The preliminary highwall design for the Congo Pit was based upon the performance of past projects in the Sheep Mountain and Gas Hills districts, and includes an average highwall slope of 0.7:1, which reflects the average of a 10’ bench width and 50’ wall at a 0.5:1 slope, as shown schematically on Map 2.2.

Based upon the nature of the geologic formation, which dips up to 16 degrees to the southeast, shallow mineralized areas exist at the northwest corner of the pit. As a result, the overall mine sequence begins in this area, where the access ramp will require less than 40 vertical feet to access the pit. Subsequent pit extensions will utilize this access, working within the pit floor at grades less than the dip of the formation, with average ramp grades of 4 to 8%, with no grades exceeding 10%. Grades of 7 to 10% will only be utilized in very short sections so than momentum of haulage equipment will not be interrupted. Two way ramp and haulage routes are planned to be a minimum of 40’ wide, with higher speed portions being 60’ wide for safe passing. The equipment selected for this project has an average width of 12’, so these haul road widths will provide ample space between opposing directions of travel but are not intended for passing. Haul roads will be crowned and ditched to quickly shed any direct precipitation, and culverts will be installed to convey runoff from first and second order drainages which are crossed by the haul road. Berms reaching the midpoint of the wheel of the largest equipment on site will be installed in any area where the potential for tipping equipment exists. Berms may be utilized to divide opposing lanes of travel to provide further protection against collision. The haul roads will be surfaced with site produced sandy gravel passing a 3/8” screen, to provide a surface which minimizes tire wear, is easily maintained, reduces fugitive dust emission and does not become slick when wet. Full time maintenance of haul roads will be performed by a motor grader. Dust control and water to aid in compaction of the surface will be provided by off road water trucks. It is anticipated that right hand traffic will be utilized almost on the project.

Ground control for the historic underground mines will be conducted by the use of a crew including a medium sized excavator, a medium sized dozer, and oversight by a field engineer with access to the digital 3D modeling of the historic underground mines as completed from the historic underground mine mapping. The basic procedure for this crew will be to locate shallow underground zones in the pit floor based upon the mine mapping, over-excavate and collapse the

mine voids, and backfill the area prior to placing mining equipment in the area. Assistance in location of the voids will be provided by in-pit drilling equipment and/or shallow seismic testing. Blasting to shatter cemented arkosic sandstone layers may be utilized on an as needed basis to assist in the collapse of the historic underground mine areas.

Based upon site relief in the Congo area, surface water inflow can be kept out of the pit by ditching around the highwall crest and day-lighting the runoff to offsite drainages. In addition to controlling surface water runoff, the ditching will serve as a safety berm to prevent access to the highwall. All offsite drainage will meet the requirements of the WYPDES permit, including appropriate sediment control measures. Excess groundwater inflow in the pit will used as a part of the daily operation of the pit for dust control on haul roads or consumed at the processing facility. Current data indicates that ground water flow will average less than 150 gpm (refer to Appendix D-5 WDEQ Mine Permit 381C). Based upon the dip of the formation, the pit floor will be inclined such that a low area will be kept at all times as a sump for the pump suctions. As a result, the remainder of the floor will be kept dry such that year round operations can be maintained under most conditions, and quickly restored following direct precipitation events.

Mine Equipment

Stripping and mining equipment was selected based on the nature and configuration of the deposit and physical parameters such as the anticipated haulage profile. Due to the nature of the deposits consisting of numerous dipping mineralized horizons, it was determined that both the stripping and mining equipment must not only be efficient but highly selective and flexible. The articulated mine trucks are 6-wheel drive units capable of operating in rugged and steep conditions. The twin engine scrapers can self-load as a pair in a push-pull configuration or can be push loaded with assistance from the track dozers. The smaller self-loading 623 scraper can excavate in lifts as thin as the cutting edge of the unit or approximately 3 inches. For mining, the medium size excavators will be able to excavate in lifts as thin as 6 inches, if needed. The open pit mine equipment list follows.

Open Pit Mine Equipment List

Major Equipment	Number	Capacity/ Load Factor
330 LX Linkbelt Excavator	2	2 cy
16M CAT Motor Grader	1	
140 CAT Motor Grader	1	
D-8 CAT Track Dozer	1	
D-9 CAT Track Dozer	1	
CS64 CAT Vibratory Compactor	1	
A30D Volvo Articulated Truck	4	32 tons/load
980 CAT Wheel Loader	1	6 cy
637 CAT Twin Engine Scraper	4	29 cy/load
623 CAT Self Loading Scraper	1	18 cy/load
Water truck 3000 gallons	1	3000 gal

Water truck 8000 gallons	1	8000 gal
Mine Support vehicles		
Fuel/lube truck	1	
Mechanical service truck	1	
Rubber tire backhoe Cat 414e with forklift attachment	1	
Pickup trucks, 4WD, ¾-ton	8	

Operating Parameters

Equipment cycle times have been estimated for both stripping and mining. Based on these estimates both the stripping and mining can be accomplished in a single 10 hour daily shift, 5 days per week. The stripping crew consists of four 637 CAT twin engine scrapers supported by dozers and motor graders. The nominal capacity of this configuration is capable of excavation and placement of some 4 million cubic yards of material on an annual basis. Mining will be completed in a selective manner with a 2 cubic yard bucket on a medium size excavator loading up to four 35 ton articulated mine haul trucks. The mining crew is projected to have excess annual capacity and will thus be responsible for handling the majority of the internal mine waste.

In-pit grade control will be a critical aspect of the project. This type of sandstone hosted uranium deposit may exhibit local variability in grade and thickness and potentially variable radiometric equilibrium conditions. To address these conditions, minimize mine dilution, and maximize mine extraction, a tiered systematic grade control program is essential. The following narrative describes the tiered grade control program.

Tier 1, Radiometric Scanning: Field personnel equipped with calibrated hand-held gamma meters will be assigned to both the stripping and mining crews. Grade control personnel along with mine supervisory personnel will be provided with detailed mapping of anticipated mineralized areas within the various work areas, and will continually monitor these areas along with other excavations for radiometric and/or visual indications of uranium mineralization.

Tier 2, In-Pit Assay: In-pit there will be a portable sample trailer equipped with a portable x-ray fluorescence (XRF) assay instrument and appropriate sample preparation equipment. All mine trucks working within identified mineralized zones will be sampled with an auger system and the samples prepared and assayed. The individual trucks will then be directed to deliver the material to the heap leach facility or mine waste area depending on the results of the assay. Grade control and supervisory personnel will also have the ability to collect spot samples for immediate assay to field calibrate their gamma meters for variations in radiometric equilibrium conditions. The XRF can assay for uranium and heavy metals which may be present.

Tier 3, Quality Control: As each mine truck is sampled and tested, the field assay sample rejects will be collected and separated by grade ranges. The daily pit samples will be blended and split to provide representative samples which will in turn be assayed at the plant laboratory. The plant lab will assay both solid and liquid samples and will be subject to an outside and/or third party quality control system.

These grade control procedures will also be used to segregate material for final reclamation cover. The procedure would be the same except rather than segregating the material with concentrated the scanning and assaying would be used to identify material which do not contain deleterious metals and/or radionuclides.

Mine Support and Utilities

Mine support facilities will consist of an office, mine shop and warehouse, and a dry facility. In consideration of the remoteness of the site and the potential hazardous winter driving conditions, emergency stores of non-perishable food and water will be kept on-site along with portable cots should it be necessary for personnel to remain on-site during such conditions. Electric and natural gas service was provided to this site previously. Some upgrading and adaption of this infrastructure for the planned project will be necessary. Ground water rights in excess of 3,000 gpm are held by Titan from a combination of various wells and the existing Sheep underground mine shafts and the McIntosh pit. This volume of water will more than meet the consumptive needs for dust control, mineral processing and potable needs.

Staffing and labor requirements for the open pit mine and overall project management is summarized in the subsequent table.

Open Pit Mine Staff

General Project Manager	1
Mine Manager OP	1
Mine Lead man OP	2
Maintenance Lead man	1
Warehouse/clerk	1
Safety/personnel Manager	1
Environmental Engineer	1
Chief Mine Engineer	1
Chief Mine Geologist	1
Surveyor	1
Technicians	3
Secretary/Clerk	1
Accountant	1
Equipment Operators	17
Mechanics and Oilers	4
Open Pit Grade Control	4
Total Open Pit Staff/Labor	**41**

2.2.2 MINE PLAN - SHEEP UNDERGROUND

The mining method proposed is a conventional method using a modified room and pillar method but utilizing state of the art mining equipment such as jumbo drills and seven cubic yard scooptrams for haulage. A new double entry decline will be constructed starting at the reclaimed Paydirt Pit and ending below the deposit. The existing shafts will be used for ventilation purposes only, with exhaust fans mounted at both locations. If the existing bore hole ventilation shafts can be rehabilitated, they will be used as intake shafts. The deposit is comprised of 16 mineralized zones with a total thickness of approximately 350 feet. The deposit will be mined primarily from bottom to top as a cut/fill operation.

Mine Design Parameters

Planned mining at the Sheep Underground will use two conventional mining schemes, one for development drifts and one for mining sections. The development drifts will utilize a dual opening approach with crosscuts on 100 foot centers. Two different size openings will be used. A 12 foot by 12 foot opening will be used for haulage and a 12 foot by 8 foot opening will be used for transportation and ventilation.

For the mining panels, multiple entries will be used depending on the width of the mineralized pod. Entries will be approximately 12 feet wide and a minimum of six feet high with an average of approximately seven feet high. Crosscuts will be placed on 100 foot centers.

In addition, mineralization will also be mined using two mining schemes, advance mining and retreat mining. The advance mining is done as described above, driving approximately 12 feet wide by seven feet high drifts. Multiple drifts will be driven parallel to one another with connecting crosscuts on 100 foot centers. The parallel drifts will be approximately 27 feet apart, centerline to centerline. This will leave a pillar with a dimension of approximately 15 feet wide and 90 feet long.

On retreat mining, these pillars are removed. This is done utilizing two methods:

In areas that do not have mineralization directly above them, temporary support will be placed such as timbers or concrete cylinders and the pillars will be removed allowing the roof to ultimately fail.
In area with mineralized pods directly overhead, the adjoining rooms will be backfilled using a cemented backfill. The backfill is a combination of waste rock mixed with three and one half percent cement and three and one half percent fly ash. This backfill will exceed the strength of the native rock and prevent the roof from failing and diluting the mineralized zones above them.

Ventilation will be provided by two 500 HP exhaust fans at Sheep No. I Shaft and Sheep No. II Shaft assisted by multiple portable face fans. Fresh air will be drawn into the mine through the dual declines. Ventilation requirements for this mine are approximately 220,000 cubic feet of air per minute. Fresh air must be directed across each of the working faces and though the drifts designed for personnel transport.

Blasting of the rock, both for development and mining will be done by drilling eight to 12 foot blast holes using jumbo drilling rigs and filling the blast holes with ANFO (ammonium nitrate and fuel oil). The ammonium nitrate is mixed with fuel oil to make an explosive mixture as it goes into the blast hole and is therefore not explosive as it is being transported into the mine and between the working faces.

Haulage from the working faces to the haulage conveyor or to the ore chutes will be done using seven cubic yard scooptrams. These machines are able to load, haul and dump (hence the name LHD) the load of rock without the aid of additional pieces of equipment.

The roof and sidewalls in the drifts, both mining and development will be supported with rock bolts and wire mesh. A rock bolting machine which can drill holes both vertically and horizontally will place the rock bolts on approximately four foot centers as the drifts advance. There will be overlap of bolting and wire mesh between each round to ensure proper ground control coverage.

Boreholes to construct ore chutes or to aid in ventilation will be done by a raise boring machine. To accomplish this, as small pilot hole is drilled from top to bottom of where the raise is to be placed. The raise boring cutting head is placed at the bottom of the hole and the rotating cutting head is pulled up the hole, enlarging it to the desired diameter. All the cuttings fall to the bottom of the hole and are hauled away with one of the scooptrams.

Waste rock, as much as possible, will be place in mined out working to avoid the necessity of hauling the waste to the surface. When it is not possible, the waste will be taken to the surface where it will be stockpiled for final reclamation.

Pre-production and mine develop requirements include:
Dewatering of existing mine workings;
Rehabilitation of Sheep No. I and Sheep No. II Shafts;
Long hole drilling from existing underground development drifts to better delineate deposit;
Driving of double entry decline into mine;
Drive development drifts from decline to selected mineralized pods, and
Recruitment and training of mine personnel

Underground Mining Equipment List

Major Equipment	Number	Capacity/ Load Factor
Model Boomer SL1 Face Drill	3	
Model Boomer 104 Face Drill	1	
Model Boomer S10-DH Face Drill	1	
Model Boltec SL Bolter	5	
Model Boltec 325 Bolter	2	

Model ST7LP Scooptram	3	7 cy
Model ST7 Scooptram	2	7 cy
Mine Support vehicles		
Powder Buggies	1	
Bobcat Skidsteer	2	
Utility Truck - Flatbed	1	
Scissor Truck	1	
Man trips	6	
Pickup trucks, 4WD, ¾-ton	5	
Fuel/lube truck	1	
Mechanical service truck	2	
Forklift	1	

Operating Parameters

Productivity has been estimated for both development and mining. Based on these estimates, both the required development and mining can be accomplished in two 10 hour shifts, five days per week. The development crew will consist of two face drill operators, two rock bolter operators and two scooptram operators. The mining crew will be comprised of three face drill operators, five rock bolter operators and three scooptram operators. Both development and mining will have additional personnel to help with placing the bolts and wire mesh for ground control and moving equipment from one face to another as well as scaling down the ribs (walls) and back (roof) after a blast. Two blasting crews will work both the development headings and the mining headings loading and shooting the faces upon completion of the drilling.

The duel entry decline shown above starts in the reclaimed Paydirt Pit and goes to the southeast for about one mile at a grade of 10 percent. Initial mining will come off the decline about three quarters of the way to the bottom and continue down to intersect Zones 15 and 16. The total thickness of the mineralized zone is approximately 350 feet. As can be seen in Plate 7.2, mining tonnage will be much greater than the development tonnage as the mineralized pods are in close proximity to one another and stacked on top of one another. Relatively short haulage drifts will be required to connect the pods to each other and to haulage drifts.

The mine plan was designed to mine a consistent quantity of U308 as well as a consistent tonnage of development and mining rock. The required tonnage to be mined varied depending on the grade of the feed. In years with a higher grade, fewer tons of feed are required and more time is spent on development. Conversely, when the grade is lower, more tons of feed need to be mined and fewer tons are mined on development. Extra development work is planned in early years so development will always stay ahead of mining.

Staffing and labor requirements for the underground mine is summarized in the subsequent table.

Underground Mine Staff

Mine Manager UG	1
Shift Foremen UG	3
Maintenance Lead man	1
Warehouse/clerk	1
Safety/personnel Manager	1
Chief UG Mine Engineer	1
UG Mine Geologist	1
Surveyor	1
Technicians	6
Secretary/Clerk	1
Accountant	1
UG Ass't Foremen	3
Equipment Operators	54
Mechanics and Oilers	21
Utility/Blasting/etc	23
Surface Personnel	10
Total Underground Staff/Labor	**128**

2.2.3 MINERAL PROCESSING

Ores from the underground mine will be transported to the surface via belt conveyors and then combined with open pit ores and transported via an enclosed overland conveyor system to the processing facility. After being received at the processing facility, ores will be placed on the double lined leach pads using a radial belt conveyor, minor crushing and sizing of the ore may be performed prior to placing the ore on the pads. The heap leach recovery method includes the application of a sulfuric acid solution (H_2SO_4) through low-flow emitters on top of the heap for extraction of the uranium mineral from the ore. Solutions percolate through the ores on the heap pads, by gravity flow, dissolving the uranium from the ores. The leach solutions containing uranium are then collected by a series of lined ditches and pipes which convey the solutions into lined ponds. Solutions will be pumped to the processing plant or re-circulated from the ponds to the heap until they reach the desired concentration for processing. Processing starts with a solvent extraction system for recovery of uranium from the collected solutions. In the solvent extraction process, the uranium solution from the heap is mixed with an organic phase extractant and solvent carrier to concentrate the uranium and remove impurities. The uranium is removed from the organic carrier and precipitated as a uranium oxide known as "yellowcake", while the remaining leach solution is separated from the organic carrier and then returned to the heap as fresh leach solution. Up to approximately 10% of the initial solution volume will be removed from the system as a waste stream which is stored in a lined evaporation pond and/or spray evaporated on spent portions of the heap leach pads. Spent solutions and process liquid wastes will be managed in double-lined evaporation ponds on-site, no wastes will be discharged from the site. The heap will be reclaimed in-place after the ore has been fully leached, rinsed of leachate and drained

The heap leach pad is lined with a synthetic double liner system with leak detection. A network of drain pipes convey the solutions which pass through the heap to a lined collection pond by gravity flow. Solutions are distributed on the heap through a piping network utilizing drip emitters for uniform application of solutions. The heap pad is initially leached with fresh leach solution. Leach solutions returned from the heap to the collection ponds are regenerated with acid and an oxidant as necessary and recycled through the heap until the solution grades are enriched to suitable levels for processing. Enriched solutions, referred to as pregnant leach solution (PLS), are then delivered to the processing plant for uranium recovery. A generalized schematic of the heap layout follows.

Compliance with 3809.420 (b) (12) *Leaching operations and impoundments*

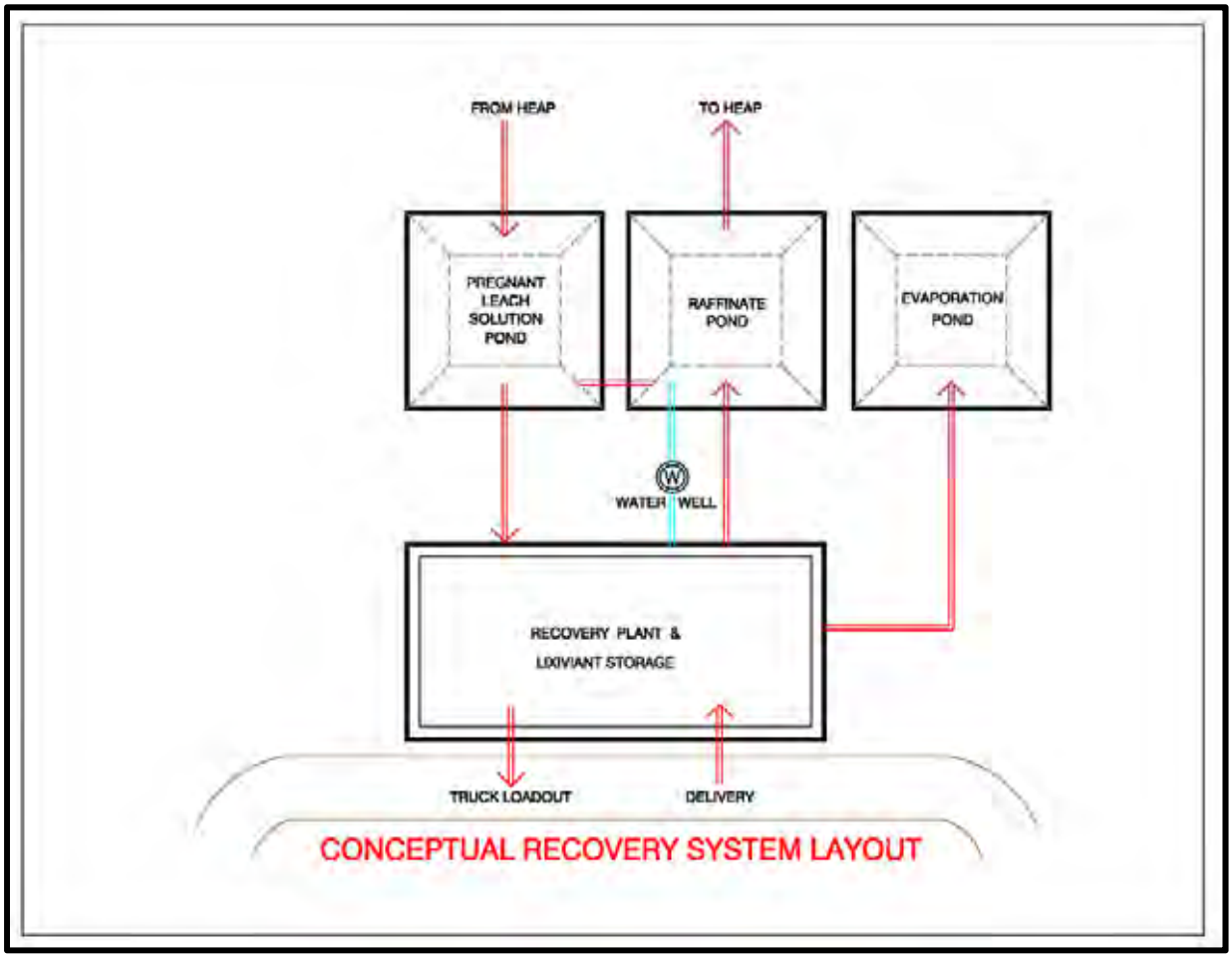
The design, construction and operation of the heap leach facility and ponds will comply with 3809.420 (b) (12) Regulations including:

- 3809.420 (b) (12) (i): Standard engineering practices will be adhered to achieve and maintain stability and facilitate reclamation. The heap leach facility and associated process and holding ponds are regulated by the USNRC and will adhere with regulatory guidance including

Regulatory Guide 3.11, "Design, Construction, and Inspection of Embankment Retention Systems for Uranium Mills".

- 3809.420 (b) (12) (ii): Liner and containment systems will employ two impermeable synthetic liners with a continuous leak detection system. The ponds and heap leach pad will be constructed with impermeable primary (60 mil HPDE) and secondary (40 mil HDPE) liners. A high permeability layer, e.g. HDPE Geonet, between the primary and secondary liners will be used for leak detection. This permeable layer will gently slope to individual lined sumps which will monitor each of the heap leach cells and each of the process and holding ponds independently.
- 3809.420 (b) (12) (iii): Design storm events required by USNRC guidance exceed the regulatory requirements of 3809.420 (b) (12) (iii) and are as follows:
    - The Raffinate Pond is sized to contain three days of make-up leach solution, and three days of leach solution required to wet fresh ore, assuming a maximum application rate of 360 gallons per minute (gpm), plus the volume for the 100-year 24-hour storm event over the pond surface area. An additional 5-foot of freeboard above the design capacity is incorporated into the design to account for wave motion due to high winds. Should the Raffinate pond reach its freeboard limit it will overflow by gravity via a double lined overflow to the Collection Pond.
    - The Collection Pond is sized to contain one day of collected PLS, the solution contained within the actively leaching area of the heap and volume for the 100-year 24-hour storm event over the pond and heap pad surface areas. An additional 5-foot of freeboard above the design capacity is incorporated into the design to account for wave motion due to high winds. An additional 5-foot of freeboard above the design capacity is incorporated into the design to account for wave motion due to high winds. Should the Collection Pond reach its freeboard limit it will overflow by gravity via a double lined overflow to the Holding Pond.
    - The Holding Pond is sized to contain the entire volume of the following: all planned process waste streams (accumulated over the 90 days of the 3 winter months), precipitation over the area of the pond accumulated over the 3 winter months, overflow of the Probable Maximum Precipitation (PMP) event from the Raffinate and Collection ponds, and volume for the PMP event over the Holding Pond and Heap area. An additional 5-foot of freeboard above the design capacity is incorporated into the design to account for wave motion due to high winds.
- 3809.420 (b) (12) (iv): All vats, tanks or other vessels used for the storage of reagents, chemical, fuel and other potentially toxic constituents will be contained by lined earthen berms capable of containing the entire capacity of the storage vessel in the event of a leak or spill with an additional allowance for freeboard.
- 3809.420 (b) (12) (iv): Access to the radiation control areas which may contain toxic and/or radioactive constituents will be controlled by fencing (8 foot chain link) to exclude access to the public, wildlife, or livestock. In addition all ponds will be covered with bird balls and netting to deter waterfowl.

Typical Heap Leach Schematic



Pregnant leach solution (PLS) collected in the heap collection ditches will gravity flow to the collection pond, then are pumped to a thickener-type clarifier. Clarifier underflow sludge will be pumped to the top of a spent heap and the overflow will be pumped through a polishing filter such as a mixed media "sand" filter or filter press. The polish filter sludge or cake will join the clarifier sludge and the clean solution will be delivered to a clarified PLS surge tank. In the solvent extraction circuit, clarified pregnant solutions will flow through the extraction mixer-settlers countercurrent to a barren organic phase containing 1-6% extractant, 1-3% phase modifier, and the remainder as diluent. The aqueous raffinate from which most of the uranium will have been extracted will gravity flow to the raffinate pond before being recycled to the heap. The loaded (pregnant) organic from the first extraction settler will be pumped to a series of smaller mixer-settlers countercurrent to an aqueous phase suitable to enhancing the phase separation to in order remove or "scrub" entrained aqueous phase solution. The pregnant organic is then pumped to a series of smaller mixer-settlers countercurrent to an aqueous phase or "strip solution" that contains sodium carbonate or sulfuric acid. Stripped (barren) organic is pumped to a surge tank and then is recycled to the extraction circuit, while the strip solution that has been enriched in uranium is pumped to the precipitation feed tank. In the case of a carbonate strip, the enriched solution is then acidified prior to precipitation.

Yellowcake precipitation will be accomplished in a series of agitated tanks with hydrogen peroxide solution to produce uranyl peroxide (UPO). Precipitated yellowcake will be thickened with the aid of a dilute flocculant solution. Depending on impurity content the thickener over will be pumped to the collection pond or evaporation pond and the underflow will be pumped to a pressure filter (e.g. a filter press). The filtrate will join the thickener overflow, and the filter cake will be fed by inclined screw conveyor and/or positive displacement pump to a vacuum paddle dryer. This type of dryer has been selected because it utilizes a closed loop air filter and vacuum system to capture particulate emissions and recover vapor as distilled condensate. The dried yellowcake, containing approximately one percent moisture, will discharge through a closed chute into standard drums for storage and transportation to a conversion facility. A wet scrubber will capture fugitive dust and fume from the yellowcake precipitation and drying area and its dilute slurry will be recycled to the yellowcake thickener.

Heap and Plant Staff

Process Manager	1
Radiation safety officer	1
Radiation safety technician	1
Heap operations supervisor	1
Plant operations supervisor	1
Heap operations leadman	1
Heap operators, shift	6
Plant operations leadman	1
Plant operators, shift	3
Plant operators, days only	3
Plant general labor/helpers	3
Dryer operators	3
Chief chemist/lab supervisor	1
Lab technicians, including sample prep.	2
Maintenance leadman	1
General maintenance technician	3
Mechanic	1
Electrical/instrumentation technician	2
Total Heap and Plant Staff	**35**

2.3 Water management plans

2.3.1 Ground Water

Both the underground on open pit will require dewatering for mine operations. Mine dewatering from the underground mine will be required in advance of re-opening the mine. Mine dewatering from the open pit mine will not be necessary until the 4th or 5th year of operations as the open pit mine does not reach the ground water level until that time. Initiation of underground mine dewatering is scheduled to begin in 2011. This activity is permitted under the active Mine Permit 381C. Waters from the mine pumped from the existing Sheep I shaft and discharged into the McIntosh pit. In line treatment of the mine waters with barium chloride to reduce the expected levels of Radium 226 will be completed prior to discharge into the pit. Additional barium chloride will be added trough the discharge waters to gradually lower the levels of Radium 226 in the pit. No waters will be discharged to the surface.

Once the Project begins construction and operation water will be needed for consumptive use for pollution and dust control and mineral processing. These consumptive uses may exceed the volume of water produced from mine dewatering. Additional, permitted water sources for the Project include the McIntosh pit is permitted as the McIntosh No. 1 Reservoir, Permit 7714 Reservoir which will be utilized as needed of operations.

As discussed in Section 6.6 and documented in Mine Permit 381C, Appendix D-6, Hydrology – Addendum 2011, an extensive network of monitor wells has been established for the project. All baseline monitor wells have been sampled quarterly for more than one year. Historical water quality and water level records for many of these wells provide a continuous record dating to 1988. Despite over 50 years of mining history, some of which proceeded modern regulations, existing ground water quality does not show significant degradation form mining. In the vicinity of the McIntosh pit the pit and 5 surrounding wells have been monitored for water level and water quality since 1988. This included the period of time from 1990 to October, 2000 when the Sheep underground mine was being dewatered and discharged into the McIntosh pit. While water levels in the pit were affected the monitor wells were not. Water quality in both the pit and monitor wells was stable and consistent. The only exception was a slight but general rise in Radium 226 and uranium concentrations in the McIntosh pit.

2.3.2 Surface Water

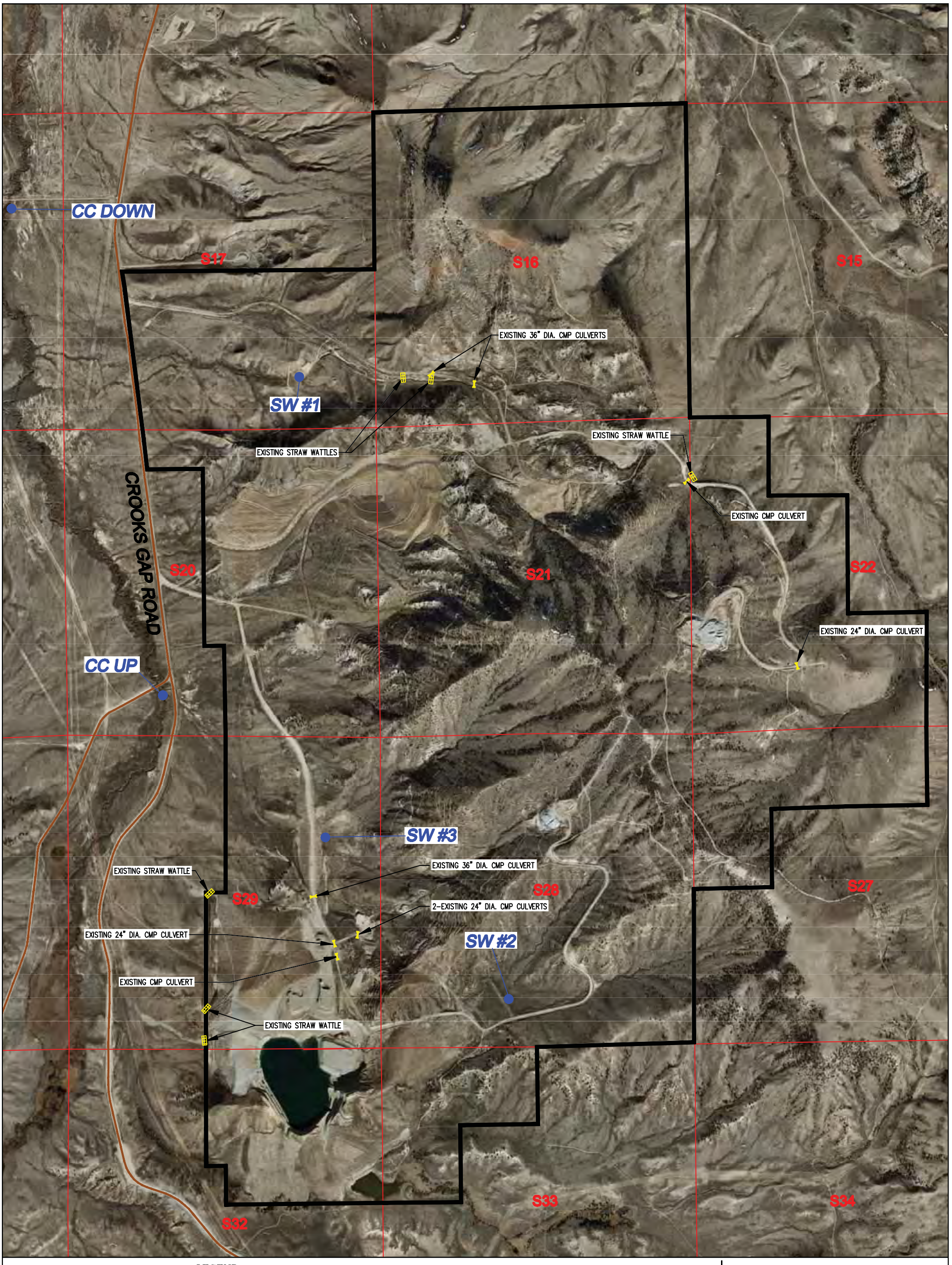
The Project has in place a Surface Water Pollution Prevention Plan (SWPPP) which is active and current. This plan will be updated as necessary during mine operations. The heap leach and uranium processing facility, regulated by the US Nuclear Regulatory Commission, is required to incorporate surface water management practices which account for the Probable Maximum Precipitation (PMP) and Probable Maximum Flood (PMF). Storm water runoff from the adjacent lands will be prevented from interacting with the heap leach and processing facilities and detained within an existing, permitted impoundment northwest of the facility, SP-5. (Refer to Figure 2.3-1 – Storm Water Monitoring Locations). Storm water from the heap leach and process facility areas will be contained in a double lined pond with leak detection.

Crooks Creeks and Sheep Creek drainage are both perennial river systems (Crooks Creek to the west of the Project and Sheep Creek to the east) that are located within the South Platte drainage basin. Mine operations do not directly affect either Crooks Creek or Sheep Creek. Crooks Creek is down gradient from the Sheep Mountain Project and likely receives groundwater inflow through adjacent saturated sediments. although the rate is low as evidenced by the lack of springs There are no springs between the project site and Crooks Creek. There is no surface disturbance planned in the Sheep Creek drainage. Although no groundwater impacts are anticipated, monitoring wells have been installed in the uppermost aquifer downgradient from the proposed heap leach, the McIntosh Pit and all proposed mining disturbances. Groundwater monitoring will be conducted over the life of the project and post reclamation until bond on the project is released.

As discussed in Section 6.6 and documented in Mine Permit 381C, Appendix D-6, Hydrology – Addendum 2011, surface waters within Crooks Creek have been monitored for over one year with respect to flow and water quality. Water quality data downstream of the project shows alkaline waters with total dissolved solids of approximately 200 mg/L and Radium 226 values less than 1 pCi/L (drinking water standard 5 pCi/L). The upstream monitoring location shows similar water quality Alkaline waters with slightly higher total dissolved solids and similar levels of Radium 226.

Surface waters in the vicinity of the project are perennial in both the Crooks Creeks and Sheep Creek drainage although neither have continuous flow to the Sweetwater drainage they flow north and are located within the South Platte drainage basin. Mine operations do not directly affect either Crooks Creek or Sheep Creek. Crooks Creek is down gradient from the Sheep Mountain Project and may receive ground water discharge although the rate is low as evidenced by the lack of springs. There is no surface disturbance planned in the Sheep Creek drainage and ground water flow is south and west away from Sheep Creek so no potential ground water impacts are anticipated.

As discussed in Section 6.6 and documented in Mine Permit 381C, Appendix D-6, Hydrology – Addendum 2011, surface waters within Crooks Creek have been monitored for over one year with respect to flow and water quality. Water quality data downstream of the project shows alkaline waters with total dissolved solids of approximately 200 mg/L and Radium 226 values less than 1 pCi/L (drinking water standard 5 pCi/L). The upstream monitoring location shows similar water quality Alkaline waters with slightly higher total dissolved solids and similar levels of Radium 226.



LEGEND

- SECTION LINE
- PERMIT BOUNDARY
- SURFACE WATER SAMPLING LOCATION
- EXISTING CORRUGATE METAL PIPE (CMP) CULVERT
- EXISTING STRAW WATTLE

T.28N., R.92W.

1,500' 0 750' 1,500'

1 inch = 1,500'

BRS ENGINEERING

STORM WATER MONITORING LOCATIONS

SCALE: 1"=1,500' | DATE: 5/23/11

DRAWN BY: CDS

SHEEP MOUNTAIN MINES
MINE PERMIT 381C

REVISION DATE: 06/13/11

CAD FILENAME: LP2008/PERMITING/MONITORING

DWG. NUMBER: FIGURE 2.3-1

TITAN URANIUM USA INC

2.4 Rock Characterization and Handling Plans

WDEQ regulations require an assessment of the geology and overburden within the Project. This information is presented in Appendix D-5 of Mine Permit 381-C and the Appendix D-5 Addendum 2011. The Addendum provides supplemental data collected from recent overburden sampling. Surficial geologic units exposed in the Congo pit area consist of Quaternary Alluvial deposits and weathered Battle Spring Formation. The Battle Spring Formation is the uranium host and is mineralized at or near the surface in some locations. The subsequent table summarizes the results of the recent overburden sampling. Stratigraphic zones within the boreholes were defined as unclassified, marginal or unsuitable based on WDEQ/LQD guidelines, where unclassified material did not contain any deleterious properties with respect to radiological or metal concentrations and was not acid forming. Without exception the upper oxidized portions of the boreholes, whether collared in Battle Spring or Quaternary Alluvium, where unclassified. The mining plan will segregate both available topsoil and oxidized surficial mine overburden for final cover of the mine and heap areas during reclamation. The ore control methods and equipment previously described will be utilized to segregate this material. It is estimated that a minimum of 2 million cubic yards of suitable cover material can be salvaged from the Congo Pit.

2.5 Quality Assurance plans

Quality assurance plans relate to a variety of activities. For discussion purposes these are divided into the following categories:

- Pre-Operational Baseline Monitoring
- Mineral Processing Facility Construction and Operations
- Mine Facility Construction and Operations
- Operational Monitoring

Pre-Operational Baseline Monitoring: Pre-operational monitoring and environmental baseline characterization has been completed in consultation with WDEQ, BLM, and USNRC and in accordance with appropriate regulations and guidance documents. In cases of overlapping guidance and/or regulation the most extensive requirements have been met. These monitoring and environmental baseline characterization programs have been in place for more than one year and followed the prescribed quality control and assurance requirements. Pertinent data is summarized in Part 6 of this Plan of Operations and within the WDEQ Appendix D section of Mine Permit 381C Addendums 2011.

Mineral Processing Facility Construction and Operations: Mineral processing facilities requiring a USNRC Source Materials License for construction and operations. Rigid quality control and assurance programs are required as license conditions relating to environmental controls, worker health and safety, and potential off-site exposures for any environmental pathway.

Mine Facility Construction and Operations: Mine facilities are constructed and operated with respect to health and safety under MSHA. This includes requirements for implementation of a site safety plan which includes training, a material handling plan including MSDS data sheets for

all materials, and monitoring and testing of various environmental factors in the work place including but not limited to noise, air quality, dust, and radon gas. All training and monitoring must be documented and demonstrate compliance with appropriate standards.

Operational Monitoring: In addition to internal monitoring of the mine and mineral processing facilities, external monitoring of ground and surface water, fugitive dust, and radiological levels is required. Operation monitoring is subject to the same levels of quality control and assurance as are applicable to pre-operational monitoring.

2.6 Spill Contingency Plans

Spill contingency plans are applicable to both mine and mineral processing operations and for transportation.

Mine Operations: Mine operations use a variety of fuel and lubricants as well as other solvents and chemicals in daily operations. All fuel and lubricant storage areas will be enclosed with berms capable of containing any spill plus adequate free board from any storage tank. The pad and berm will be constructed of compacted clay amended soil and/or geosynthetic clay liner (GCL). Mine shops and warehouses will be equipment with drain and waste containment sumps to contain any spills. All spilled fuel, and waste from lubricant and solvent will be recycled and/or disposed off site at a duly licensed facility.

Mineral Processing: The mineral processing facility including the heap leach pad area is design to contain all flows and spills and the Probable Maximum Precipitation (PMP) event. The heap pad area is design with a positive drain and collection system which first report to the Collection Pond. Any spill not contained in the processing facility even in the event of complete loss of power will gravity drain to the raffinate pond which in turn would overflow into the collection pond under extreme conditions. Finally the collection pond is designed with an overflow to the holding pond which has sufficient design capacity for all operational solutions and containment of the PMP including an allowance for freeboard and potential wave action.

Process ponds (Collection Pond and Raffinate Pond), the heap leach pad and liquid waste containment pond (Holding Pond) are double lined with leak detection systems, which will be monitored regularly according to standard operating procedures to ensure prompt assessment of primary containment system performance. In addition, ground water monitoring down gradient of these mineral processing facilities will ensure prompt detection of any adverse impacts to ground water quality in the unlikely event that the triple liner systems fails. Leak detection monitoring and ground water monitoring is addressed in more detail in the Monitoring Plan presented in Section 4.

Transportation: Transportation both to and from the mine and mineral processing operations is subject to DOT regulations including requirements for a spill response plan. Transportation to the operation will primarily involve diesel fuel, consumable items such as reagents and acid for mineral processing, and explosives for the mine. Transportation from the operation will primarily include “yellowcake” product with is a solid product packaged in approved 55 gallon drums for shipment.

2.7 Project Schedule

The project schedule is dependent on a variety of factors including permitting and licensing, as well as market and financial circumstances. The current schedule anticipates submittal of all licenses and permits in 2011; start of construction and/or pre-production activities in 2013 and production in 2014. The mine and mineral processing operations are market dependent.

2.8 Site Access and Infrastructure

Primary access roads and the majority of utility services are pre-existing. A ROW application for a utility corridor from the heap facility area (located on Private land) to the Sheep I and Sheep II shafts is in progress. The main water supply pipeline for the plant will be located on private lands from the McIntosh pit to the plant site. Figure 2.7-1 – Site Access and Utilities shows the planned locations for major access roads and utilities.

2.9 Public Safety and Facility Maintenance

Access to the site will be controlled by fencing at the Mine Permit 381C boundary and internally at the Radiation Control boundary.

Initial public access to the mine and heap leach facility will be controlled through a single entrance with a guard shack manned during operating hours and gated at all other times. The mine facility will be regulated by MSHA and the State Mine Inspectors Office. Any persons wishing to enter the facility will be required to complete safety training as required by regulations and be equipped with proper Personal Protective Equipment (PPE) depending on which areas they wish to enter.

The heap leach processing facility is internal to the mine permit and will be enclosed by additional fencing. As with the main entrance to the project, the entrance to the radiation control area will be protected by a guard shack manned during operating hours and gated at all other times. In addition to confirming safety training all visitors accessing the radiation control area will be subject to radiometric scanning prior to entering the area and prior to leaving the area. All visitors and personnel will have to pass the scan out procedure prior to leaving the facility.

With respect to facility maintenance, regulatory requirements both MSHA and USNRC require maintenance of a clean safe workplace. Titan will establish Standard Operating Procedures (SOPs) governing safe work practice including general maintenance and housekeeping.

FREMONT COUNTY SOLID WASTE

BLM

S17

S16

STATE OF WYOMING

STATE OF WYOMING

BLM

GREEN MOUNTAIN 46 RANCH INC

BLM

S15

ACCESS ROAD TO SHEEP I WILL BE MAINTAINED THROUGH THE CONGO PIT DURING MINING OPERATIONS

CONGO PIT

BLM

STATE OF WYOMING

SPOILS 2

S20

BLM

S21

BLM

BLM

S22

GREEN MOUNTAI RANCH INC

CROOKS GAP ROAD

WYW 23419

SHEEP I

SPOILS 1

MCINTOSH, CHARLES T

FEUCHUK, ELLEN M

SHEEP II

BLM

S29

S28

BLM

S27

BLM

FEUCHUK, ELLEN M

HEAP PAD

HEAP / PLANT AREA

FEUCHUK, ELLEN M

BLM

S33

BLM

S34

BLM

S32

BLM

FEUCHUK, ELLEN M

LEGEND

- SECTION LINE
- PERMIT BOUNDARY
- EXISTING GAS LINE
- EXISTING PHONE LINE
- LAND OWNERSHIP BOUNDARY
- EXISTING OVERHEAD POWER LINE
- EXISTING ROAD
- EXISTING ROAD TO BE REMOVED / RECLAIMED
- PROPOSED ROAD
- PROPOSED OVERHEAD POWER LINE

T. 28 N. , R. 92 W.

1,500' 0 750' 1,500'

1 inch = 1,500'

BRS ENGINEERING

SITE ACCESS AND UTILITIES

SCALE: 1"=1500'

DRAWN BY: CDS

DATE: 6/15/11

SHEEP MOUNTAIN MINES
FREMONT COUNTY, WYOMING

REVISION DATE: 06/15/11

CAD FILENAME:

DWG. NUMBER: FIGURE 2.7-1

TITAN URANIUM USA INC

Part 3 - Reclamation Plan

3.1 Drill-hole Abandonment

Drilling within the Project area on all lands is regulated and bonded through the WDEQ Drilling Notification process. The active DN for the Project is No. 331. The DN addresses methods and cost for drill hole abandonment and drill site reclamation.

3.2 Regrading and Reshaping

Surface disturbances outside the mine and mineral processing areas related to exploration or other activities will be regraded to approximate original contours. Salvage topsoil will be replaced and the areas revegetation with the approved seed mixture as described in subsequent sections.

3.3 Reclamation Plan

Map 3.1-1 – Final Reclamation Map, shows the proposed final reclamation contours for the project including the mine, mine spoils and mineral processing facility. In general the plan seeks to return the lands to approximate original contours. In total the mine will handle approximately 70 million cubic yard of material of which approximately 6 million cubic yards of material is ore. The ore will be reclaimed in-place at the heap leach facility. Thus, this volume will not be available for mine backfill and reclamation. This volume represents less than 10% of the total pit volume. This deficit is expected to be account for by the swell of the in-place material during excavation such that backfill to approximate original contours will be achievable.

3.3.1 Congo Pit and Mine Spoils

Map 3.1-1 shows the proposed final configuration of the Congo open pit. Note that the extent of the open pit will be determined primarily by mineral economics. Mineralization at the southern limit of the open pit extends and is continuous with mineralization in the Sheep underground. The relative costs of stripping and mining open pit as compared to underground mining costs, along with market conditions will determine the ultimate limit of the Congo pit. The limit as depicted on Map 2.2-1, Operating Plan is considered to reflect the maximum extent of economic open pit mining.

With respect to mine estimation of mine reclamation costs, the overwhelming expense is related to backfill. The proposed mine sequence includes the stripping and mining of up to 16 continuous pits within the overall pit limit shown on Map 2.2-1. Working space constraints will require at least some of the mine spoils from the first 6 pits to be removed from the pit as extra-pit spoils and temporarily stockpiled at the surface. Tonnages of materials are shown on the subsequent table. The extra-pit tonnage equates to a volume of approximately 21 million cubic yards and includes an estimated 2 million cubic yards of mine spoils suitable for final

reclamation cover prior to topsoil replacement. Subsequently, mine spoils generated by the development of pits 7 through 16 will be backfilled internally. Whenever the Congo pit reaches its economic limit, some 21 million cubic yards of material will be returned to the pit as backfill.

Congo Pit Summary of Mine Waste Volumes

Pit	Extra-Pit Overburden/Waste Rock (tons)	Intra-Pit Overburden/Waste Rock (tons)
1	6,750,000	
2	6,750,000	
3	7,600,000	
4	7,600,000	
5	6,000,000	1,600,000
6	4,000,000	2,750,000
7		5,500,000
8		9,800,000
9		3,750,000
10		3,750,000
11		5,600,000
12		5,500,000
13		5,800,000
14		6,000,000
15		8,600,000
16		13,200,000
	38,700,000	**71,850,000**

While the final reclaimed surface configuration will approximate original contours the Congo pit is located in a rather steep upland area and reclamation will employ design criteria developed through geomorphic site investigations completed for the pre-mine conditions which are provided in Mine Permit 381 C, Appendix D6, Addendum 2011. Based on current success with geomorphic mine reclamation techniques as with AML projects in the Gas Hills in creating a diverse and erosionally stable landscape it is proposed that this technique be applied to the Congo pit mine reclamation.

3.3.2 Sheep Underground

The Sheep underground mine is planned to be a cut/fill mine such that the majority of mine waste is in turn backfilled into the mine as ore is successively removed. As such there is limited net mine spoils which reports to the surface. Out-of-mine spoil from the underground mine operations is primarily related to the initial decline development and additional mine development haulages. It is estimated that the total out-of-mine spoil will be less than 500,000 cubic yards. This material will be backfilled in the Paydirt pit initial to create the ore stockpile area. Subsequent out-of-mine spoil would be backfilled within the open pits.

Upon completion of mining all declines, shafts and vents will be capped and/or sealed with a bulkhead. The surface disturbances will be regraded to approximate original contours, topsoil replaced and the site revegetated. For the declines the bulkhead will be at sufficient depth to minimize the potential for mine subsidence to reach the surface. This depth is generally 10 times the mine opening height and will be determined based on the geotechnical factors including the bulking factor end draw angle.

3.3.3 Mineral Processing and Heap Leach Facility

Reclamation of the heap leach and mineral processing facilities will be regulated by the USNRC. Regulatory guidance is incorporate d in NUREG 1620 which addresses cover and long term erosional stability. When the heap leach pad area has been fully consumed and spent heap leach material has been rinsed and stabilized, the spent heap materials will be graded to its final configuration less an allowance of approximately 10 feet for the cap and cover. By product material from the plant decommissioning, liners from the raffinate and holding ponds and any other materials requiring disposal as by product material will be placed in the collection prior to final cover and capping. Map 2.2-2 provides typical details for cap and cover and grading of the heap leach area. Based on current practice the final cap and cover will consist of a radon barrier, capillary break, root protection zones, and an erosion protection layer which will likely be rock cover.

3.4 Riparian Mitigation

Planned operations will not disturb any riparian habitat. No disturbance will occur within the Sheep Creek drainage basin to the east of the Project. The Project is located in portions of the Crooks Creek drainage basin. However, no discharge of mine or process waters to Crooks Creek is anticipated. The only potential discharge to Crooks Creek would be storm water discharge which will be mitigated in accordance with the SWPPP permit. A 500 foot buffer along the eastern edge of Crooks Creek is proposed within which there would be no surface disturbance related to the Project. There will be no disturbance to the western edge of Crooks Creek as all project activities and disturbances occur east of the creek.

3.5 Wildlife Habitat Rehabilitation

Wildlife surveys conducted for approval of the original 381C mine permit involved April 1974 surveys and updated observations in 1980. The bulk of the original wildlife surveys were obtained from a survey conducted by Dames and Moore in April 1974 and documented in an Environmental Report prepared for Western Nuclear, Inc. in May 1974. The mine permit also included results of a Wyoming Game and Fish Department (WGFD) study conducted in south central Wyoming in 1980. As stated in the permit: It was “assumed that the animal density information for vegetation types in southwest Wyoming can be extrapolated to similar vegetation types in the Crooks Gap Area.” Refer to Appendix D-9 of Mine Permit 381C.

Additional surveys were conducted by Real West Natural Resource Consulting in 2010 and monitoring is continuing. Updated information is included in the revision of Mine Permit 381C, Appendix D-9, Soils, Addendum 2011. The new wildlife surveys were completed in consultation with the Wyoming Game and Fish and the Lander District office of the BLM. The surveys conclude that the Project is not located in a Sage Grouse Core Area or within critical winter range for Big Game. No other species of concern or potential habitat for listed species was found to occur within the Project. BLM sensitive species information is included in Part 6 of this Plan of Operations.

3.6 Topsoil Handling

The soils in this portion of Fremont County were studied and mapped to an Order 3 scale by the U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) in 1983. Information regarding Fremont County is available in both electronic and hard copy formats. The NRCS has also centralized dissemination of typical soil series descriptions. This information is available on the internet at www.nrcs.usda.gov. Original soil assessments were completed for Mine Permit 381C and are located in hee 1980 Appendix D-7 Soil Assessment complete by Mine Reclamation Consultants, Inc. This soil survey was conducted during the fall of 1979 on the Western Nuclear, Inc. study area. The soil series identified within the study area included the BlackHall, Cotopaxi, Elk Mountain, Fluetsch, Ryan Park and Typic Cryorthents series. The estimated overall depth of salvageable topsoil was considered to be 0.73 feet. The most common limiting factor described was coarse textures with high percentages of fine sand or coarser material that limited the available water holding capacity. Additional field mapping was conducted by BKS Environmental in 2010 according to techniques and procedures outlined in the National Cooperative Soil Survey. Wyoming Department of Environmental Quality (WDEQ) Land Quality Division (LQD) Guideline 1 (August 1994 Revision) was used as a guide during all phases of the study.

An Order 2 soil survey was conducted in August of 2010. Actual soil boundaries were identified in the field by exposing soil profiles to determine the nature and extent of soil series within the Sheep Mountain Project Area. The soil boundaries were delineated on a 2006 NAIP orthophoto with a relative scale of 1:8,000. Updated information is included in the revision of Mine Permit 381C, Appendix D-7, Soils, Addendum 2011.

With respect to topsoil handling all available suitable topsoil will be salvaged. Topsoil salvage will be directed by ground control personnel experienced with the identification of topsoil and/or other suitable plant growth material which may be encountered during excavation. This may include alluvial soils or buried topsoil from previous mine operations. Salvaged topsoil will be placed in designated stockpile areas. All topsoil stockpiles will be neatly dressed; stabilized with an interim seed mixture approved by WDEQ and BLM; and clearly identified by signage in compliance with WDEQ regulations. The 2010 Annual Report for Mine Permit 381C includes mapping and volume estimates of all know existing topsoil stockpile from previous operations. These stockpiles will be preserved for future reclamation needs in addition to the topsoil which is salvaged.

Topsoil salvage will primarily be accomplished with a 623 self loading paddle wheel scraper or equivalent which is capable of selectively excavation the topsoil. As needed, the scraper will be supported by a dozer or motor grader. The same equipment will be used for spreading the topsoil during final reclamation. Where possible a minimum application rate of 1 foot of topsoil will be maintained. Topsoil salvage from federal lands will be segregated for topoil from other sources and will be replaced only on federal lands.

In addition to topsoil salvage a minimum of 2 million cubic yards of unclassified earthen material will be salvage from the mine excavations. This material will meet WDEQ guidelines for suitability for metals and radionuclides and will be non-acid forming. This material will come from Quaternary alluvial deposits and/or weather Battle Spring Formation meeting the suitability criteria within the planned mine disturbance limits. The minimum volume of material is sufficient for final cover of the mine and heap leach facilities prior to topsoil placement.

Figure 3.6-1, Topsoil Inventory, shows existing topsoil pile locations and anticipated topsoil salvage areas. Some 243,179 cubic yards of topsoil is currently stockpiled. It is estimated that a 668,000 cubic yards of topsoil will be salvaged during mining operations (refer to Appendix D-7, Addendum 2011). This yields a total available estimated topsoil resource of 911,000 cubic yards which, at an application rate of 1 foot per acre would cover an estimated 569 acres. Approximately 530 acres of land will be reclaimed during the course of the project. Thus, sufficient topsoil will be available for reclamation. It is proposed that initial topsoil placement begin at an approximate 1 foot depth and as reclamation proceeds, if there is sufficient topsoil resource, the placement thickness would be increased slightly to fully utilize the available resource.

S17
S16
S15
#1- 2,230 CY
STOCKPILE 7
STOCKPILE 6
#2- 909 CY
CONGO PIT
#20- 1,225 CY
#21- 750 CY
#3- 46 CY
STOCKPILE 8
STOCKPILE 1
STOCKPILE 2
S20
S21
S22
#14- 1,830 CY
#4- 5,000 CY
#13- 875 CY
#22
SHEEP I SHAFT
STOCKPILE 4
SHEEP II SHAFT
#15- 7,000 CY
#17- 3,000 CY
#16- 8,000 CY
STOCKPILE 5
#19- 2,250 CY
S29
S28
S27
#18- 1,500 CY
#8- 74,802 CY
#6- 52,100 CY
#7- 25,880 CY
#9- 6,737 CY
STOCKPILE 3
#10- 11,523 CY
#12- 27,250 CY
S32
#11- 10,272 CY
S33
S34

LEGEND

- SECTION LINE
- PERMIT BOUNDARY
- PLANNED DEVELOPMENT
- EXISTING COVERSOIL STOCKPILE
- PROPOSED COVERSOIL STOCKPILE
- COVERSOIL TO BE SRIPPED AND STOCKPILED

T.28N., R.92W.

1,500' 0 750' 1,500'

1 inch = 1,500'

BRS ENGINEERING

TOPSOIL INVENTORY

SCALE: 1"=1500' | DATE: 6/13/11

DRAWN BY: CDS

SHEEP MOUNTAIN MINES
MINE PERMIT 381C

REVISION DATE: 06/15/11

CAD FILENAME: LP2008/PERMITING/EXISTING CONDITIONS

DWG. NUMBER: FIGURE 3.6-1

TITAN URANIUM USA INC

3.7 Revegetation

Baseline vegetation surveys were completed for Mine Permit 381C. Updated information is included in the revision of Mine Permit 381C, Appendix D-8, Vegetation, Addendum 2011. The 2011 vegetation survey include vegetative diversity and production measurement and recommend reference areas for comparison of vegetative success in reclaimed areas for bond release. BLM sensitive species is addressed in Part 6 of this Plan of Operations.

Subsequent to final grading of the land surface for regarding and prior to topsoil placement, the re-graded surface and available topsoil will be inspected and/or sampled as necessary to determine the need for amendments. The revegetation method proposed is pitting and broadcast seeding. This procedure has been used extensively in Wyoming AML projects such as those completed in the Gas Hills. The advantage of this approach is that the pitting creates a roughened micro surface which minimizes the development of rilling prior to the establishment of vegetation. In addition, in windblown areas the pits capture snow and enhance moisture availability. A discussion of the key steps which will be implemented during revegetation activities follow.

Agricultural Lime

This would only be necessary where the materials at the final re-graded surface exhibit the potential to develop acidic conditions. This is considered unlikely based on the overburden analysis previously discussed and the intent to segregate suitable material for final cover prior to topsoil placement in volumes sufficient to cover the mine and heap areas prior to topsoil placement. If needed, application rates will be determined by sampling of the rough graded surface. Application equipment shall be specifically designed for such work and operated by personnel experienced in such work. Once applied agricultural lime will be incorporated into the re-grade surface by discing within 12 hours of application.

Fertilizer

Fertilizer rates will be determined by sampling of the available topsoil. Fertilizer will be broadcast by equipment specifically designed for application of granular fertilizer. Typically a 2:1:1 (N:P:K) fertilizer will be applied at the specified rate.

Agricultural Ripping

Ripping will be completed prior to topsoil placement, in areas of compacted substrate, and following coversoil placement in all areas. Once ripping and/or topsoil placement is complete no equipment traffic, other than as necessary for completion of revegetation, shall be allowed to cross ripped and/or coversoiled areas. Agricultural ripping, following coversoil placement, shall be done after coversoil has been properly placed on the soil surface and accepted by the Engineer. Agricultural ripping shall not be done more than forty eight (48) hours prior to completion of the pitting and seeding. The contractor shall not agricultural rip more acres than can be pitted and seeded within forty eight (48) hours of the commencement of agricultural ripping. Agricultural ripping shall be done to a depth of twelve (12") inches parallel to the

contour at intervals sufficient to "shatter" compacted materials between rip lines on a single pass of the ripping equipment. The term "shatter' shall be defined for the purpose of these Specifications as sufficient breaking and/or bursting of the compacted soil/overburden, so that a shovel

Pitting and Seeding

Pitting and broadcast seeding is recommended based on successful application of this procedure in similar areas and will be completed within forty eight (48) hours after commencement of agricultural ripping. Final surface tillage operations shall consist of digging approximately eight thousand to ten thousand (8,000 to 10,000) pits per acre as shown on the Plans. Pits shall range in width from eight to eighteen (8" to 18") inches parallel to the slope and in length of eight to twenty four (8" to 24") inches parallel to the contour. Completed basins shall have a minimum depth of six (6") inches and a maximum depth of eight (8") inches when measured by the method shown on the Plans. Pit forming devices shall be preceded by ripper teeth sufficient to reach below the bottom of the pits. Pits shall be constructed in rows parallel to the contour, so that the downslope flow of water is entrapped by the next row of pits. The pitted surface shall have a staggered pattern between adjacent rows of pits. The berm constructed between adjacent pits in the same row shall be sufficient to eliminate any flow of water parallel to the contour. Pits shall be constructed prior to seeding and seed shall be broadcast immediately thereafter with a broadcast seeder as part of the pitting process.

Fall seeding shall be done between September 15 and the time that frost prevents preparation of a proper seed bed. Spring seeding shall be done after the frost leaves the ground and until May 15th.

Broadcast Seeding Without Pitting

Small areas that can’t be pitted may be ripped, disked, and broadcast seeded. The specified seed mix shall be uniformly distributed with a mechanical device specifically designed for such work and the ground thoroughly raked or dragged immediately after seeding to cover the seed with approximately one quarter (0.25") inch of soil. Raking or dragging will be done parallel to the contour. Broadcast seeding without pitting and seeding will be done in all ditch and channel flowline areas. The tolerance for construction of ditches and channels is +/- 0.1 feet. Ditch and channels flowlines shall meet this tolerance following revegetation.

3.8 Materials Handling

As described in Mine Permit 381C, Appendix D5, Addendum 2011, the mining plan will segregate both available topsoil and oxidized surficial mine overburden with low radiological levels for final cover of the mine and heap areas during reclamation. During construction, unsuitable materials can be identified and selectively excavated and placed based on radiological levels, visual identification, and sampling. Radiological levels in excess of 70 MicroR/Hr would indicate unsuitable material and can be readily identified in the field with hand held scintillometers.

3.9 Demolition

Mine Permit 381C addresses the demolition of existing facilities within the Project and the demolition and reclamation of these facilities is addressed in the current bond. New facilities will meet the same demolition conditions and will be bonded in accordance with WDEQ guidance. The only exception will be the facilities within the US NRC restricted boundary. Should portions of these facilities and/or equipment not be regulatory release standards they will be disposed of as 11E.2 waste within the double lined leak detection heap pad area.

3.10 Post-closure Management

Post closure the mine area will be monitored and a bond will remain in place until such time that all reclamation conditions of the permit have been met including but not limited to establishment of vegetation, stabilization of the site with respect to erosion, and demonstration through monitoring that the groundwater system has been returned to its pre-mine water quality.

Post closure in the mineral processing area will require transfer of title to the land to the DOE for long term care and maintenance with the requisite posting of funds for long term care and maintenance. As the processing site in located on private surface controlled by Titan, transfer of the surface rights will be straightforward. However, the area has a split mineral estate administered by the BLM and transfer of those rights to DOE may be required.

Part 4 - Monitoring Plan

Pre-mine environmental baseline monitoring has been completed for a year or more for both the proposed mine are mineral processing areas with respect to:

- Air Quality
  - Particulates
  - Radiological
- Ground and Surface Water
  - Ground water quality and levels
  - Surface water quality and flow
- Vegetation
  - Mapped for diversity and measured for productivity
  - Reference areas established

Within the mine areas WDEQ regulations require post closure monitoring until the site has been demonstrated to be stable with respect to erosion and reclaimed slope stability. During that time water quality and level monitoring will continue. For baseline this data was collected on a quarterly basis. Once it is demonstrated that the hydrologic system has stabilized it is typical to reduce the frequency of sampling to an annual basis. Once all permit conditions have been met bond release will be requested and monitoring would no longer be needed.

Operational Monitoring Plan

Operational monitoring includes environmental monitoring, compliance monitoring, and health and safety monitoring of personnel and workplace. Figure 4.1, page 41c, shows the location of pre-operational monitoring and sample locations for ground and surface water, air quality, and radiological parameters which define environmental baseline conditions in compliance with Federal and State regulations including the BLM, USNRC, and WDEQ. In addition, pre-operational surveys and sampling programs have documented baseline conditions relative to wildlife, vegetation, soils, and climate. The majority of the pre-operational monitoring will be continued during operations although the frequency may change according to permit and/or license conditions. Additional, operational monitoring will be required by regulation and permit and/or license conditions, as well personnel monitoring. Operational monitoring will comply with all state and federal regulations, including but not limited to:

- BLM 3809.401 (4)
    - Primary focus surface and ground water quality and quantity; air quality; revegetation stability; noise; and wildlife.
- WDEQ/LQD
    - Primary focus mine reclamation; revegetation stability, diversity, and productivity; surface and ground water quality and quantity; and erosional stability.
- WDEQ/AQD
    - Primarily fugitive dust and carbon emissions.
- WDEQ/WQD
    - Primarily SWPPP and although not anticipated, surface water discharge.
- USNRC
    - Primary focus all environmental pathways (air, water, soils, flora and fauna) for radiological and non-radiological constituents.
    - Radiation exposures both occupational and to the general public
- USEPA
    - Primary focus Radon gas emissions regulated under NESHAPS
- MSHA
    - Primary focus worker health and safety including fugitive dust; underground working levels with respect to gases; exposures to chemical and solvents; and noise.
- Wyoming State Mine Inspector
    - Primary focus worker health and safety
- Wyoming State Engineer's Office
    - Primary focus impoundments and water rights
- Wyoming Game and Fish and US Fish and Wildlife
    - Primary focus wildlife

Some of the operational monitoring requirements will be based on subsequent license and permit conditions and are not fully defined at this time. A discussion of the major aspects and proposed operational monitoring follows. Tables 4.1 and 4.2 summarize the monitoring programs including monitoring locations, frequency and analytes.

Air Quality and Radiation Levels

Air Quality for the Sheep Mountain Project is regulated by USNRC for radiological parameters from the mill site and WDEQ/AQD from the mine site as delegated to the State from the USEPA. Primary concerns are hazardous air pollutants (HAPs) and air borne particulates fugitive dust (AQD) and radiological particulates and radon gas (USNRC). Figure 4.1 shows the location of current air monitor stations which monitor radioparticulates, radon-222 and direct gamma radiation, no site PM-10 or PM-2.5 data have been collected to date. Five of the nine air monitors have been collecting continuous air samples for a minimum of 1 year. Four additional monitor stations have been established and are proposed for point-of-compliance operational monitoring. Air monitors 2 and 3 are well removed from the mineral processing facilities and were established for environmental baseline determination. Pending the outcome of AQD permitting the existing monitoring locations as well as PM-10 particulate monitors may or may not be needed. At a minimum air monitor 2 will need to be relocated as it falls within the current open pit footprint. To ensure compliance with 10 CFR 20.1301, 20.1302, and 20.1501 air monitoring will be conducted on a continuous basis. Additional mobile measurements will be taken as required within the work place.

Mine related air quality monitoring and measurements will be required for underground working levels to protect workers health and safety as required by MSHA and the Wyoming State Mine Inspector's Office. EPA will require monitoring of radon gas from mine vents as per 40 CFR Part 61, subpart B, however, the extent and frequency has not yet been established.

Additional radiological characterization of site has been completed including surface gamma measurements, soil sampling and analysis, and radon flux measurements to determine background conditions. Similar radiological surveys will be completed during reclamation and decommissioning of the mine and mineral processing facility to ensure compliance with state and federal regulations.

Site Stability

Site stability and erosion is being monitored under the existing Storm Water Pollution Protection plan (SWPPP). The SWPPP will be updated as needed when site conditions either related to new mine disturbance or mine reclamation change. The SWPPP call s for routine inspection and spot inspection following significant precipitation or runoff events.

Wildlife

Wildlife surveys have been completed for the project in consultation with BLM, Wyoming Game and Fish, and US Fish and Wildlife. The results of the wildlife surveys are included in Appendix D-9 and referenced under Part 6.9 of the Plan of Operations. Titan intends to continue wildlife surveys prior to and during mine operations focused on species of concern and wildlife mortality.

Vegetation

Vegetation monitoring for radionuclide uptake is required by USNRC regulations on an annual basis. WDEQ regulations require monitoring of areas that have been revegetated for cover, diversity, and productivity. Revegetated areas are compared to pre-established reference areas to measure the success of revegetation and to ensure the reclaimed lands have been returned to pre-mine land use.

Surface Water

Surface water has been continuously monitored for a minimum of 1 year along nearest potential receiving surface water body, Crooks Creek at three locations as shown on Figure 4.1 to establish background conditions up gradient of the project, immediately adjacent to the project, and down gradient from the project. In addition, two ephemeral impoundments are sampled on an opportunistic basis. Surface water monitoring will continue during operations on a quarterly basis and includes both WEDQ and USNRC water quality parameters in addition to water flow measurements. Additional sampling will be conducted as appropriate should a spill or excursion be detected.

Ground Water

Ground water monitoring to establish baseline hydrologic and water quality conditions both up gradient and down gradient of the proposed mine and mill has been completed with a continuous record of at least 12 months. In addition, some ground water monitoring wells and the McIntosh Pit, a legacy uranium mine pit filled with ground water, have been sampled continuously on an annual basis since 1988. In addition, four new wells have been established and are proposed as ground water compliance wells for operations. Ground water monitoring will continue throughout the life cycle of the project according to the NRC approved license and the WDEQ Permit to mine. Ground water sampling will be conducted on a quarterly basis and includes both WEDQ and USNRC water quality parameters in addition to water level measurements. Additional sampling will be conducted as appropriate should a spill or excursion be detected.

Early Detection Operational Monitoring

Early detection operational monitoring is focused on mineral processing operations and includes:

- Routine measurement of solution flows in relationship to the anticipated water balance.
- Routine inspection of the heap leach and plant site.
- Continuous monitoring of leak detection systems.

Flow of solutions throughout the system will be automatically measured and recorded using a supervisory control and data acquisition system (SCADA). Anomalous flow conditions in the system will be immediately investigated to determine the cause and need for corrective action.

Routine inspection of the plant and heap site will include general observation of all work areas with respect to general housekeeping and to insure that all instrumentation is functioning properly. Inspections will include visual inspections of the perimeter of the plant, ponds and heap and inspection of the leak detection systems. Logs of all inspections will be kept and addressed in internal weekly, monthly and annual inspection reports.

Leak detection systems will monitor each of the 4 cells within the heap and all ponds. Any flow within the leak detection system will be directed by gravity flow to individual sumps with automatic level alarms and pump back systems. Leak detection as required by 3809.420(b)(12)(ii) is further discussed under 2.2.3 MINERAL PROCESSING, page 23.b of the Plan of Operations.

Personnel and Workplace Monitoring

Monitoring of personnel and workplace is required in the mines (surface and underground), the mineral processing facility, and in all office and maintenance facilities with respect to potential occupational exposures. The nature, extent and frequency of personnel and workplace monitoring varies based on the potential exposure pathways and risks. In all areas occupational exposure to chemical and solvents are regulated and MSDS are required for all chemicals in use or stored on site.

Within the radiation control boundary all personnel and visitors are required to complete radiological scans prior to entry of the area and prior to exiting the facility. Work areas within the radiation control will be monitored either through fixed instrumentation or routine testing, as determined by the license conditions. Personnel working in radiation protection areas will be equipped with individual monitors and/or badges. In addition, workers within the radiation protection areas will participate in a routine bioassay program to further monitor exposure to radionuclides for mineral recovery operations.

Work areas subject to dusty conditions or chemical fumes such as portions of the maintenance facilities, portions of the mine, portions of the mineral processing facility, areas around crushers, and transfer points on conveyors will be monitored either through fixed instrumentation or routine testing as required. Engineering controls will be employed in such areas to minimize exposures to the extent practicable. If the levels cannot be reduced sufficiently through engineering controls to meet regulatory requirements then Personal Protective Equipment (PPE) will be required of all persons entering or working in such areas.

Noise

The National Institute for Occupational Safety and Health (NIOSH) recommends an exposure limit for workplace noise of 85 dBA for a duration of 8 hours per day (NIOSH 1998). Exposures at and above this level are considered hazardous. Depending on the type of construction and the equipment being used, noise levels resulting from construction activities might reach or occasionally exceed 85 dBA near the source. Hearing protection will be required for workers in any work area where engineering controls cannot reduce noise levels below 85 dBA. The Sheep Mountain Project will comply with MSHA regulations which require a hearing protection program which complies with NIOSH standards and includes monitoring of the work place including facilities, the open pit mine, and the underground mine. For any work areas exceeding 85 dBA which cannot be reduced by implementation of practicable engineering controls, personnel hearing protection will be required. MSHA regulations further require routine worker screening for hearing loss.

With respect to general on-site and off-site noise levels. The site is characterized as rural grassland with varied topography. Other land uses include oil production, crop production, transportation, recreation, and wildlife habitat. Due to the remote location of the proposed project area and low number of nearby noise receptors, noise impacts are expected to be small.

Noise levels associated with the open pit will generally be limited to the operation of construction equipment and the crusher/conveyor. Open pit operations are scheduled for daylight operations on a nominal 5 day per week schedule. Noise levels associated with the underground mine will be limited due to the lack of associated surface activities. Mine exhaust vents at the Sheep I and II shafts will be comprised of electric fans operated by line power which would emit a low steady hum related to the electric motors.

Construction background noise is ~86 dBA. Other more specific equipment may be as high as 105 dBA at 100 ft. The dBA level would be diminished by 300 dBA over a mile (roughly 50 times distance at a drop of 6 dBA per distance multiplier). It is assumed that if noise measurements were taken at the site boundary it would be a half mile away from construction

activities and a reduction of 150 dBA (LHSFNA 2011). Based on these assumptions all noise generated from construction activities will dissipate to background levels in less than ½ mile.

Occupational noise levels will be monitored per MSHA and/or NIOSH regulations. Environmental noise will be estimated based on distance from the source and confirmed with spot measurements for initial operating conditions and updated annually.

Corrective Action

If operational monitoring detects levels constituent(s) in excess of expected or permitted levels, considering background conditions and variability, indicating a possible excursion, state and federal regulations require timely reporting dependent on the nature and location of the event. Although the specific response will be dependent upon of the nature and location of excursion, the general approach following discovery will be:

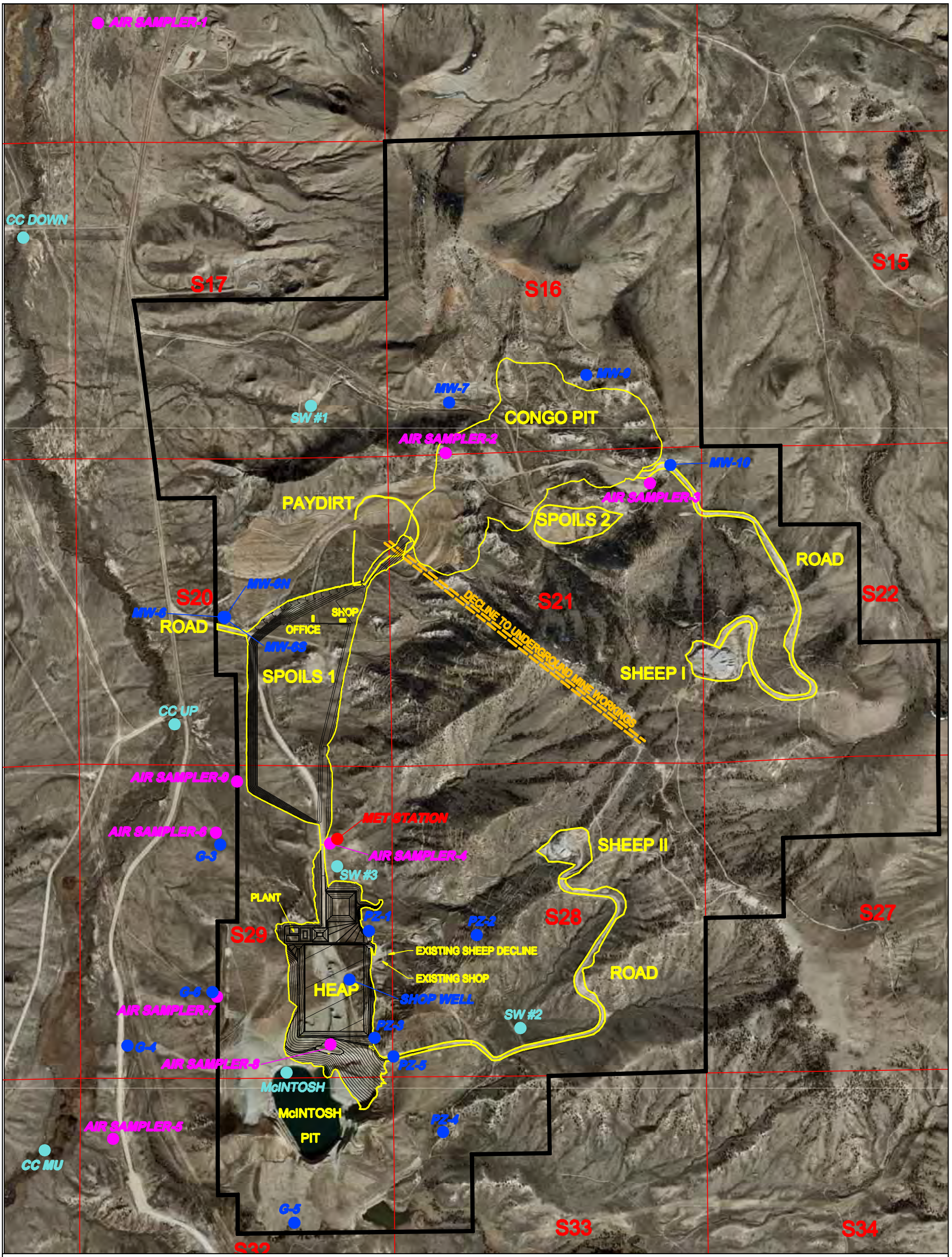
- Determine if emergency response and/or immediate action is required
- Take appropriate initial action to secure the location of impact from public access, isolate the area of impact from the environment and stop the excursion at its source if possible.
- Assess the excursion with respect to public safety and the environment.
- Notify the appropriate regulatory agencies within required timeframes.
- Clean-up and dispose of associated wastes as appropriate.
- Restore the site
- Follow up with site personnel and regulatory authorities to assess the event and measures to prevent reoccurrences of a similar nature.

Table 4.1 Summary of Site Environmental Monitoring Program

Media	**Locations**	**Frequency**	**Parameter Table**	**Agency**
Ground Water	**Mine:** PZ-6, -7, -8, -9, -10, MW-7, McIntosh Pit **Mill:** PZ-1, -3, -4, -5, G-3, -4, -5 Point of Compliance Wells (TBD)	Annual Quarterly	Table 1.0 (Field Parameters) Table 3.0 (GW) Table 1.0 (Field Parameters) Table 3.0 (GW)	WDEQ NRC
Surface Water	CrookUS1, CrookUS2, CrookDS SW-01, SW-02	Quarterly As water is available after rainfall	Table 5.0 (Flowing SW) Table 4.0 (Impounded SW)	NRC NRC
Air	**Mine: (TBD)** **Mill:** AM-1, -4, -5, -6, -7, -8, -9	As required by WDEQ/AQD Permit (TBD) Continuous measurement, Qrtly sampling	TBD Table 2.0 (Air Particulates)	WDEQ NRC
Noise	Permit Boundary, Mine Areas (TBD)	Quarterly	dB	MSHA/NIOSH
Soil	Downwind of Mill Area (TBD)	Annual	Table 7.0 (Soil & Sediment)	NRC
Vegetation	Downwind of Mill Area (TBD)	Annual	Table 6.0 (Veg, Food, Fish)	NRC
Wildlife	Raptors Large Game Sage Grouse	Seasonal, annually Seasonal, annually Seasonal, annually	NA NA NA	WDEQ WDEQ WDEQ

Table 4.2 Operational Monitoring:

Media	**Locations**	**Frequency**	**Parameter Table**	**Agency**
Stability/SWPPP	**Mine:** (as per SWPPP) **Mill:** (as per SWPPP)	Monthly, opportunistically after rainfall Monthly, opportunistically after rainfall	Visual observation of landform stability, sediment control, storm water discharge	WDEQ
Early Detection Monitoring	Heap Leach Pad Collection Pond Raffinate Pond Holding Pond Plant Buildings	Daily, Weekly, Monthly Annual	Unat, Ra-226, Th-230, Pb-210, Po-210, SO_4 as per license (TBD)	NRC
Personnel & Workplace	Radiation Control Areas	Personnel: Continuous, qrtly sampling Bioassay Workplace: throughout buildings	Radon-222, direct gamma Unat Radioparticulates, Radon-222 & daughters, Beta/gamma radiation	NRC



LEGEND

- SECTION LINE
- PERMIT BOUNDARY
- MAXIMUM EXTENT OF SURFACE DISTURBANCE
- PROPOSED DECLINE TO UNDERGROUND MINE WORKINGS
- DESIGN CONTOURS CI-10'

MONITORING SITES

- AIR MONITOR
- MET STATION
- GROUND WATER MONITOR WELL
- SURFACE WATER SAMPLING

T.28N., R.92W.

1,500' 0 750' 1,500'

1 inch = 1,500'

BRS ENGINEERING	**MONITORING LOCATIONS** SCALE: 1"=1500' DATE: 8/11/11 DRAWN BY: CDS	**SHEEP MOUNTAIN MINES** **WDEQ MINE PERMIT 381C** **BLM 3809-WYW168184**	REVISION DATE: 8/11/11 CAD FILENAME: LP2008/PERMITING/PROJECT OVERVIEW DWG. NUMBER: 4.1

TITAN URANIUM USA INC

Within the area of NRC jurisdiction similar monitoring is required but would also include radiological parameters. Once all license conditions have been met and the lands transferred to the DOE long term monitoring would be completed by the DOE with funds established by the licensee.

Part 5- Interim Management Plan

Should interim or temporary cessation of operations at the Project be necessary, an application for Interim Stabilization would be filed in accordance with WDEQ regulations and subject to review and concurrence by BLM. Such plans require the installation of temporary sediment control measures along with maintenance of established sediment control measures in accordance with the SWPPP. Access would be temporary blocked to any mines openings would which could pose a hazard to the general public and/or wildlife. Typically such closures would include locking bulkheads and fencing of the general area. In addition, access to structures and/or open pit mines which could pose a hazard or attractive nuisance to the public would be limited by constructed barriers which could include fencing, berms, or other measures.

With respect to potentially deleterious materials and expose heap leach or ore stockpiles would be temporarily capped or cover to minimize dispersion by wind or other erosive forces.

Interim Management Plan

Interim management plans are required under 3809.401(5) and by both WDEQ/LQD and USNRC regulations. In the advent of circumstances requiring interim cessations of mine and or mineral processing operations, the BLM, WDEQ, USNRC, and other regulatory agencies will be promptly notified.

WDEQ/LQD Noncoal Standard Operating Procedure 2.1, 1999, states "If mining (initiation of backfill) is halted for periods exceeding 180 days and primarily for economic reasons, the permittee must submit a Request for Interim Mine Stabilization (Request) under Noncoal Rules, Chapter 3, Section 2(k)(ii)(A). This provision does not elaborate on the "economic conditions" which may trigger a Request. The Request may apply to all currently disturbed lands or to specific disturbed units (e.g. an individual pit) within the permit area. A permittee may seek approval for reclamation delays up to five years in length. A permittee may request renewal of the Interim Mine Stabilization under Noncoal Rules, Chapter 3, Section 2(k)(ii)(D).

USNRC Timeliness in Decommissioning Rule, 1994, and subsequent revisions to 10 CFR 40.42, set forth procedures for a 24-month interim standby period at uranium recovery facilities. If operations have not resumed by the end of that period, the licensee must proceed with decommissioning of the project in accordance with license conditions unless a request for time extension has been request and approved by the USNRC.

Should interim cessation of mining and/or mineral processing operations be necessitated the operation would not immediately shutdown but would proceed in an orderly manner to cease operations and stabilize the site. The cessation of mining and mineral processing could proceed at different rates depending on the status of each operation at the time the decision to place the operation on interim status was made. It is possible, if the mineral processing facility was receiving feed from other mine operations, that mineral processing operations would continue while the mine operations were temporarily ceased.

Interim cessation and stabilization of mine operations would include:

- Filing a request for Interim Mine Stabilization and securing approval of the plan by WDEQ.
- Specific reasons why mining should cease would be provided and the economic conditions which will restore viability to the permitted operation would be outlined.
- Access roads, haul roads, crusher/equipment areas, stockpile areas, buildings, loadout facilities, etc. within the existing permit area which are necessary to allow eventual mining of the reserves and would therefore need to be preserved would be clearly identified.
- All areas requiring stabilization and detail stabilization procedures (e.g. temporary seeding, permanent reclamation, partial backfilling, slope stabilization, safety fencing, etc.) necessary to establish a low maintenance configuration would be identified and addressed upon approval of the plan.

- Any stored fuel, lubricants, or other chemical will be removed from the site and properly disposed of at licensed facilities. Storage vessels will be stabilized or removed.
- No new land disturbance would be created but mining of exposed ore would be completed and all ores would be transferred to the heap leach facility for processing and/or stabilization.
- The primary items of concern are human safety, maintenance of surficial stability on all lands within the Permit Area, sediment control (or minimization of sediment loss) for all disturbed lands and environmental protection.

Interim cessation and stabilization of mineral processing operations would include:

- Completion of active leaching operations to remove soluble constituents.
- Plant equipment including tanks and vessels will be drained, decontaminated and protected for future use.
- Interior surfaces in all process facilities, main plant and SX, will be decontaminated and cleaned.
- Solids will be removed from the rafinate, collection, and holding ponds. Liners will be decontaminated and clean.
- Fuel, reagents, and other chemical storage on site will be drained and stabilized for future use.
- Any wastes generated by the decontamination and cleanup process would be disposed of within the heap leach pad area, stabilized and covered.
- The heap leach facility including pads, ponds, and the plant will be secured from public access. Site security will be maintained by physical presence and/or remote surveillance as approved in the interim plan.

Monitoring and corrective action:

- Facilities will be routinely inspected on a monthly basis. The inspected areas would include both the mine and mineral processing areas, perimeter fencing, and components of the SWPPP.
- Any discovery of breach of the site infrastructure will be immediately reported to the respective regulatory authorities. Potential hazards to human health of the environment will be assessed and reported as required. Remedial action would then proceed in a timely manner with approval of the respective regulatory authorities.
- Environmental monitoring for ground and surface waters, radiological levels, and air particulates would continue at operational frequencies unless otherwise approved by the respective regulatory authorities.

Part 6 - Operational and baseline environmental information

6.1 Land Use
Non-mining land uses include stock grazing, wildlife, oil and gas production, and recreation. Post-mine land use will be unchanged. Refer to Appendix D-1 – Addendum 2011

6.2 History

Refer to Appendix D-2 – Addendum 2011

6.3 Archeology
Cultrual surveys have been completed and submitted separately to BLM. Refer to Appendix D-3 – Addendum 2011

6.4 Climatology
An on-site weather station has been in place for a year along with air monitoring stations. Refer to Appendix D-4 – Addendum 2011

6.5 Geology
Additional characterization of mine overburden has been completed. A selective material handling plan to segregate suitable materials for final cover and reclamation is presented in the Operation Plan. Refer to Appendix D-5 – Addendum 2011

6.6 Hydrology
In addition, to wells which have been continuously monitored since 1988, a comprehensive ground and surface water monitoring program has been established. Refer to Appendix D-6 – Addendum 2011

6.7 Soils
Topsoil resources have been evaluated and are sufficient to support mine reclamation goals. Refer to Appendix D-7 – Addendum 2011

6.8 Vegetation
Vegetation diversity and productivity has been quantified. Refer to Appendix D-8 – Addendum 2011. A supplemental report on Limber Pine, a BLM sensitive species, is attached.

6.9 Wildlife
No critical habitat or sensitive species will be affected by the proposed mine operation. The project is not located within the Sage Grouse core area or within critical winter range for Big Game. Refer to Appendix D-9 – Addendum 2011

6.10 Radiology
Baseline radiological conditions and background levels, NORM and TENORM, have been defined. It is a reclamation goal to insure post-mining radiological levels are lower than current levels. Refer to Appendix D-10 – Addendum 2011

Part 7 - Reclamation cost estimate

Included in WDEQ/LQD Mine Permit 381 C

The current reclamation bond is a follows:

Permit No. 381C

Revised Bond Calculation Summary 7-20-2010

ITEMIZED TOTAL BY AREA

Monitoring	$28,620.00
Sheep Declines	$37,859.84
Sheep I Cap	$16,244.00
Roads	$198,931.16
Monitor Wells	$21,137.20
McIntosh Shop area	$125,558.99
TOTAL	**$428,351.19**

TOTAL FROM SUPPLEMENT DOCUMENT

McIntosh Pit	$515,982.00
Sheep I	$41,398.00
Sheep II	$61,665.00
SUPPLEMENT TOTAL	**$619,045.00**

SUBTOTAL **$1,047,396.19**

MISCELLANEOUS ITEMS FROM WYDEQ GUIDELINE 12

Design final reclamation project, 6.25%	$65,462.26
Contractor profit, overhead, mob and demob10%	$104,739.62
Construction management, 4.25%	$44,514.34
Site monitoring, 0.5%	$5,236.98
Unknown costs, 4%	$41,895.85
Total Miscellaneous Items 25%	**$261,849.05**

TOTAL BOND PER CURRENT APPROVED RECLAMAITON PLAN **$1,309,245.24**

ADDITIONAL BOND RECOMMENDED FOR SHEEP I AND II SHAFT AREAS **$445,442.00**

Note: Based on excavation and/or regrading of an estimated 292,536 cy of mine spoil at the Sheep I and II sites at an average cost of $1.50 per cy plus 25% from miscellaneous allowance required by Guideline 12, in place of the current bond estimate.

BOND AMOUNT **$1,754,687.24**

The current mine reclamation commitments for the project include:

1. Existing Sheep declines. This site work will include bulk heading, site regarding, replacement of topsoil and revegetation and will be completed once the proposed new decline is completed, at which time the existing declines would be redundant.
2. Sheep I cap. This site work will include the installation of a permanent surface cap over the shaft. This work will be completed in 2011. The cap will include access ports for monitoring and dewatering.
3. Access Roads. This site work applies to the site access roads as shown on the Operating Plan, Map 2.1. Portions of the existing access road will be reclaimed once mine operations commence. Notably the site access via Hank's Draw will be removed and reclaimed.
4. McIntosh Shop Area. The current reclamation plan requires the demolition of the existing mine shops and reclamation of the area. The current plan includes burial of the existing, permitted solid waste disposal facility and the shop foundations prior to site reclamation. In 2011 the mine shops will be demolished and all material removed. In concert with this activity, although not require by the mine permit, the solid waste facility will be excavated and removed. Sellable scrap metal will be salvaged all other solid waste will be properly disposed of off-site at the Fremont County facility.
5. Sheep I and II shaft areas. The current reclamation requirements include re-grading of the mine spoils and reclamation of the shaft sites in-place subsequent to capping of the shafts. The proposed Operation Plan will maintain the shafts for dewatering, mine ventilation, and emergency ingress and egress. Mine spoils including low grade ore stockpiles will be removed from the site but final reclamation will not be completed until such time as mining is completed at the Sheep Underground Mine. Mine spoils from the Sheep II shaft area will be removed in 2011 and backfilled in the northern portion of the McIntosh Pit. Mine spoils at the Sheep I shaft will be backfilled in the Congo pit when a suitable backfill area can be established. Stockpiled ore will be processed at the proposed heap leach facility.
6. McIntosh Pit. The current approved reclamation plan requires Titan to reduce ½ of the current highwall (northern and western sides) for access and allows the remaining highwalls and ground water impoundment to remain as a reclamation reservoir. The Wyoming Department of Environmental Quality, Abandoned Mine Lands Division (AML) has determined the McIntosh pit to be eligible for its program once the bond obligation has been met. A portion of the north highwall will be partially backfilled in 2011 as part of the removal on mine spoils from the Sheep II shaft area. The remaining highwall reduction obligation will be met by backfill during construction of the heap pad (refer to Map 2.1, Operating Plan). Based on discussions with AML and current practices for similar sites, it is anticipated that AML will seek approval to backfill the McIntosh pit above the expected ground water recovery level and reduce the highwalls which would remain once Titan's reclamation obligation has been met. In addition, AML would likely consider reclamation alternatives for the establishment of flow through surface drainage.

Sheep Mountain
Plan of Operations
BLM Sensitive Species

Threatened, Endangered, and BLM Sensitive Plant Species Report

For Titan Uranium USA, Inc.- Sheep Mountain Uranium Project

Legal Description: T28N, R92W, Sections 16, 17, 20-22, 27-29, 32, and 33

Prepared for:

Titan Uranium USA, Inc.
Greg Adams
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Prepared by:

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P.O. Box 3017
Rock Springs, WY 82902

June 2011

Table of Contents

Introduction:

The Sheep Mountain Project Area is located within T28N, R92W, Sections 16, 17, 20-22, 27-29, 32, and 33, totaling approximately 3,605.55 acres. The soils within the project area are generally coarse loamy and primarily formed from weathered sedimentary bedrock consisting mainly of sandstone. The two major vegetation communities present within the Sheep Mountain Project Area include Limber Pine-Big Sagebrush and Sagebrush-Grass. The vegetation communities are named for the 1980 WDEQ permit for the mine site. The minor vegetation community is Reclaimed Grassland. There are also large portions of disturbance within the project area.

There are several proposed disturbance areas, within the Sheep Mountain Project Area. The proposed disturbance areas total approximately 666.1 acres, of which, approximately 63% has been previously disturbed by past mining activities. Within the proposed disturbance areas activities associated with the uranium mining process will occur and include pit disturbances, spoil piles, and a heap leach area. Pit disturbances will occur within the Congo Pit, West Congo Pit Extension, Paydirt Pit, and the North Gap Pit. There are two proposed spoil piles: the West Spoils and the South Spoils. There are two alternative locations for the heap leach disturbance areas: the Paydirt Heap Leach (alternative one) and the McIntosh Pit (alternative two). The primary vegetation community present in the Congo Pit and West Congo Pit Extension areas, affected by the proposed mining activities, is the Sagebrush-Grass; however, smaller areas of the Limber Pine-Big Sagebrush, Reclaimed Grassland, and disturbance areas are also present and will be affected. The other pit disturbances, spoil piles, and heap leach locations will primarily affect the Sagebrush-Grass, Reclaimed Grassland, and disturbance areas.

The Limber Pine- Big Sagebrush vegetation community had approximately 41% vegetative cover and is dominated by *Pinus flexilus* (limber pine), *Artemisia tridentata* (big sagebrush), *Artemisia nova* (black sagebrush), *Chrysothamnus viscidiflorus* (Douglas rabbitbrush), *Purshia tridentata* (antelope bitterbrush), *Elymus spicata* (bluebunch wheatgrass), *Festuca idahoensis* (Idaho fescue) and *Poa* species (bluegrass). The Sagebrush-Grass vegetation community had approximately 37% vegetative cover and is dominated by big sagebrush, black sagebrush, *Ericameria nauseosusa* (rubber rabbitbrush), and Douglas rabbitbrush. The Reclaimed Grassland vegetation community had approximately 40% vegetative cover and is dominated by *Hesperostipa comata* (needleandthread), *Elymus trachycaulus* (slender wheatgrass), *Elymus smithii* (western wheatgrass), and *Elymus lanceolatus* (thickspike wheatgrass).

Two threatened and endangered species were surveyed for: *Penstemon haydenii* (blowout penstemon) and *Spiranthis diluvialis* (Ute ladies'-tresses). The Bureau of Land Management (BLM) Lander Field Office (LFO) listed 11 sensitive plant species, as of March 2010.

Methodology:

BKS Environmental Associates, Inc. (BKS), of Rock Springs, Wyoming, conducted threatened, endangered, and BLM sensitive plant species surveys in June, July, and August 2010. BKS used recreational grade GPS units (accuracy 3 to 15 meters) to mark any areas of potential habitat and individuals or populations of BLM sensitive plant species. BKS contacted the Wyoming Natural Diversity Database (WYNDD) to determine if any threatened, endangered, or BLM sensitive plant species occurred within the project area. Natural Resource Conservation Service (NRCS) soil map units were overlay on 2006 National Aerial Imagery Program (NAIP) true color ortho aerial imagery to

determine areas of potential habitat, based on soil characteristics, for threatened, endangered, and BLM sensitive plant species. Field surveys utilized both vehicular and pedestrian reconnaissance to determine potential habitat and species presence. Table 1 lists the BLM sensitive species and their habitat and phenology, as well as, an explanation of habitat potential in project area.

Table 1: BLM Sensitive Species and Explanation of Potential Habitat in Project Area					
Common Name	Scientific Name	Habitat Characteristics	Soils	Phenology	Explanation of Potential Habitat
Meadow Pussytoes	*Antennaria arcuata*	Moist, hummocky meadows, seeps or springs surrounded by sage/grasslands 4,950-7,900'	Clayey soils with high organic matter	July-September	Surveyed for in August in conjunction with *Spiranthes diluvialis* surveys. No habitat or individuals were found within the project area.
Porter's Sagebrush	*Artemisia porteri*	Sparsely vegetated badlands of ashy or tufaceous mudstone and clay slopes 5,300-6,500'	Semi-barren, low desert shrub. Dry, whitish, ashy-clay hills, gravelly-clay flats, Wagon Box Formation	June-July	Habitat characteristics not found within the project area. No individuals or habitat found within the project area.
Dubois Milkvetch	*Astragalus gilviflorus* var. *purpureus*	Barren shale, badlands, limestone, redbed slopes, and ridges 6,900-8,800'	Sandy-clay soils. Soils mostly derived from the Tertiary Wind River or Indian Meadows formations. Cretaceous Cody Shale, Triassic Chugwater, Dinwoody formations, Paleozoic limestone, gravelly moraines.	Late May - Early July	Habitat characteristics not found within the project area. No individuals or habitat found within the project area.
Cedar Rim Thistle	*Cirsium aridum*	Barren, chalky hills, gravelly slopes, and fine textured, sandy-shaley draws 6,700-7,200. Found within openings in big sagebrush grasslands. Also found in bunchgrass or cushion plant communities	Split Rock, White River, Wagon Bed, Wind River, Green River, and Wasatch formations	June-July	Surveyed for in June and July. No individuals or habitat found within the project area.

Table 1: BLM Sensitive Species and Explanation of Potential Habitat in Project Area Continued					
Owl Creek Miner's Candle	*Cryptantha subcapitata*	Sandy-gravelly slopes and desert ridges on sandstones of the Winds River Formation 4,700-6,000'. Occurs within the sparsely vegetated cushion plant communities	Sandstones and conglomerates derived from the Eocene Wind River formations. Some limestones	Late May-June or Mid June to mid July	Habitat characteristics not found within the project area. No individuals or habitat found within the project area.
Fremont Bladderpod	*Lesquerella fremontii*	Meadows, slopes, ridges, and benches in desert foothill, montane meadow, or alpine cushion plant communities on rocky, mesic, limestone derived soils. Rocky limestone slopes and ridges 7,000-9,000'	Limestone derived soils	May-July	Habitat characteristics not found within the project area. No individuals or habitat found within the project area.
Beaver Rim Phlox	*Phlox pungens*	Sparsely vegetated cushion plant communities. slopes on sandstone, siltstone, or limestone substrates 6,000-7,400'	Limestone, volcanic rich sandstone, siltstone, or red-bed clays	May - June	Habitat characteristics not found within the project area. No individuals or habitat found within the project area.
Rocky Mountain Twinpod	*Physaria saximontana* var. *saximontana*	Sparsely vegetated rocky slopes of limestone, sandstone or clay 5,600-8,300'	Sandy, gravelly soils, talus of limestone, red sandstone, or clay	May-Late June	Surveyed for in June. Habitat present within the project area, and within the proposed road disturbance. No individuals were found within the project area.

Table 1: BLM Sensitive Species and Explanation of Potential Habitat in Project Area Continued					
Limber Pine	*Pinus flexilis*	Timberline and at lower elevation with sagebrush. Associated species are Rocky Mountain lodgepole pine, Engelmann spruce, whitebark pine, Rocky Mountain Douglas-fir, subalpine fir, Rocky Mountain juniper, Mountain Mahogany, and common juniper			Surveyed for in June. Habitat and populations present within the project area and within the disturbance areas.
Persistent Sepal Yellowcress	*Rorippa calycina*	Found primarily along moist sandy to muddy banks of streams, stock ponds, and man-made reservoirs near the high-water line at 3660-6800 feet. Most populations are in semi-disturbed or recently flooded openings in small inlets or bays		Late May - August	Habitat characteristics not found within the project area. No individuals or habitat found within the project area.
Barneby's Clover	*Trifolium barnebyi*	Ledges, crevices, and seams on reddish -cream Nugget Sandstone outcrops 5,600-6,700'	Reddish cream Nugget Sandstone	May-July	Habitat characteristics not found within the project area. No individuals or habitat found within the project area.

Field reconnaissance surveys for BLM sensitive plant species were conducted in June, July, early August, and late August, 2010, to ensure surveys for all plant species were conducted during peak flowering periods. Field reconnaissance surveys were conducted for all BLM listed sensitive plant species, with efforts focused on limber pine, *Physaria saximontana* var. *saximontana* (Rocky Mountain twinpod), and blowout penstemon on June 22, 2010. Limber pine and Rocky Mountain twinpod, both BLM sensitive plant species, were surveyed for in areas that had sandy and gravelly soils. Areas to consider as potential habitat, for blowout pensteomon, should be at least 100 feet from top to bottom, have relatively fine sandy soils three feet in depth, and vegetation cover no greater than 30%. The presence of ant hills, sagebrush on the ridge of the slope, coarse sand, coarse fragments, and indicators of water vs. wind erosion indicate the area should not be considered potential habitat. Habitat and species surveys for Ute ladies'-tresses, *Antennaria acuata* (meadow pussytoes), and resurveying of limber pine populations were conducted on August 2 and 3, 2010. Pedestrian reconnaissance was conducted along the southern edge of the project area near the pond and drainage for Ute ladies'-tresses and meadow pussytoes.

In June 2011 BKS conducted tree density counts for the limber pine using the point center quarter method and measured distances from point to plant for a maximum of 50 feet. This method was used to estimate the total number of trees per acre within the limber pine habitat areas. BKS also used 2009 NAIP imagery to count the number of trees within the disturbance areas.

Results:

No threatened or endangered plant species or species habitats were found within the project area. No BLM sensitive plant species or threatened and endangered plant species records, for the project area, were found in the WYNDD database (February 2011). Sandy soils within the project area had greater than 30% ground cover, excluding the sandy areas as potential habitat for blowout penstemon. No habitat or individuals or populations of Ute ladies'-tresses were present within the project area. The banks of the pond located in Section 32 and 33 were dominated by *Hordeum jubatum* (foxtail barley), *Carex stenophylla* (needleaf sedge), and *Carex nebrascenis* (Nebraska sedge). The soil was clay, the water was stagnant, and there was no transition zone between the water and the mesic area of the banks. All of these characteristics are negative indicators for Ute Ladies'-tresses habitat. The drainage leading into the pond in Section 32 from Section 33 did not have water present, thus the lack of a late season water source excludes this area as potential Ute Ladies'-tresses habitat.

The following nine, of the 11 listed BLM sensitive plant species, were not present within the project area and do not have potential habitat within the project area: *Antennaria acuata* (meadow pussytoes), *Artemisia porteri* (Porter's sagebrush), *Astragalus gilviflorus var purpureus* (Dobois milkvetch), *Cirsium aridum* (Cedar rim thistle), *Cyptantha subcapitata* (Owl Creek miner's candle), *Lesquerella fremontii* (Fremont bladderpod), *Phlox pungens* (beaver rim phlox), *Rorippa calycina* (persistent sepal yellowcress), and *Trifolium barnebyi* (Barneby's clover). Potential habitat for the above listed species was determined non-existent based on habitat characteristics, primarily the lack of appropriate soil characteristics, topography, or vegetation communities.

Two of the 11 BLM sensitive plant species had potential habitat within the project area. Limber pine habitat and individuals were present within the project area and within the proposed disturbance areas. Rocky Mountain twinpod potential habitat was present in the project area, but not within the proposed

disturbance area. Photos of habitat and species present within the project area are located in Addendum A and a map of the potential habitat and populations are located in Addendum B.

Pinus flexilus (Limber pine)

Habitat Characteristics:

Limber pine habitat is located anywhere from 5,250 feet to 11,000 feet in the Rocky Mountains. The species is often found on steep rocky slopes that do not support other vegetation types. The soil parent materials are derived from many types including: sandstone, limestone, granite, serpentine, quartzite, shale, obsidian, pumice, and calcareous substrates. The species grows in cold environments and is acclimated to high wind speeds.

Threats:

Often times limber pine communities are found at the edge of sagebrush and grassland communities, the limber pine is often managed by cutting to prevent encroachment into these other communities. The encroachment is thought to occur due to wildfire suppression. Limber pines are also affected the following insect and disease agents: Rocky Mountain pine beetle (*Dendroctonus ponderosae)*, white pine blister rust (*Cronartium ribicola)*, and limber pine dwarf mistletoe (*Arceuthobium cyanocarpum)* (Means 2010). These insect and disease agents are the leading causes of limber pine decline in the Rocky Mountains.

White pine blister rust is one of the most destructive diseases of five needle pines in North America (Maloy 2001). The fungus cannot spread from tree to tree but requires an alternative host. The host is the *Ribes* sp (currants and gooseberries). The first and often most overlooked symptom is a red or yellow dot on the needles. This occurs shortly after the infestation. The first noticeable sign of infestation is a slightly swollen branch. As the disease progresses, the swollen area will become a canker. The cankers have a distinctive orange color (Maloy 2003). This is evident in photos 7 and 8 in Addendum B. Once a branch is girdled the needles will begin to turn red which is the first indication of disease within the stand. If the rust occurs on the main stem it will eventually girdle and kill the tree. (Maloy 2001)

Site Specific Information:

Limber pine was found throughout the project area and within the disturbance boundary, but most of the individuals were mainly in the central portion of the project area. The disturbance boundaries do not contain large areas of the Limber Pine-Big Sagebrush Grassland community. Limber pine and *Juniperus osteosperma* (Utah juniper) both occur within the community. Approximately 53.92 acres of habitat and 614 individuals of limber pine occur within the disturbance areas; however, large areas, approximately 1,101.49 acres of the Limber Pine-Big Sagebrush vegetation community are present outside of the disturbance boundary. This approximation was determined by aerial photography.

In June 2011 Limber Pine Big Sagebrush areas were sampled using the Point center quarter method. Ten point center quarter locations were taken within the community, thus forty samples total. Two species of trees were identified within the area: limber pine and Utah juniper. Limber pine had an approximate density of 17.89 trees per acre, while the Utah juniper had approximately 1.90 trees per acre. White pine blister rust was evident on the limber pine trees within the stands surveyed. Many of the trees were

succumbing to the infestation and in poor health. Approximately 90% of the trees observed were suffering from the white pine blister rust. The limber pines within the disturbance boundaries were infected with white pine blister rust.

In the 1980s, during the baseline study for this mine site, Limber pine was identified and rough species counts were determined. The 1980s study area included the current Congo Pit disturbance area and associated haul roads. Results of the baseline study indicated approximately 146 Limber pine individuals were present in the study area. The mean DBH was 15.6 cm and the range was 4.0 cm to 30.7 cm. The mean height was 4.4 meters and the range was 2.1 to 9.1 meters.

Physaria saximontana var. *saximontana* (Rocky Mountain Twinpod)

Habitat Characteristics:

Rocky Mountain twinpod occurs on "sparsely vegetated slopes on sandy, gravelly soils, rocky rims and outcrops, shale-siltsone, conglomerate bedrock, or talus of limestone, red sandstone (Chugwater formation), or clay between 5,200 and 8.850 feet" (Glisson 2004). The species is often found on dry south facing slopes, but can be found on any aspect. The species is often found surrounded by the limber pine/juniper vegetation community. The associated species are limber pine, Utah juniper, Douglas rabbitbrush, big sagebrush, and black sagebrush (WYNDD 2003).

Known Populations and Habitat in the Area:

In Wyoming, Rocky Mountain twinpod is known to occur from the Wind River Basin to the southern Big Horn Basin. It is known from 21 extant occurrences in Wyoming, 15 of which have been relocated since 1990 (Glisson 2004). The population of this species in Wyoming is greater than 14,400. There is a known population, reported in 1995, on Sheep Mountain. There are three small colonies present with an estimate of 100 plants in one colony (WNDD 2003b, Glisson 2004). The colonies occur around 6,950 feet in sandstone, limestone, and redbeds, in the Chugwater Formation, the slope aspect is west, and the slopes are sparsely vegetated (WYNDD 2003). The WYNDD Occurrence Rank is good (WYNDD 2003).

Threats:

The threats to Rocky Mountain twinpod include environmental climate change variables and surface disturbance activities including: mining, road and pipeline construction, and off-road vehicle use. Livestock is typically not a threat, as the habitat that the species grows in is not typically utilized for livestock grazing.

Site Specific Information:

The project area contains suitable potential habitat, generally located on sparsely vegetated slopes or islands within the Limber Pine-Big Sagebrush vegetation community in Sections 27, 28, and 33. There is about 119.71 acres of potential habitat within the project area. Within that total acreage, 1.95 acres of potential habitat is within the road disturbance boundary south of Sheep 2 Shaft in Section 28.

Discussion:

Limber pine has habitat and individuals present within the project and disturbance areas. Individuals within the disturbance areas are likely to be disturbed and/or killed due to mining activities; however, the number of individuals affected within the disturbance boundary is less than the number of individuals located within the project boundary outside of the disturbance areas that will not be affected by the mining activities. Rocky Mountain twinpod potential habitat is present within the project area, but outside the disturbance areas. It is at the discretion of the Lander BLM office to make effects determination for both species.

References:

Glisson, B. 2004, *Physaria saximontana* Rollins var. *saximontana* (Fremont County twinpod): A Technical Conservation Assessment. [Online]. USDA Forest Service, Rocky Mountain Region, http://www.fs.fed.us/r2/projects/scp/assessments/physariasaximontanavarsaximontana.pdf (March 2011)

Kendall, K. 1997. Limber Pine Communities [Homepage of High Elevation White Pines]. US Forest Service, http:///www.fs.fed.us/rm/highelvationwhite pines/index.htm (March 2011)

Means, Robert E. Synthesis of Lower Treeline Limber Pine (*Pinus flexilis)* Woodland Knowledge, Research Needs, and Management Considerations. USDOE Bureau of Land Management. Wyoming State Office, (August 2010)

Maloy, O. C. 2001. White pine blister rust. Online. Plant Health Progress doi:10.1094/PHP-2001-0924-01-HM.

Maloy, O.C.. 2003. White pine blister rust. The Plant Health Instructor. DOI:10.1094/PHI-I-2003-0908-01 Updated 2008.

Wyoming Natural Diversity Database (WYNDD). 2003, Research from the Glisson report regarding *Physaria saximontana* Rollins var. *saximontana* (Fremont County twinpod).

Wyoming Natural Diversity Database (WYNDD). 2011, Data compilation for C. Adams, completed February 21, 2011. Unpublished report. Wyoming Natural Diversity Database, University of Wyoming, Laramie, Wyoming.

ADDENDUM A

PHOTOGRAPHS

Photo 1: Limber Pine-Big Sagebrush Community. Located in the west half of Section 26. Potential *Physaria saximontana var. saximontana* habitat.

Photo 2: Limber pines in the background. Located southwest of Sheep 2 Shaft.

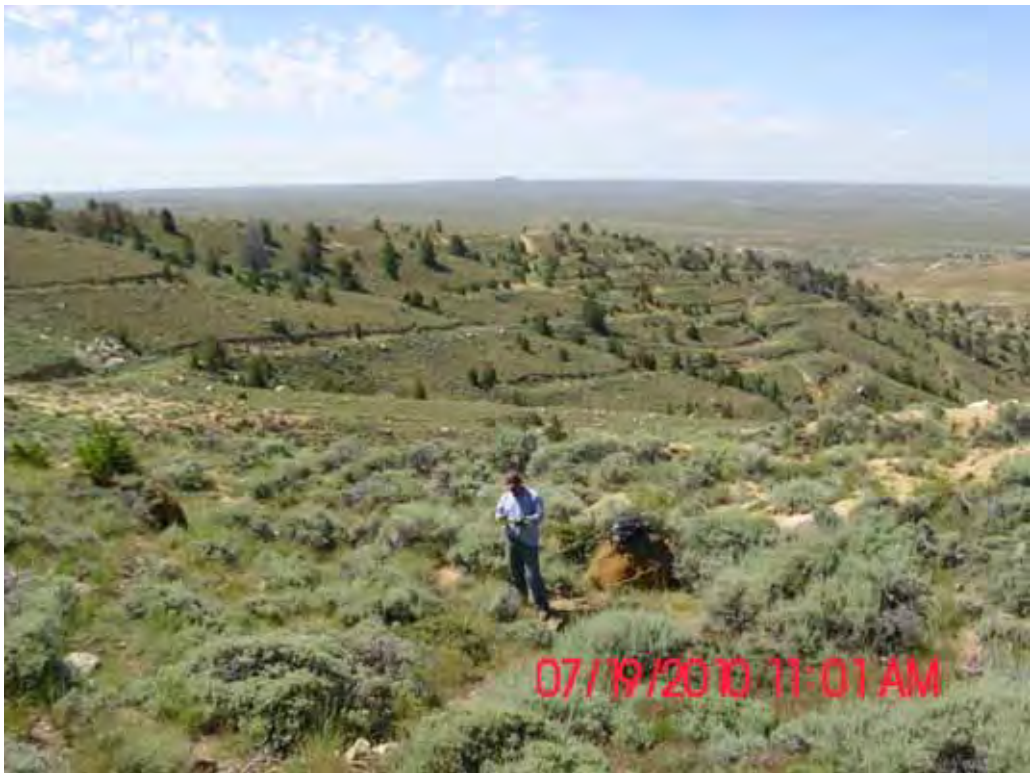


Photo 3: No blowout penstemon habitat. Potential *Physaria saximontana var. saximontana* habitat. Located in the southwest portion of Section 28.

Photo 4: Reclaimed Grassland- Located in the North Gap Pit

Photo 5: Ponded area in the southeast corner of project area. No *Spiranthes diluvialis* habitat.

Photo 6: General view of Limber Pine Stands observed during the 2011 survey

Photo 7: Evidence of Blister rust observed during the 2011 Limber Pine Surveys.

Photo 8: Evidence of Blister rust observed during the 2011 Limber Pine Surveys.

West Spoils

Congo Pit

South Spoils

North Gap Pit

South Congo Extension

Paydirt Pit

Paydirt Heap Leach

Sheep 1 Shaft

Sheep 2 Shaft

McIntosh Pit
(Heap Alternative Site)

Titan Uranium USA, Inc

Sheep Mountain Threatened, Endangered, and BLM Sensitive Species

Fremont County, WY

Legend

- Threatened, Endangered, and BLM Sensitive Plant Species Surveyed, No Habitat
- Potential Rocky Mountain Twinpod Habitat
- Limber Pine Populations and Habitat
- Limber Pine Habitat and Populations
- Rocky Mountain Twinpod Potential Habitat
- Heap, Leach, and Spoil Boundaries
- Open Pit, Underground Shaft, and Road Boundaries
- Project Boundary
- Sections
- TWN/RNG

N

0 0.1 0.2 0.4
Miles

1:8,000

BKS Environmental Associates, Inc.

Map Created by: BKS - Cindy Adams
Map Created on: March 31, 2010
Map Projection: NAD 83, UTM Zone 13
K:\Projects\BRS_Corporation\643_BRS_Titan_Sheep_MT_Uranium\Maps\Titan_Uranium_Project_BLM_Sensitive_Map_Final.mxd

Sheep Mountain
Plan of Operations
MAPS

S17

S16

MAXIMUM EXTENT OF MINING

EXISTING ACCESS ROAD TO BE REMOVED AND RECLAIMED

CONGO PIT

ACCESS ROAD TO SHEEP I WILL BE MAINTAINED THROUGH THE CONGO PIT DURING MINING OPERATIONS

SPOILS 2

ORE STOCKPILE AREA

MAXIMUM EXTENT OF MINING

CROOKS GAP ROAD

S20

S21

OFFICE

SHOP

PROPOSED OFFICE / SHOP AREA

SHEEP I

SPOILS 1

EXISTING ACCESS ROAD TO BE REMOVED

RAD CONTROL BOUNDARY

SHEEP II

EVAP POND

COLLECTION

RAFFINATE

HEAP / PLANT AREA

S29

PLANT

SX

S28

HEAP PAD

S2

LEGEND

SECTION LINE	RADIATION CONTROL BOUNDARY
PERMIT BOUNDARY	DEWATERING PIPELINE ALIGNMENT
EXISTING ROAD / ACCESS ROUTES	PROPOSED DECLINE TO UNDERGROUND MINE WORKINGS
EXISTING ROAD TO BE REMOVED / RECLAIMED	PROPOSED ROAD / ACCESS ROUTE
EXISTING GROUND CONTOURS CI-10'	PROPOSED CONVEYOR ALIGNMENT
DESIGN CONTOURS CI-10'	PROPOSED OVERHEAD POWER LINE
	EXISTING MINE SHAFT

N

T. 28 N. , R. 92 W.

600' 0 300' 600'

1 inch = 600'

BRS ENGINEERING

OPERATING PLAN

SCALE: 1"=600'

DRAWN BY: CDS

DATE: 5/20/11

SHEEP MOUNTAIN MINES
MINE PERMIT 381C

REVISION DATE: 06/15/11

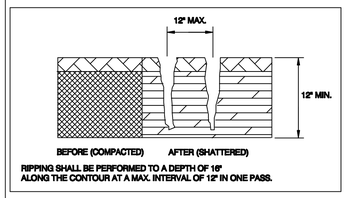
CAD FILENAME: LP2008/PERMITING/OPERATING PLAN

DWG. NUMBER: MAP 2.1

TITAN URANIUM USA INC

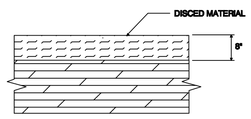
REVEGETATION DETAILS

RIPPING



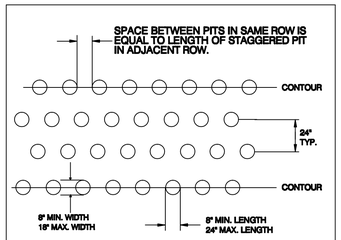
RIPPING SHALL BE PERFORMED TO A DEPTH OF 18" ALONG THE CONTOUR AT A MAX. INTERVAL OF 12" IN ONE PASS.

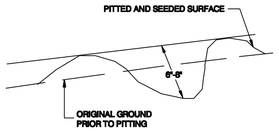
DISCING



DISCING SHALL BE PERFORMED TO A NOMINAL DEPTH OF 8" ALONG THE CONTOUR.

PITTING AND SEEDING





PITS:
MAX. DEPTH 8"
MIN. DEPTH 6"

NOTE: PITS TO BE CONSTRUCTED PARALLEL WITH CONTOURS.

TYPICAL REVEGETATION OPERATION SEQUENCE DETAIL

1. Graded Surface
2. Coversoil Preparation by Ripping on Compacted Substrate
3. Coversoil Application
4. Agricultural Ripping on Compacted Coversoil
5. Fertilizer Spreading
6. Discing
7. Drill Seeding

REVEGETATION SEQUENCE

1. The ground surface will be brought to the lines and grades reflecting approximate design contours and blend with adjacent topography at the completion of grading. Ripping shall be performed on areas of compacted substrate prior to coversoil placement. Coversoil shall be placed on the surface in a 12" thick layer along contour.

2. Ripping, discing, pitting and seeding shall only be done under appropriate soil and climatic conditions for agronomic purposes. Some conditions which may prevent acceptable soil preparation include: soils too wet; formation of clods during ripping, frozen condition or soils too dry.

3. Ripping shall be done on all areas to be seeded, which have been compacted by equipment traffic. Ripping shall be done to a nominal depth of twelve inches parallel to the contour at intervals of 12 inches. Depth of ripping may be limited to a depth of topsoil to avoid excessive mixing of topsoil and subsoil materials.

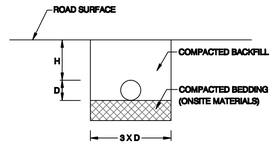
4. Fertilizer shall be applied to the ripped coversoil at the rate described in the specifications.

5. Discing shall immediately follow fertilizer application to produce a suitable seedbed. Discing shall be done to a nominal depth of eight inches parallel to the contour by using a heavy duty mechanical type double-gang disc with a minimum coulter diameter of twenty-two inches, or any other implement which is suitable for completion of this task.

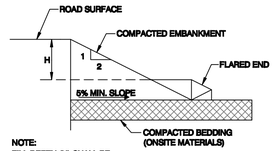
6. Seeding operations shall consist of drill and broadcast seeding. Seeding shall only be done during daylight hours.

CULVERT DETAILS

CULVERT TYPICAL CROSS SECTION



CULVERT OUTLET PROFILE DETAIL



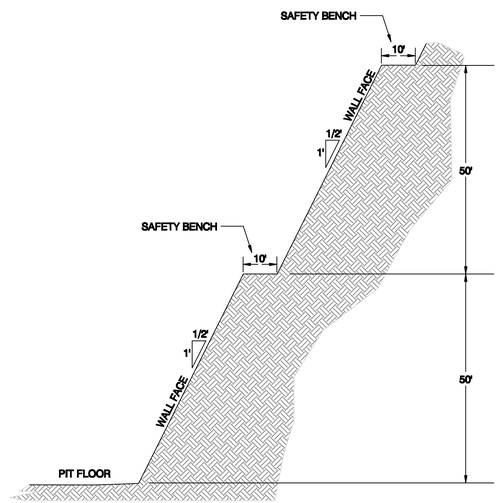
NOTE:
FILL DEPTH (H) SHALL BE A MINIMUM OF 2 FT.

NOTE: ALL DIMENSIONS ARE APPROXIMATE

OPEN PIT MINE DETAILS

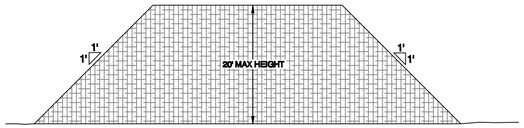
TYPICAL OPEN PIT HIGHWALL

NOT TO SCALE



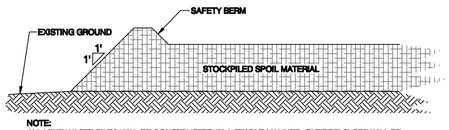
OPEN PIT MINE DETAILS

TOPSOIL STOCKPILE DETAIL



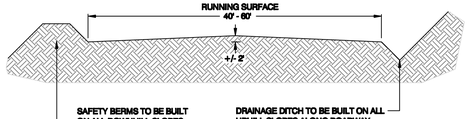
NOTE:
TOPSOIL PILE SHALL BE NEATLY DRESSED, LOCATED TO MINIMIZE WIND AND WATER EROSION, SEEDED WITH APPROVED TEMPORARY GRASS MIXTURE, AND CLEARLY MARKED AS "TOPSOIL"

MINE SPOILS CROSS SECTION



NOTE:
ALL MINE WASTE PILES WILL BE CONSTRUCTED IN A STABLE MANNER. OUTSIDE SLOPE WILL BE PROTECTED WITH A SAFETY BERM. BERM TO BE BUILT TO AXLE HEIGHT OF LARGEST SITE EQUIPMENT AND SHALL UNTAIN PRECIPITATION AND RUN-ON EQUALY TO A 10 YEAR / 24 HOUR STORM EVENT TO MINIMIZE SIDE SLOPE EROSION.

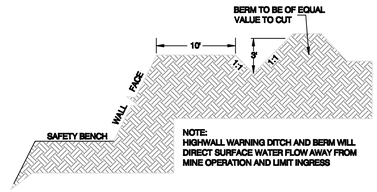
TYPICAL HAUL ROAD DETAIL



SAFETY BERMS TO BE BUILT ON ALL DOWNHILL SLOPES ALONG ROADWAY. BERM TO BE AXLE HEIGHT OF LARGEST SITE EQUIPMENT.

DRAINAGE DITCH TO BE BUILT ON ALL UPHILL SLOPES ALONG ROADWAY.

HIGHWALL WARNING DITCH AND BERM

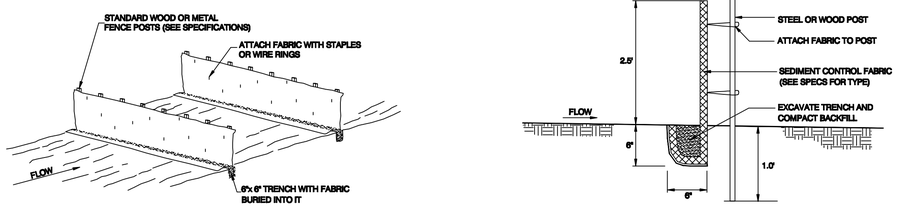


NOTE:
HIGHWALL WARNING DITCH AND BERM WILL DIRECT SURFACE WATER FLOW AWAY FROM MINE OPERATION AND LIMIT INGRESS

EROSION CONTROL

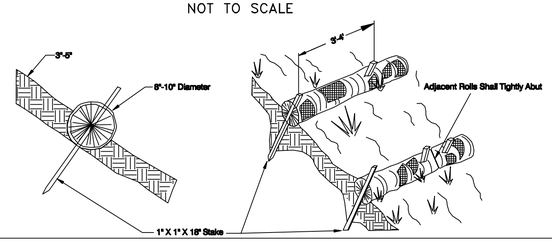
SEDIMENT CONTROL FENCE

NOT TO SCALE



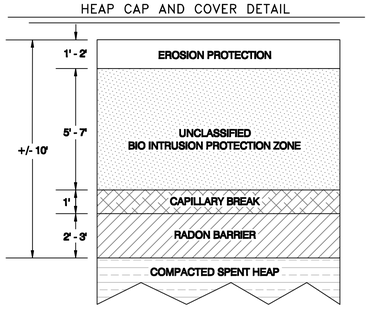
SEDIMENT CONTROL WATTLE

NOT TO SCALE

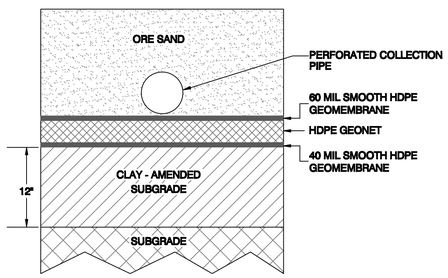


HEAP LEACH DETAILS

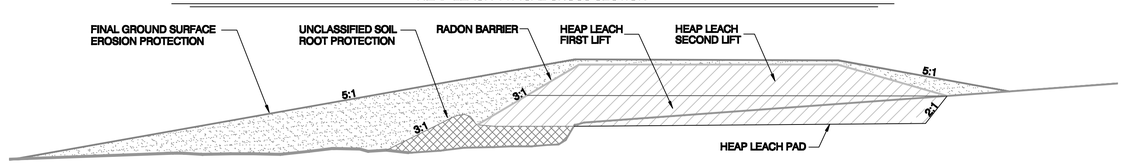
HEAP CAP AND COVER DETAIL



HEAP LEACH BASE DETAIL



HEAP LEACH TYPICAL CROSS SECTION



TITAN URANIUM USA INC

REVISION DATE: 06/16/11
CAD FILENAME:
LP2008/PERMITING/CONSTRUCTION DETAIL
DWG. NUMBER:MAP 2.2

SHEEP MOUNTAIN MINES
MINE PERMIT 381C

CONSTRUCTION DETAILS

SCALE: NTS
DRAWN BY:CDS
DATE: 6/15/11

BRS ENGINEERING

S17

S16

STABLE GEOMORPHIC
RECLAMATION DESIGN

CONGO PIT

PAYDIRT PIT BACKFILLED WITH
FLOW THROUGH DRAINAGE

PAYDIRT

SPOILS 2

S20

S21

S2

AREAS TO BE RECLAIMED TO NEAR
ORIGINAL CONTOUURS

SHEEP I

SPOILS 1

NOTE:
RECLAMATION OF ROADS AND
SHAFTS INCLUDED IN EXISTING BOND

SHEEP II

S29

S28

S27

5:1

5:1

5:1

HEAP

S33

S34

LEGEND

SECTION LINE

PERMIT
BOUNDARY

MAXIMUM EXTENTS OF DISTURBANCE
DURING MINING

EXISTING GROUND CONTOURS CI-10'

FINAL RECLAMATION CONTOURS CI-10'

N

T. 28 N. , R. 92 W.

600' 0 300' 600'

1 inch = 600'

BRS ENGINEERING

FINAL RECLAMATION MAP

SCALE: 1"=600'

DRAWN BY: CDS

DATE:
6/15/11

SHEEP MOUNTAIN MINES
MINE PERMIT 381C

REVISION DATE: 06/15/11

CAD FILENAME:
LP2008/PERMITING/FINAL RECLAMATION

DWG. NUMBER:MAP3.1-1

TITAN
URANIUM USA INC