

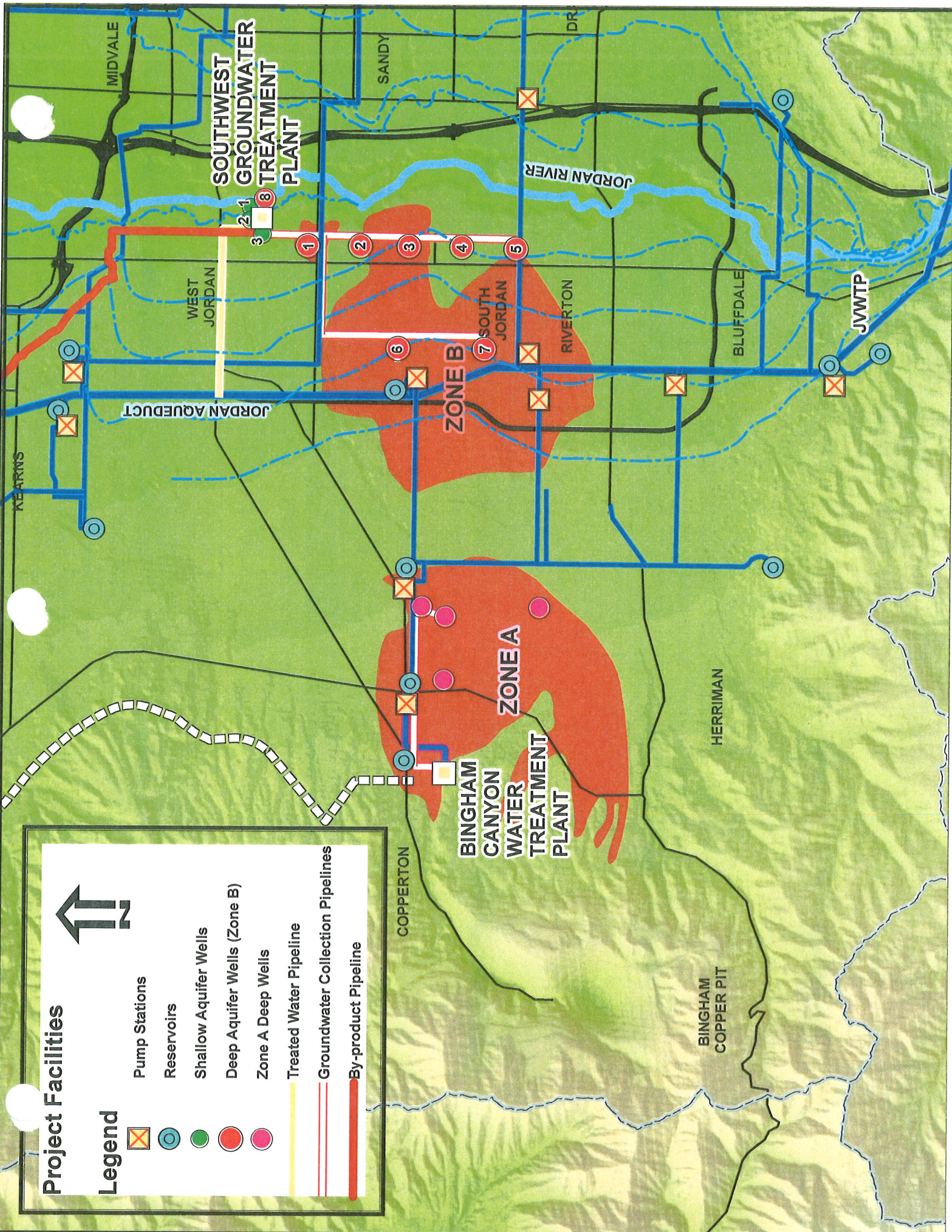
F Project Facilities Map

Project Facilities



Legend

- Pump Stations
- Reservoirs
- Shallow Aquifer Wells
- Deep Aquifer Wells (Zone B)
- Zone A Deep Wells
- Treated Water Pipeline
- Groundwater Collection Pipelines
- By-product Pipeline



G Process Description

JORDAN VALLEY WATER CONSERVANCY DISTRICT



**Southwest Groundwater Treatment Plant (SWGTP)
Process Description
Supplement to UPDES Form 2, Item B.3**

The Southwest Groundwater Treatment Plant is a reverse osmosis (RO) water treatment plant designed to suitably treat groundwaters high in sulfate from the southwest portion of the Salt Lake Valley for municipal water use.

The Phase I treatment plant will be fed via a series of eight deep wells and three shallow wells. RO Trains one and two will be fed exclusively with deep groundwater. Train three will be fed from the shallow wells as a separate treatment system. Phase II is planned for the future and will add three additional shallow water treatment trains supported by an additional 9 to 15 shallow wells.

Pre-treatment is provided via cartridge filters prior to the RO feed pumps. The design RO recovery rate is 80% (i.e. 80% as product water, 20% as by-product water).

Treated water from the three Phase I trains will be combined with treated bypass flow from the shallow wells. Shallow well bypass flows will provide blending to achieve a target TDS of 250 mg/L. Bypass flows will be treated to municipal standards via bag filtration and UV disinfection via a separate treatment train.

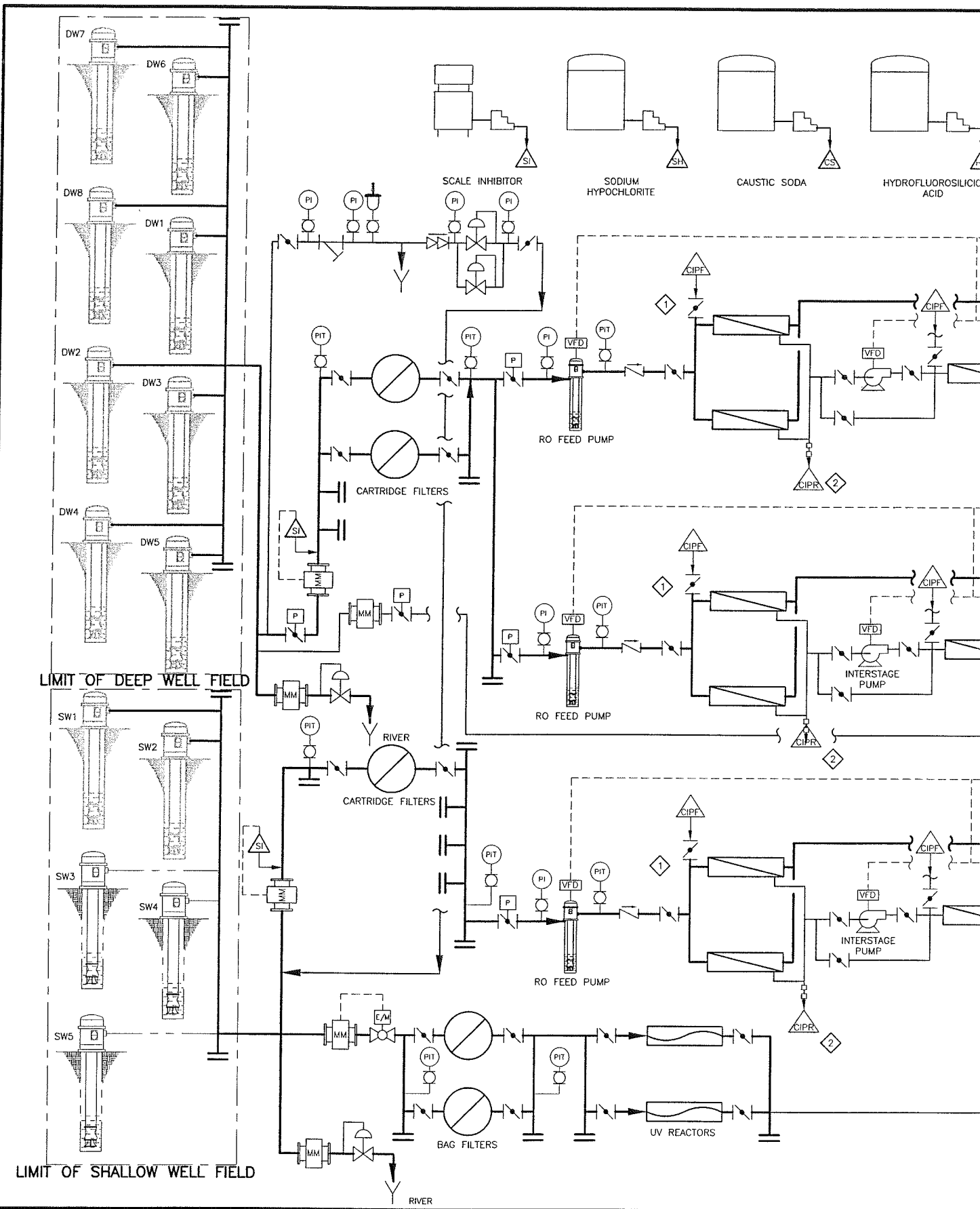
An aeration tower is provided to remove dissolved carbon dioxide (CO₂) and for pH adjustment. Post chlorination of finished water is provided via a chlorine contact basin. A finished water pump station provides distribution prior to entering the District's transmission system.

Byproduct from the treatment operation will be pumped via a 21 mile long pipeline for discharge to Gilbert Bay at Outfall # 1. Byproduct flows will convey 95-99% of the incoming dissolved solids to the outfall. Neutralized cleaning wastes will be conveyed off-site to Outfall # 1 blended with by-product flows.

Lower constant flow discharges at Outfall #2 will allow flexibility in operation and maintaining the 20 to 25 wells which are to provide feed water to the treatment plant. Discharges at Outfall # 2 will be intermittent occurring during membrane cleaning or plant maintenance. Flows will consist of shallow groundwater.

Stand-by power is provided via a diesel fueled generator upon power interruption. The primary purpose of the stand-by generator is to provide for orderly shut-down of the plant and to enable a feedwater flush of the by-product pipeline. The plant will go off-line during a power interruption event.

H Process Flow Diagram



LIMIT OF DEEP WELL FIELD

LIMIT OF SHALLOW WELL FIELD

CONFORMED DOCUMENTS
FOR CONSTRUCTION

REV	DATE	BY	DESCRIPTION

DESIGNED
TFS
DRAWN
TLR
CHECKED
BLB
DATE
NOVEMBER 2009

DISCIPLINE ENGINEER

PROJECT ENGINEER

** ORIGINAL STAMPED BY THOMAS F. SEACORD JULY 2009 5405464 **

PARTNER

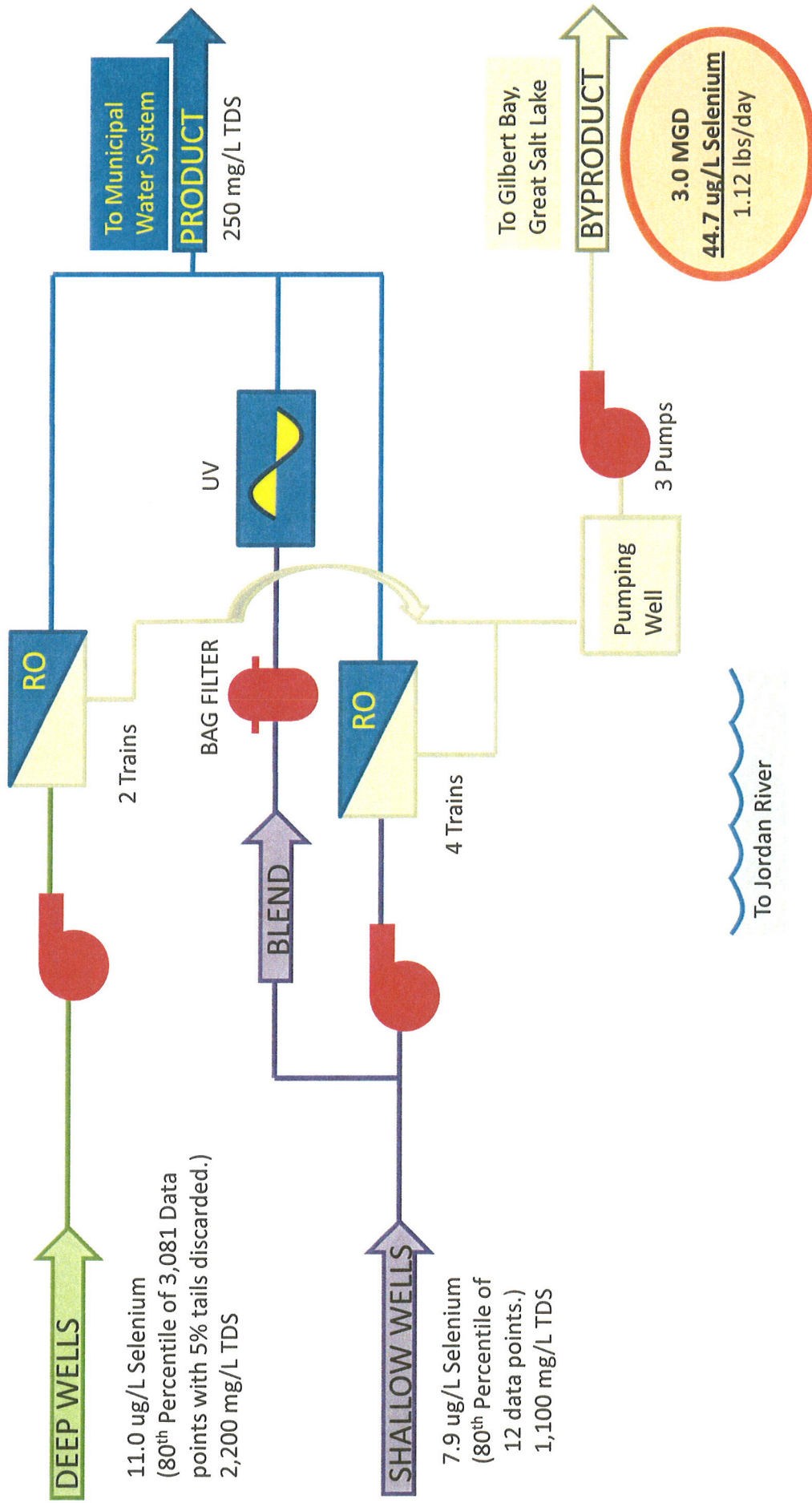


Last Saved By: SMF DFN 7-20-09 08:12:00

I Simplified Process Flow Diagrams

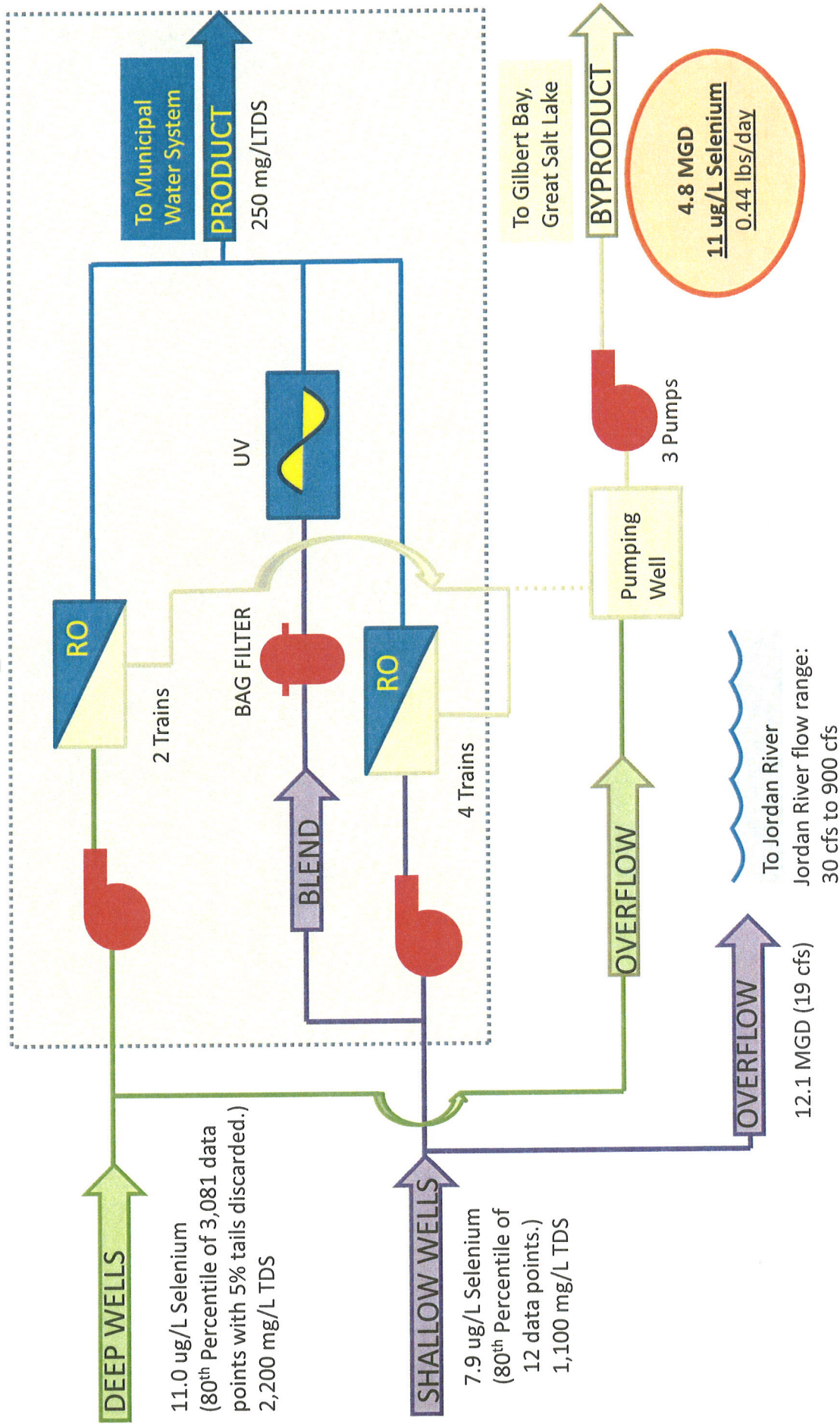
PROCESS FLOW DIAGRAM

Normal Operation



PROCESS FLOW DIAGRAM

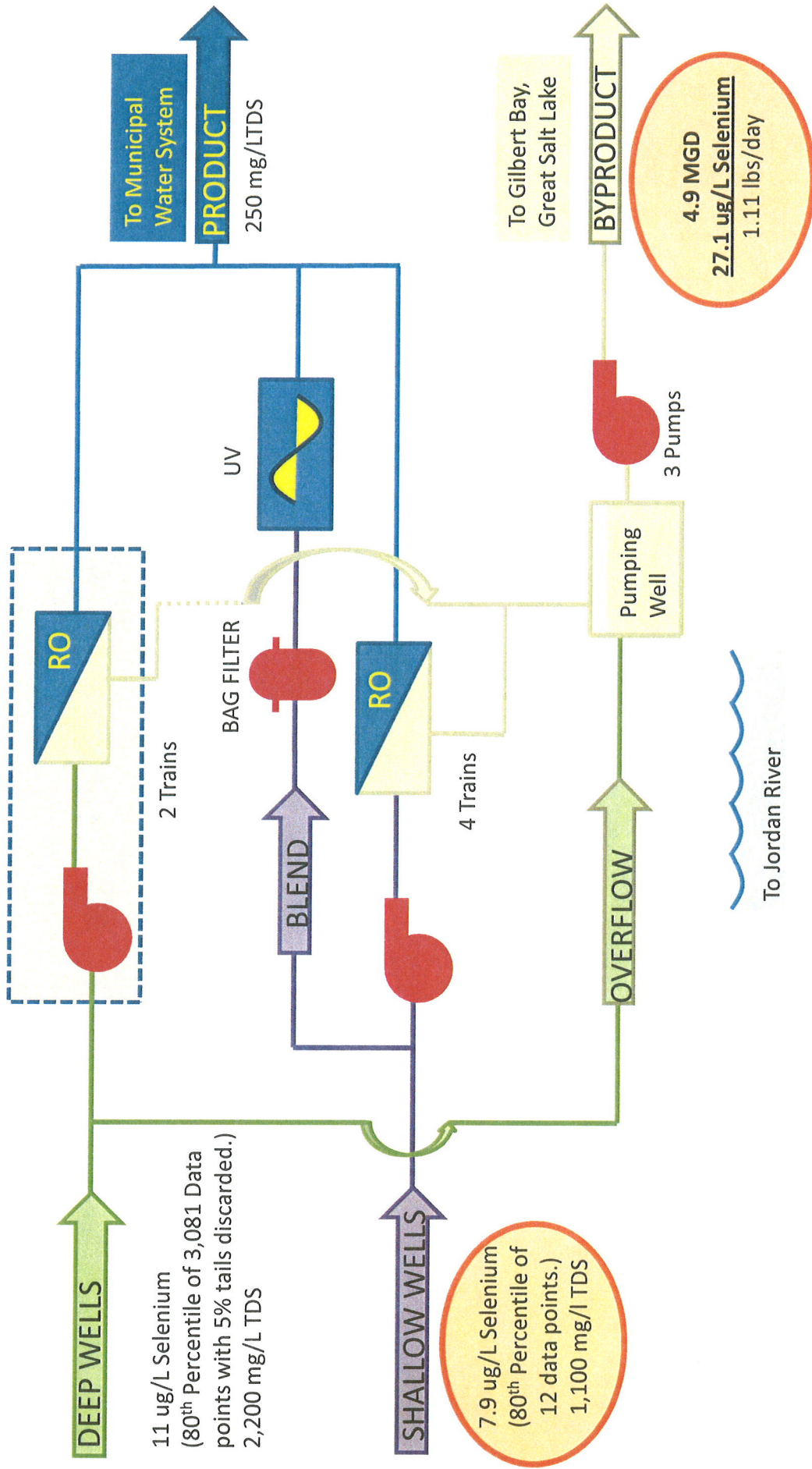
Start-up



Scenario will occur during initial start-up and after power failure for approximately a 24 hour period

PROCESS FLOW DIAGRAM

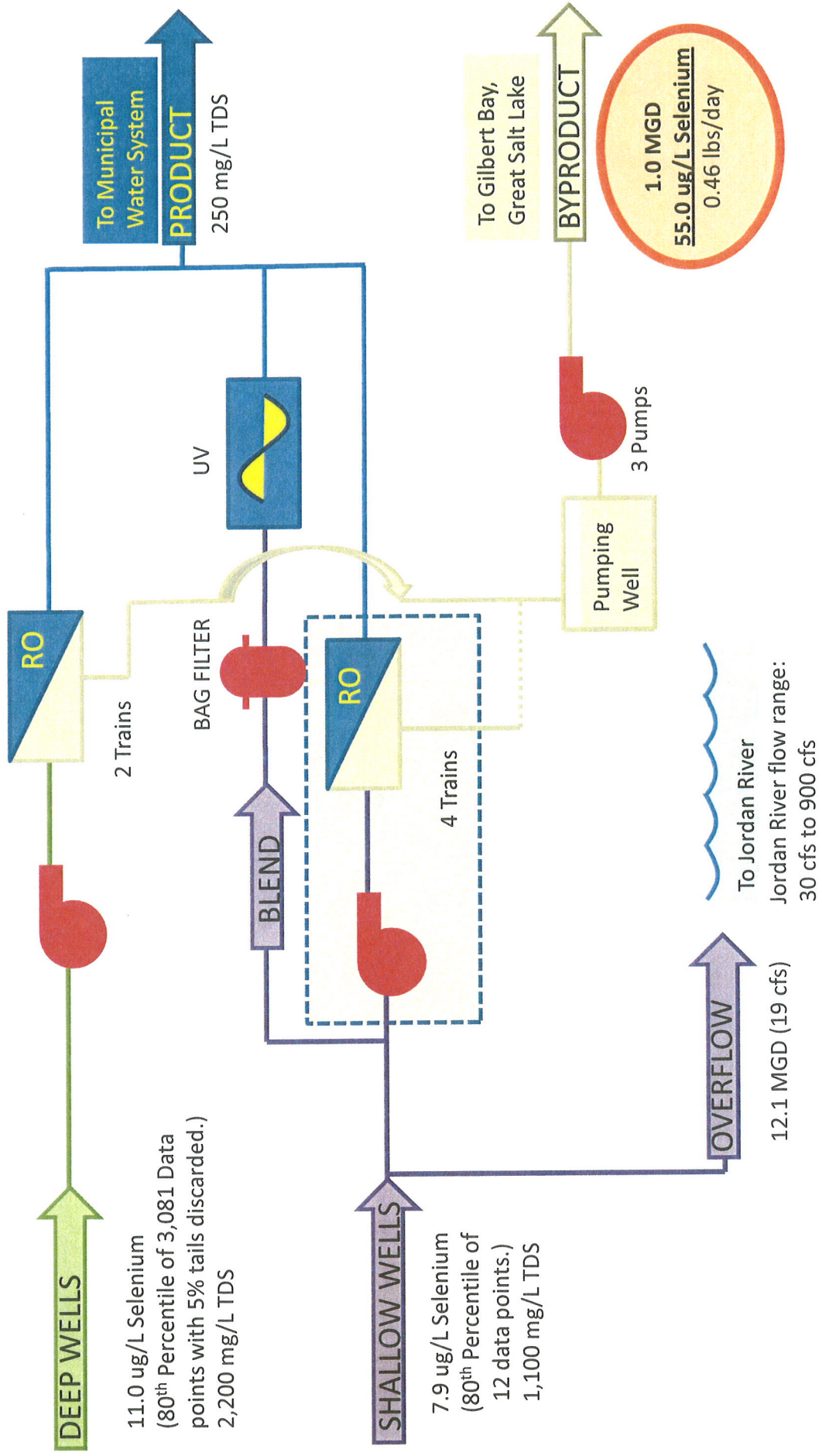
Cleaning and Maintenance Deep RO



Scenario will occur every three months
for approximately a 24 hour period

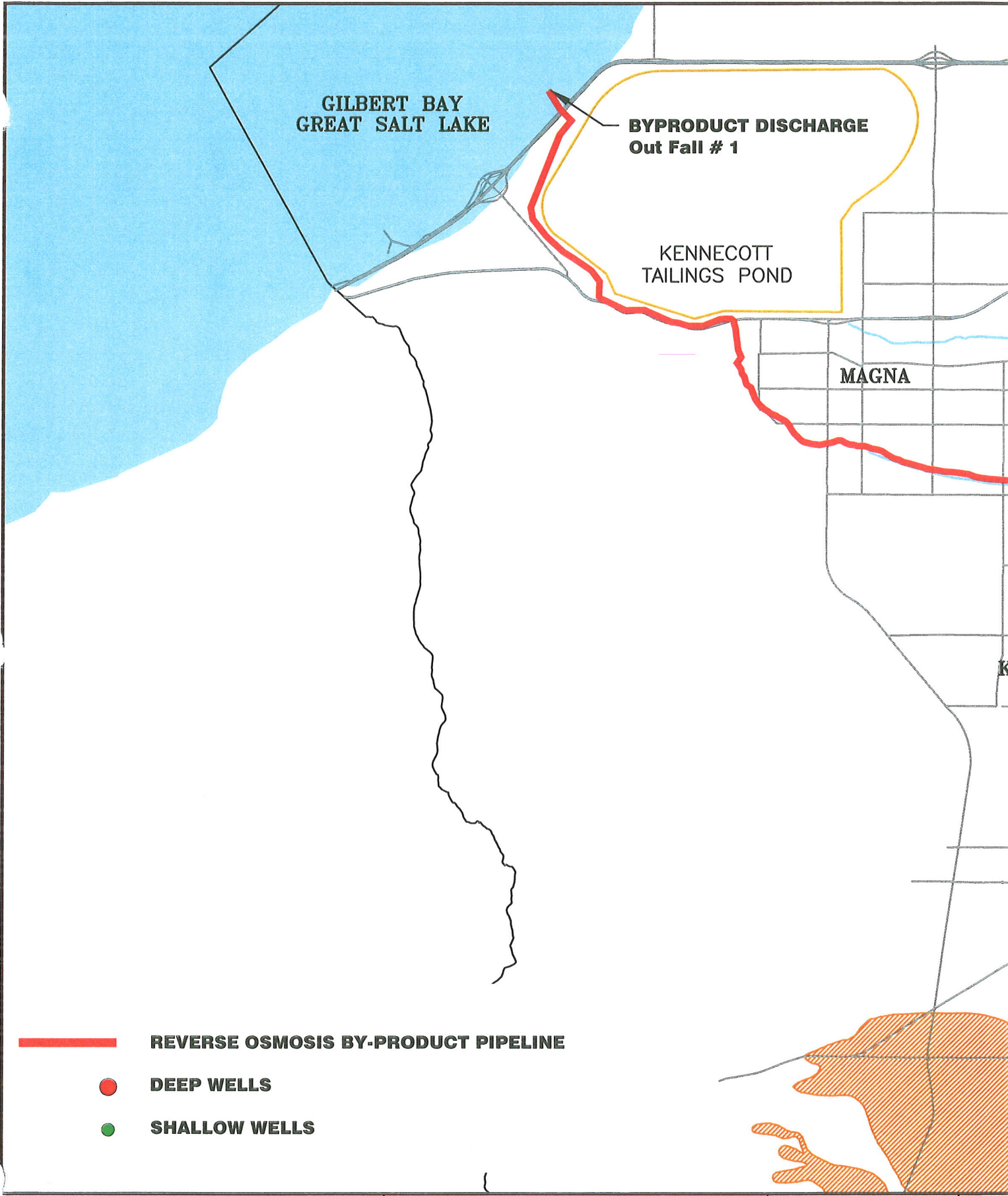
PROCESS FLOW DIAGRAM

Cleaning & Maintenance Shallow RO



Scenario will occur every three months for approximately a 24 hour period

J Overall Project View Map



REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

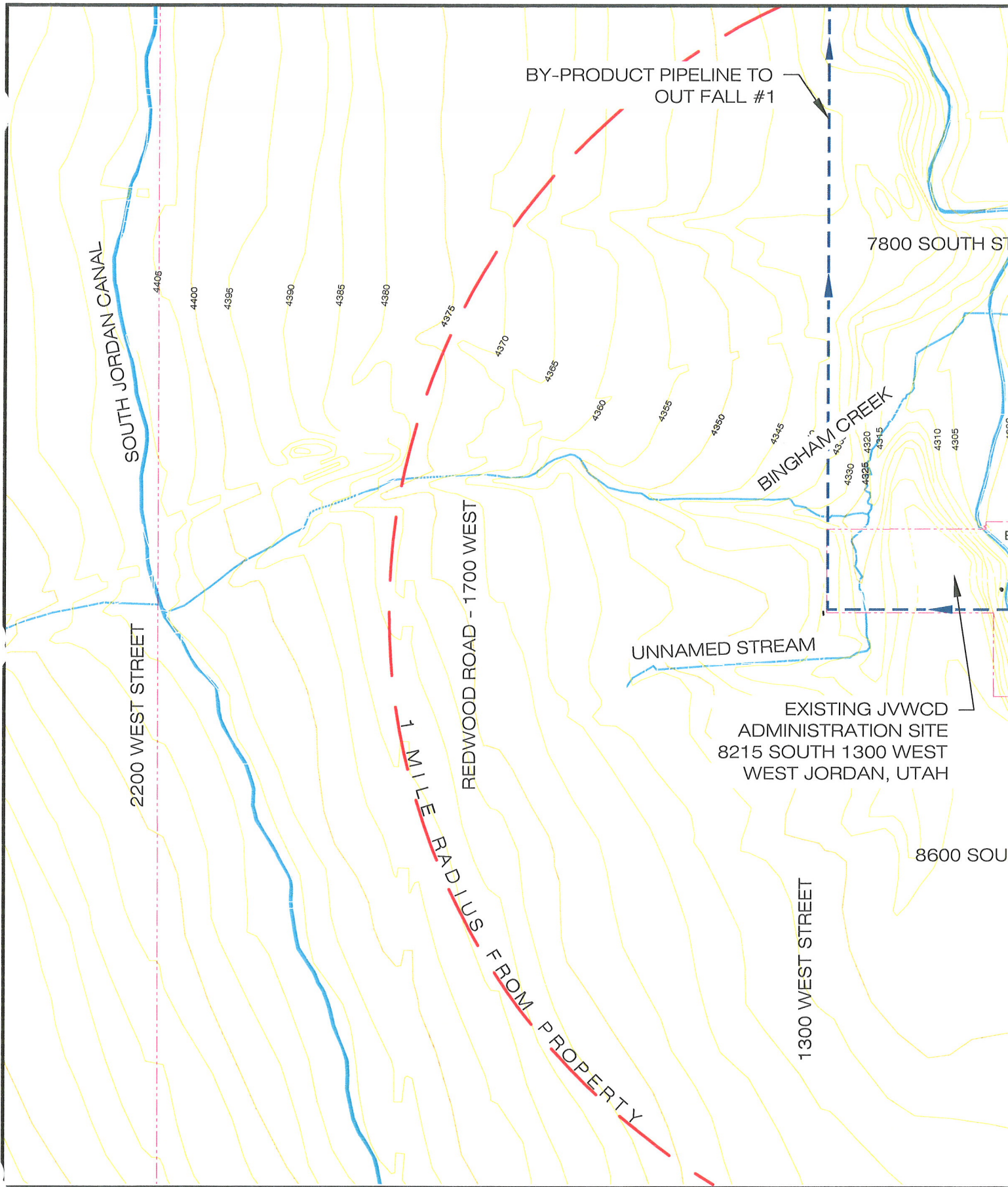


**Jordan Valley Water
Conservancy District**

8215 SOUTH 1300 WEST
WEST JORDAN, UTAH 84088-0070
PHONE (801) 585-4300

DESIGN:	(F NOT
DRAWING:	
REVIEW:	
APPROVAL:	

K Topographic Vicinity Map



REVISIONS

ZONE	REV	DESCRIPTION	BY	DATE	APP.



**Jordan Valley Water
Conservancy District**

8215 SOUTH 1300 WEST
WEST JORDAN, UTAH 84088-0070
PHONE (801) 565-4300

DESIGN:
DRAWING:
REVIEW:
APPROVAL: