WEST POINT CITY

SYSTEM # 06020

DRINKING WATER SOURCE PROTECTION PLAN

2250 and 1750 WEST WELLS

MAYOR

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LAST SAVED:
SEPTEMBER 23, 2021

Prepared by:

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CIVIL · LAND PLANNING
MUNICIPAL · LAND SURVEYING

WEST POINT UTAH

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Executive Summary

West Point City has retained Gardner Engineering to update the Drinking Water Source Protection Plan (DWSPP) for their wells. The wells are located along 300 N, at 2250 West and 1750 West in West Point, Utah in Weber County.

The primary purposes of a DWSPP are to:

1. Estimate the area from which the wells will draw water over a defined period of time, referred to as "Source Protection Zones";
2. Identify properties and activities within the Source Protection Zones that could potentially contaminate the groundwater captured by the well, referred to as "Potential Contamination Sources" (PCSs);
3. Identify and promote methods to inhibit the identified PCSs from contaminating the groundwater;
4. Identify and promote methods to keep new PCSs from contaminating the groundwater within the Source Protection Zones;
5. Establish a plan for mitigating water contamination if it does occur.

It is estimated that the PCS most likely to have the greatest effect on the City's wells, if groundwater contamination were to occur, is Hill Air Force Base, due to the volume and make-up of the potential contaminants at the Base. The Base employs strict procedures to help protect the area's groundwater. Other PCSs are also located in the Source Protection Zones, with varying potential for contaminating the groundwater. Best Management Practices have been identified for each of the identified PCSs, which, if employed, will help safeguard the City's water.

The City has enacted a Source Protection Ordinance to help ensure that steps are taken, at least within the City's jurisdiction, to minimize the location of uncontrolled PCS's within the Source Protection Zones. Sunset, Clearfield and Clinton Cities have also enacted similar ordinances, to help eliminate, or at least mitigate, the location of PCSs within West Point's Zones, when West Point's Zones extend into the neighboring cities' jurisdictions.

The conclusion of this DWSPP is that the City's water supply (groundwater drawn from two wells along 300 North Street) has a low susceptibility to contamination, the identified PCS's are managed in such a way to minimize and mitigate the potential for contamination from their respective activities, and a plan is put forth to address contamination or serious physical damage to the water system if contamination does occur.

This document is self-contained so that archival searches are not necessary to review, understand and implement strategies identified for source protection.

1.0 **Introduction**

1.1 System Information

The following information pertains to the West Point City water system.

Water System Name: West Point Culinary Water System

Water System Number: 06020

Address: 3200 West 300 North
West Point, UT 84015

1.2 Source Information:

	2250 W. Well	1750 W. Well
Source Number	WS001	WS003
Common Name	Well 1	Well 3
Source Type	Groundwater Well	Groundwater Well
PLS Location	N 81' E 4,092' of the SW Corner of Section 33, T5N R2W, SLB&M	N 38' W 4,008' of the SE Corner of Section 34, T5N R2W, SLB&M
Common Location	2250 W. 300 N.	1750 W. 300 N.

1.3 Designated Person

Name: Paul Rochell

Address: 3200 West 300 North
West Point, UT 84015

Phone Number: (801) 776-0970

2.0 **Delineation Report – R309-600-9(6)**

2.1 Geologic Data -- R309-600-9(6)(a)(i):

The reader is referred to the hydrogeologic study completed by Mr. S. Bryce Montgomery included herein as Appendix A for a detailed discussion of local and regional geology. Highlights from this study and its correlation with other stated studies are listed below.

Both of West Point City's wells are completed within the Sunset and Delta Aquifers and range in depth from 808 to 852 feet. Both aquifers are considered to be confined.

Anderson and others (1994, pg 15) note the top of the Sunset Aquifer is about 200 to 400 feet below ground. The aquifer is composed of unconsolidated basin-fill deposits and is 50 to 200 feet thick.

Anderson and others (1994, pg. 45) note the top of the Delta Aquifer is about 500 to 700 feet below ground. The aquifer is composed of deltaic deposits of the Weber River and is 50 to 150 feet thick.

Clark and others (1990, pp, 8, 9) note the primary recharge areas are the basin-fill deposits along the base of the Wasatch Range to the East. A large secondary recharge area (Hill Air Force Base, Washington Terrace, and South Ogden) that consists of the Weber River delta deposits lies between Kaysville and Ogden, and is to the east.

Clark and others (1990, pg. 21) note the two main aquifers are typically separated from vertical adjacent aquifers by confining layers several feet to several hundred feet thick.

Clark and others (1990, p& 24) note the unconfined parts of the East Shore aquifer system generally are present only as lateral extensions of the confined aquifers up gradient in a small area near the mountain front within the recharge area.

2.2 Well Construction Data - R309-600-9(6)(a)(ii):

Table 2.2, below summarizes the methods of well construction and equipping.

Table 2.2 Well Construction and Equipping Information

	2250 W. Well	1750 W. Well
Driller's Log	Appendix B	Appendix B
Elevation of Wellhead	4350	4370
Borehole Diameter	Casing Size	16"
Casing Diameter	12" (0' - 202') 8" (202' - 737') 6" (737' to 808')	16" (0' - 267.5') 12" (267.5' - 852')
Total Depth of Well	808'	865'
Depth of Perforated Interval	786- -808'	802' - 840'
Perforation Type	Not Logged	Mills (1/2" x 2 1/2")
Casing Type	Not Logged	3/8" welded steel
Method of Construction	Not Logged	Rotary
Type of Pump		
Depth of Pump		
Max. Projected Pumping Rate	461 GPM	1,400 GPM

2.3 Aquifer Data - R309-600-9(6)(a)(iv)

Table 2.3 on the following page summarizes aquifer data relative to each of West Point City's wells. The aquifer data was obtained from Bryce Montgomery's reports (located in Appendix A),

from the USGS Water-Resources Investigations Report 93-4221, the Department of Natural Resources Technical Publication 93, and pump tests that were conducted on the wells. The Cooper- Jacob's method was used to determine the local transmissivity of the aquifer near the 2250 West well 1750 West well and the. However, the test results, which are shown in Appendix C, were unreasonably low. A local conductivity for the Delta aquifer was taken from a local average conductivity measured at neighboring wells. This information is also shown in Appendix C. This was used to determine the local transmissivity for all wells.

Table 2.3 West Point City's Aquifer Data

	2250 W. Well	1750 W. Well
Aquifer	Delta	Delta
Well Depth (ft)	808	865
Static Water Depth (ft)	94	142
Drawdown (ft)	2	20
Pumping Test Time (hr)	26	18
Transmissivity (T in ft^2/d)	Used 12,500 Tested 280	Used 12,500 Tested 2,147
Storage coefficient	0.00004	0.00004
Hydraulic Conductivity (K in ft/d)	330	330
Aquifer thickness (D in ft)	22	38
Hydraulic Gradient (i in ft/ft)	0.001	0.001
Porosity (n in ft/ft)	0.25	0.25

2.4 Hydrogeologic Methods, Procedures, and Calculations - R309-600-9(6)(a)(vii)

The program "WHPA" or "Well Head Protection Area" delineation code as prepared by the International Ground Water Modeling Center at the Colorado School of Mines was used to model the groundwater flow to each of West Point City's wells. Inherent with the WHPA program are several assumptions. One significant assumption was that the canals, rivers and springs in the study area did not contribute enough water to the system to be modeled as boundaries to the flow system. The WHPA program assumes that boundaries are linear and fully penetrating. Therefore, if they were modeled as a boundary, the protection zones would not extend beyond them. While water does infiltrate into the groundwater flow system from the canals, rivers, and springs in the primary recharge areas, most of the water was assumed to come from the Wasatch Mountains to the east.

Other assumptions include

1. A steady-state groundwater flow field;

2. Fully penetrating wells;

3. Two dimensional groundwater flow in an aerial x-y plane.

The hydraulic gradient was assumed to be due east with a slight bias to the northeast. The values suggested by Bryce Montgomery (1994) for the storage coefficient and transmissivity were also used for modeling the three wells. Parameters that were used for modeling the wells are shown in Table 2.3.

One limitation of the WHPA program is that it models an aquifer as being homogeneous (meaning that aquifer characteristics are the same at each well). This is not the case for the well field in the East Shore area since there are two confined aquifers that are being pumped. In addition, the aquifer thickness was determined by the total length of perforations in the well. It is believed that these limitations in the modeling software are conservative (the limitations result in a larger projected capture area than actual).

The results from each of the WHPA runs were plotted at a scale of I inch - 2000 feet The plots were measured to determine the dimensions of protection zones, two, three, and four. It was apparent from the WHPA runs that the distances of the protection zones were directly proportional to the transmissivity of the aquifer and inversely proportional to the thickness of the aquifer. The widths of the protection zones increased in accordance with the pumping rate of the well. Pumping wells located up gradient increased the width of the protection zones and altered the flow paths by forcing them to the north or south, around the up gradient wells.

2.5 Maps Showing Boundaries of DWSP Zones - R309-600-9(6)(a)(viii)

Table 2.5 shows the dimensions of the source protection delineation zones for West Point City's wells. The source protection delineation zones were plotted onto aerial photographs and are included as Appendix E to this Plan.

Table 2.5 Dimensions of Source Protection Zones for West Point City's Wells

	2250 W. Well	1750 W. Well
Zone 1 radius around well head	100	100
Zone 2 Max. Distance Downgradient from well head	1,100	2,000
Zone 2 Max. Distance Upgradient of well head	500	2,000
Zone 2 Max. Width Upgradient	2,200	4,300
Zone 3 Max. Distance Downgradient from well head	2,300	2,100
Zone 3 Max. Distance Upgradient of well head	600	2,100
Zone 3 Max. Width Upgradient	6,000	8,900
Zone 4 Max. Distance Downgradient from well head	3,300	2,200
Zone 4 Max. Distance Upgradient of well head	700	16,600
Zone 4 Max. Width Upgradient	18,600	19,100

2.6 Protected Aquifer Conditions - R309-9(7):

There are two principal aquifers in the area between Kaysville and Plain City [Clark and others, 1990]. These are the Sunset and Delta aquifers. The top of the Sunset aquifer is approximately 200 to 400 feet below ground. It is composed of unconsolidated basin-fill deposits and ranges from 50 to 200 feet thick. The top of the Delta aquifer is 500 to 700 feet below ground. The

aquifer is composed of deltaic deposits of the Weber River and is approximately 50 to 150 feet thick. The basin fill deposits in both aquifers become finer grained near the Great Salt Lake. Each of the confined aquifers is typically separated from adjacent aquifers by confining layers several feet to several hundred feet thick. The range of thicknesses in the confining layers can cause a substantial difference in the hydraulic head between aquifers.

It was not possible to determine if either the 2250 West or the 1750 West well was grouted at the time of construction to a depth of 100 feet from the well driller's log. The well driller, Gordon Stoddard was consulted. Mr. Stoddard stated that his company always grouts municipal wells to a depth of at least 100 feet, as required by the State of Utah Public Drinking Water Regulations paragraphs R309-515-6(6)(i)(iii)(D) and R309-600-6(1)(x)(iii).

Due to the undocumented presence of a grout seal in the wells, protected aquifer status is not justified.

End Of Section 2.0

3.0 **Inventory Of Potential Contamination Sources (R309-600-10)**

3.1 PCS Inventory

The greatest source of unknown and potential contamination sources (PCSs) is from the farms in this region and Hill Air Force Base, due east of the wells. West Point City is fortunate that all of their wells are located in deep, confined aquifer systems, with low susceptibility to contamination from surface PCSs within the source protection zones. A Potential Contamination Source (PCS) is classified as any facility or site within the source protection zones that employs an activity or procedure that may potentially contaminate the groundwater. PCSs were identified throughout the source protection zones, and are presented below in tabular form. An identification number (ID NO.) is assigned to each PCS. The identification number is used to show the location of the PCS relative to the 2250 & 1750 West Wells source protection zones (see the map in Appendix E). Tables 3.1.A and B provide the name, address, and telephone number of the contact person for each PCS.

Table 3.1.A Prioritized list of PCSs and their associated hazards (2250 West Well)

ID NO.	BUSINESS NAME OR FACILITY	ADDRESS	ZONE	CONTACT PERSON	ADDRESS OF CONTACT PERSON	PHONE NUMBER OF CONTACT PERSON
102	Davis School District: West Point Jr. High School	2775 W. 530 N. West Point, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
104	Davis School District: Lakeside Elementary	2841 W. 800 N. West Point, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
106	West Point City: East Park	2450 W. 350 N. West Point, UT 84015	2,3	Paul Rochell	3200 W. 300 N. West Point, UT 84015	(801) 776-0970
108	Thurgood Excavating Inc.	2381 W 1200 N Clinton, UT 84015	4	Richard or Bryce	2381 W 1200 N Clinton, UT 84015	(801) 776-3601
122	Clinton City: City Park	2267 N. 1500 W. Clinton, UT 84015	4	Zac Martinez	2267 N. 1500 W. Clinton, UT 84015	(801) 774-2690

Table 3.1.B Potential Contamination Source List (1750 West Well)

ID NO.	BUSINESS NAME OR FACILITY	ADDRESS	ZONE	CONTACT PERSON	ADDRESS OF CONTACT PERSON	PHONE NUMBER OF CONTACT PERSON
120	Davis School District: Clinton Elementary	1101 W. 1800 N. Clinton, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
124	Clinton City: Powerline Park	1740 N. 1700 W. Clinton, UT 84015	4	Zac Martinez	2267 N. 1500 W. Clinton, UT 84015	(801) 774-2690
126	Clinton City: Cemetery	800 N. 800 W. Clinton, UT 84015	3 & 4	Zac Martinez	2267 N. 1500 W. Clinton, UT 84015	(801) 774-2690
128	Clinton City: Veteran's Park	1000 W. 1800 N. Clinton, UT 84015	4	Zac Martinez	2267 N. 1500 W. Clinton, UT 84015	(801) 774-2690
134	Maverik	1036 W. 1800 N. Clinton, UT 84015	4	Manager	1036 W. 1800 N. Clinton, UT 84015	(801) 776-2379
138	Sterling Quality Tire Factory	1078 W. 1800 N. Clinton, UT 84015	4	Craig Jensen	1078 W. 1800 N. Clinton, UT 84015	(801) 728-0525
140	Clearfield City: Steed Park	950 W. 300 N. Clearfield, UT 84015	3	Randy Goodnight	40 S. 125 E. Clearfield, UT 84015	(801) 774-7276
142	Clearfield City: Central Park	140 E. Center St. Clearfield, UT 84015	4	Randy Goodnight	40 S. 125 E. Clearfield, UT 84015	(801) 774-7276
144	Clearfield City: Jacobsen Park	1385 W. 1045 S. Clearfield, UT 84015	4	Randy Goodnight	40 S. 125 E. Clearfield, UT 84015	(801) 774-7276
146	Clearfield City: Bicentennial Park	700 E. 600 S. Clearfield, UT 84015	4	Randy Goodnight	40 S. 125 E. Clearfield, UT 84015	(801) 774-7276
148	Clearfield City: Cemetery	1225 S. 1000 W. Clearfield, UT 84015	4	Randy Goodnight	40 S. 125 E. Clearfield, UT 84015	(801) 774-7276
152	Davis School District: Wasatch Elementary	270 E. Center St. Clearfield, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
154	Davis School District: North Davis Jr. High School	835 E. State St. Clearfield, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
156	Davis School District: South Clearfield Elementary	990 E. 700 S. Clearfield, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400

Table 3.1.B Potential Contamination Source List (1750 West Well)

ID NO.	BUSINESS NAME OR FACILITY	ADDRESS	ZONE	CONTACT PERSON	ADDRESS OF CONTACT PERSON	PHONE NUMBER OF CONTACT PERSON
120	Davis School District: Clinton Elementary	1101 W. 1800 N. Clinton, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
158	Davis School District: Hill Field Elementary	389 S. 1000 E. Clearfield, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
160	Davis School District: Holt Elementary	448 N. 1000 W. Clearfield, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
164	Maverik Country Store #179	300 N. 1000 W. Clearfield, UT 84015	3	Manager	300 N. 1000 W. Clearfield, UT 84015	(801) 295-5557
166	Utah Power & Light Substation	1000 W. 627 S. Clearfield, UT 84015	3	Lynn Ellis	2484 Washington Blvd. Ogden, UT 84404	(801) 399-2131 #3
168	Clearfield City: Freeport Center Detention Pond	Freeport Center	4	Scott Hodge	140 E. Center St. Clearfield, UT 84015	(801) 744-7220
170	Walt's Service/ Phillips 66	133 N. Main St. Clearfield, UT 84015	4	Manager	133 N. Main St. Clearfield, UT 84015	(801) 776-4435
174	Dee's Service Center	160 N. Main St. Clearfield, UT 84015	4	Dee Christiansen	160 N. Main St. Clearfield, UT 84015	(801) 825-5788
178	Clearfield Manufacturing	352 S. Main St. Clearfield, UT 84015	4	Facilities Mgr.	352 S. Main St. Clearfield, UT 84015	(801) 825-2131
180	Freeport Cold Storage	440 S. Main St. Clearfield, UT 84015	4	Stuart Smith	440 S. Main St. Clearfield, UT 84015	(801) 773-5911
182	Master Muffler & Brake	183 S. State St. Clearfield, UT 84015	4	Doug Thomson	1591 N. Main St. Layton, UT 84041	(801) 825-6671
188	Horsepower Unlimited Car Care Center	640 S. Main St. Clearfield, UT 84015	4	Don Faldowski	640 S. Main St. Clearfield, UT 84015	(801) 776-6412
190	Arrant	645 E. 700 S. Clearfield, UT 84015	4	Jim Arrant	645 E. 700 S. Clearfield, UT 84015	(801) 776-0905

Table 3.1.B Potential Contamination Source List (1750 West Well)

ID NO.	BUSINESS NAME OR FACILITY	ADDRESS	ZONE	CONTACT PERSON	ADDRESS OF CONTACT PERSON	PHONE NUMBER OF CONTACT PERSON
120	Davis School District: Clinton Elementary	1101 W. 1800 N. Clinton, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
192	People's Choice Cars	545 S. State St. Clearfield, UT 84015	4	Ken Gomm	545 S. State St. Clearfield, UT 84015	(801) 728-9700
196	Universal Testing LLC	393 S. Main St. Clearfield, UT 84015	4	Brent Mockli	393 S. Main St. Clearfield, UT 84015	(801) 773-5959
198	7-Eleven	712 S. State St. Clearfield, UT 84015	4	Manager	712 S. State St. Clearfield, UT 84015	(801) 825-3770
200	Maverik	709 S Clearfield, UT 84015. State St.	4	Manager	709 S State St. Clearfield, UT 84015.	(801) 773-4685
202	Elmer's Car Care Center	385 E. 450 S. Clearfield, UT 84015	4	Manager	385 E. 450 S. Clearfield, UT 84015	(801) 773-0270
204	SXOR Motor Sports	208 E. 200 S. Clearfield, UT 84015	4	Manager	208 E. 200 S. Clearfield, UT 84015	(801) 540-4817
208	Phillip's 66	133 N. Main St. Clearfield, UT 84015	4	Cindy Percival	133 N. Main St. Clearfield, UT 84015	(801) 776-4435
210	J R's: Service Center	196 N. Main St. Clearfield, UT 84015	4	Manager	196 N. Main St. Clearfield, UT 84015	(801) 825-0535
212	Shell	320 N. Main St. Clearfield, UT 84015	4	Manager	320 N. Main St. Clearfield, UT 84015	(801)-766-2122
214	Sherwin-Williams	426 N. Main St. Clearfield, UT 84015	4	Reed Peterson	426 N. Main St. Clearfield, UT 84015	(801) 776-2190
216	C&M Tires	548 N. Main St. Clearfield, UT 84015	4	Manager	548 N. Main St. Clearfield, UT 84015	(801) 773-8159
218	Conoco	641 N. Main St. Clearfield, UT 84015	4	John Richardson	641 N. Main St. Clearfield, UT 84015	(801) 394-2649

Table 3.1.B Potential Contamination Source List (1750 West Well)

ID NO.	BUSINESS NAME OR FACILITY	ADDRESS	ZONE	CONTACT PERSON	ADDRESS OF CONTACT PERSON	PHONE NUMBER OF CONTACT PERSON
120	Davis School District: Clinton Elementary	1101 W. 1800 N. Clinton, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
220	Tesoro Gas	666 N. Main St. Clearfield, UT 84015	4	Facilities Mgr.	666 N. Main St. Clearfield, UT 84015	(801) 774-6800
224	I-15	See map	4	Rick Pro	169 N. Wall Ave. P.O. Box 12580 Ogden, UT 84412	(801) 620-1611
226	7-11 #26103	1771 N. Main St. Sunset, UT 84015	4	Manager	1771 N. Main St. Sunset, UT 84015	(801) 825-3545
228	Sunset Towing & Auto Repair	1727 N. Main St. Sunset, UT 84015	4	Kelly Silouang	1727 N. Main St. Sunset, UT 84015	(801) 814-0606
230	Tesoro	275 W. 1300 N. Sunset, UT 84015	4	Gaby Klein	275 W. 1300 N. Sunset, UT 84015	(801) 774-8420
232	Sunset City: Central Park	125 W. 1800 N. Sunset, UT 84015	4	Mickey Hennissee	85 W. 1800 N. Sunset, UT 84015	(801) 825-0770
234	Sunset City: Maintenance Shop	85 W. 1800 N. Sunset, UT 84015	4	Mickey Hennissee	85 W. 1800 N. Sunset, UT 84015	(801) 825-0770
236	Davis School District: Sunset Elementary	2014 N. 250 W. Sunset, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
238	Davis School District: Sunset Jr. High School	1610 N. 250 W. Sunset, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
240	Davis School District: Doxey Elementary	944 N. 250 W. Sunset, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
300	Freeport Maintenance Shop	Bldg 25 Freeport Center, Clearfield UT 84016	4	Bruce Cook, Facilities Mgr.	Bldg A-1 Freeport Center Clearfield, UT 84016	(801) 825-9741
301	NCFI Polyurethane	Bldg M9 Freeport Center, Clearfield UT 84016	4	Bruce Cook, Facilities Mgr.	Bldg A-1 Freeport Center Clearfield, UT 84016	(801) 825-9741
302	Ashland Inc.	Bldg 12 Freeport Center, Clearfield UT 84016	4	Bruce Cook, Facilities Mgr.	Bldg A-1 Freeport Center Clearfield, UT 84016	(801) 825-9741

Table 3.1.B Potential Contamination Source List (1750 West Well)

ID NO.	BUSINESS NAME OR FACILITY	ADDRESS	ZONE	CONTACT PERSON	ADDRESS OF CONTACT PERSON	PHONE NUMBER OF CONTACT PERSON
120	Davis School District: Clinton Elementary	1101 W. 1800 N. Clinton, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
304	Catalyst Service	Bldg 94 Freeport Center, Clearfield UT 84016	4	Bruce Cook, Facilities Mgr.	Bldg A-1 Freeport Center Clearfield, UT 84016	(801) 825-9741
306	Futura Industries	Bldgs H11 & J8 Freeport Center, Clearfield UT 84016	4	Bruce Cook, Facilities Mgr.	Bldg A-1 Freeport Center Clearfield, UT 84016	(801) 825-9741
308	W.R. Grace	Bldg J5 Freeport Center, Clearfield UT 84016	4	Bruce Cook, Facilities Mgr.	Bldg A-1 Freeport Center Clearfield, UT 84016	(801) 825-9741
312	Lifetime Products, Metals	Bldgs H3 and H4 Freeport Center, Clearfield UT 84016	4	Bruce Cook, Facilities Mgr.	Bldg A-1 Freeport Center Clearfield, UT 84016	(801) 825-9741
314	Paint Sundries, Inc.	Bldg F9 Freeport Center, Clearfield UT 84016	4	Bruce Cook, Facilities Mgr.	Bldg A-1 Freeport Center Clearfield, UT 84016	(801) 825-9741
316	Heritage Park	1300 N. 1000 W. Clinton, UT 84015	4	Zac Martinez	2267 N. 1500 W. Clinton, UT 84015	(801) 774-2690
318	Maverik	1843 N. Main St Sunset, UT 84015	4	Manager	1843 N. Main St Sunset, UT 84015	(801) 825-3888
320	Charlie's Service & Muffler	1901 N, Main St Clearfield, UT	4	Manager	1901 N, Main St Clearfield, UT	(801) 773-1193
322	O. Wayne and EuVola M. Thornock Family Memorial Park	200 S. 500 W. Clearfield, UT 84015	4	Randy Goodnight	40 S. 125 E. Clearfield, UT 84015	(801) 774-7276
324	Train Watch Park	200 W. 250 N. Clearfield, UT	4	Randy Goodnight	40 S. 125 E. Clearfield, UT 84015	(801) 774-7276
326	NAPA Auto Parts	20 N. Main St Clearfield, UT 84015	4	Manager	20 N. Main St Clearfield, UT 84015	(801) 776-0160
328	Utility Trailer Manufacturing Co	1111 S. 1000 W. Clearfield, UT 84015	4	Bruce Cook, Facilities Mgr.	Bldg A-1 Freeport Center Clearfield, UT 84016	(801) 825-9741

Table 3.1.B Potential Contamination Source List (1750 West Well)

ID NO.	BUSINESS NAME OR FACILITY	ADDRESS	ZONE	CONTACT PERSON	ADDRESS OF CONTACT PERSON	PHONE NUMBER OF CONTACT PERSON
120	Davis School District: Clinton Elementary	1101 W. 1800 N. Clinton, UT 84015	4	Gary Payne	Bldg F-3 Freeport Center Clearfield, UT 84015	(801) 402-7400
330	Wasatch Metal Finishing	Bldgs G9 & A15 Freeport Center, Clearfield, UT 84016	4	Bruce Cook, Facilities Mgr.	Bldg A-1 Freeport Center Clearfield, UT 84016	(801) 825-9741
400	Other wells	Throughout Davis County	2,3,4	Various	Available through an area search at https://www.waterrights.utah.gov/wellinfo/wellsearch.asp	N/A
410	Union Pacific Railroad Company	Refer to Map	4	Ken Welch	Omaha, NB	(402) 271-4856
420	Davis-Weber Canal Company	Refer to Map	2,3,4	Public	N/A	N/A
430	Hill Air Force Base	Refer to Map	4	Terry Hess	7274 Wardleigh Rd. Hill AFB, UT 84056	(801) 775-3649
500	Small Farming Areas	Refer to Map	2,3,4	Varies	Varies – Information culled from GIS	Varies
510	Sewer Lines	N/A	2,3,4	Public	N/A	N/A
520	Residential Areas	N/A	2,3,4	Public	N/A	N/A

3.2 Identified Hazards

Table 3.2.A Potential Contamination Sources and Hazards for the 2250 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS
102	Davis School District: West Point Jr. High School	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
104	Davis School District: Lakeside Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
106	West Point City: East Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
108	Thurgood Excavating Inc.	-Underground Oil Tanks -Underground Fuel Tanks	-Spills or Leaks
122	Clinton City: City Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water

Table 3.2.B Potential Contamination Sources and Hazards for the 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS
120	Davis School District: Clinton Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
124	Clinton City: Powerline Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
126	Clinton City: Cemetery	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
128	Clinton City: Veteran's Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
134	Maverik	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
138	Sterling Quality Tire Factory	-Oils	-Leaking oil based fluids

Table 3.2.B Potential Contamination Sources and Hazards for the 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS
140	Clearfield City: Steed Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
142	Clearfield City: Central Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
144	Clearfield City: Jacobsen Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
146	Clearfield City: Bicentennial Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
148	Clearfield City: Cemetery	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
152	Davis School District: Wasatch Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
154	Davis School District: North Davis Jr. High School	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
156	Davis School District: South Clearfield Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
158	Davis School District: Hill Field Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
160	Davis School District: Holt Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
164	Maverik Country Store #179	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
166	Utah Power & Light Substation	-Non PCB oil in transformers	-Leaking oil
168	Clearfield City: Freeport Center Detention Pond	-Infiltrating contaminated water	-Waste water discharges, storm water, minerals, fertilizers, chemical spills, etc.
170	Walt's Service/ Phillips 66	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
174	Dee's Service Center	-Oils -Antifreeze	-Leaking fuels or oil based fluids

Table 3.2.B Potential Contamination Sources and Hazards for the 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS
178	Clearfield Manufacturing	-Diesel fuel -Hydraulic oil	-Leaking fuels or oil based fluids
180	Freeport Cold Storage	-Liquid ammonia -Oil	-Leaking refrigerant or oil based fluids
182	Master Muffler & Brake	-Motor oil	-Leaking containers
188	Horsepower Unlimited Car Care Center	-Oils -Antifreeze	-Leaking fuels or oil based fluids
190	Arrant	-Oils -Antifreeze	-Leaks or spills
192	People's Choice Cars	-Solvents -Oils -Antifreeze	-Leaking fuels or oil based fluids
196	Universal Testing LLC	-Acetone -Solvents	-Leaks or spills
198	7-Eleven	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
200	Maverik	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
202	Elmer's Car Care Center	-Oils	-Leaking oil based fluids
204	SXOR Motor Sports	-Oils -Solvents	-Leaking fuels or oil based fluids
208	Phillip's 66	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
210	J R's: Service Center	-Oils -Antifreeze	-Leaking fuels or oil based fluids
212	Shell	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
214	Sherwin-Williams	-Paints -Mineral spirits	-Leaks or spills
216	C&M Tires	-Solvents	-Leaks or spills
218	Conoco	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
220	Tesoro Gas	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills

Table 3.2.B Potential Contamination Sources and Hazards for the 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS
224	I-15	-Vehicles containing hazardous materials	-Spills or leaky containers
226	7-11 #26103	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
228	Sunset Towing & Auto Repair	-Oils	-Leaking oil based fluids
230	Tesoro	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
232	Sunset City: Central Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
234	Sunset City: Maintenance Shop	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
236	Davis School District: Sunset Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
238	Davis School District: Sunset Jr. High School	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
240	Davis School District: Doxey Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
300	Freeport Maintenance Shop	-Oils -Diesel fuel -Hydraulic oil -Antifreeze	-Leaking fuels or oil based fluids
301	NFCI Polyurethane	-Solvents -Acetone Polyurethane	-Leaks or spills
302	Ashland Chemical	-Solvents -Oils -Acetone	-Leaking fuels or oil based fluids
304	CEDA Catalyst	-Oils -Diesel fuel -Hydraulic oil	-Leaking fuels or oil based fluids
306	Futura Industries	-Solvents -Oils -Acetone	-Leaks or spills

Table 3.2.B Potential Contamination Sources and Hazards for the 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS
308	W.R. Grace	-Paints -Solvents -Adhesives	-Leaks or spills
312	Lifetime Products, Metals	-Solvents -Oils -Acetone	-Leaks or spills
314	Paint Sundries, Inc.	-Paints -Mineral spirits	-Leaks or spills
316	Heritage Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
318	Maverik	-Below ground gasoline & diesel storage tanks	-Leaking containers or fuel spills
320	Charlie's Service & Muffler	-Oils, Fuel -Hydraulic oil -Antifreeze	-Leaking fuels or oil based fluids
322	O. Wayne and EuVola M. Thornock Family Memorial Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
324	Train Watch Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
326	NAPA Auto Parts	-Oils -Antifreeze -Household cleaning chemicals	-Leaking containers or spills
328	Utility Trailer Manufacturing Co	-Acetone -Solvents -Acids	-Leaks or spills
330	Wasatch Metal Finishing	-Acetone -Solvents -Acids	-Leaking containers or spills
400	Other wells	-Not properly sealed	-Provides direct conduit to groundwater
410	Union Pacific Railroad Company	-Freight cars containing hazardous materials	-Spills or leaky containers
420	Davis-Weber Canal Company	-Infiltrating contaminated water	-Waste water discharges, storm water, minerals, fertilizers, chemical spills, etc.
430	Hill Air Force Base	-Various stored chemicals	-Spills or leaky containers

Table 3.2.B Potential Contamination Sources and Hazards for the 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS
500	Small Farming Areas	-Above ground storage tanks -Fertilizer/pesticide/herbicide application	-Leaking fuel or fuel spills -Over application -Fertilizers can contain toxins and contribute nitrates to the ground water.
510	Sewer Lines and Septic Tanks	-Leaky sewer lines -Leaky septic tanks	-Sewage leaks containing pathogens, organic matter, and nutrients.
520	Residential Areas	-Residential Homes	-Fertilizers, herbicides, and household contaminants.

3.3 Prioritized Inventory of the Potential Contamination Sources R309-600-10(1)

The identified PCSs have been prioritized in the following table according to their perceived likelihood for groundwater contamination at the West Point Wells, were the contaminants to enter the groundwater system within the delineated protection zones.

Table 3.3 Prioritized Potential Contamination Source List for the 2250 & 1750 West Wells

PRIORITY NO.	ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS
1	430	Hill Air Force Base	-Various chemicals	-Leaks or spills
2	500	Small Farming Areas	-Above ground storage tanks -Fertilizer/pesticide/herbicide application	-Leaking fuel or fuel spills -Over application -Fertilizers can contain toxins and contribute nitrates to the ground water.
3	510	Sewer Lines	-Leaky sewer lines	-Sewage leaks containing pathogens, organic matter, and nutrients.
4	520	Residential Areas	-Residential Homes	-Fertilizers, herbicides, and household contaminants.
5	410	Union Pacific Railroad Company	-Freight cars containing hazardous materials	-Spills or leaky containers
6	224	I-15	-Vehicles containing hazardous materials	-Spills or leaky containers
7	164	Maverik Country Store #179	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
8	106	West Point City: East Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water

Table 3.3 Prioritized Potential Contamination Source List for the 2250 & 1750 West Wells

PRIORITY NO.	ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS
9	140	Clearfield City: Steed Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
10	160	Davis School District: Holt Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
11	126	Clinton City: Cemetery	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
12	134	Maverik	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
13	230	Tesoro	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
14	226	7-11 #26103	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
15	318	Maverik	-Below ground gasoline & diesel storage tanks	-Leaking containers or fuel spills
16	320	Charlie's Service & Muffler	-Oils, Fuel -Antifreeze	-Leaking fuels or oil based fluids
17	218	Conoco	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
18	220	Tesoro Gas	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
19	212	Shell	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
20	170	Walt's Service/ Phillips 66	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
21	208	Phillip's 66	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
22	326	NAPA Auto Parts	-Oils -Antifreeze -Household cleaning chemicals	-Leaking containers or spills
23	202	Elmer's Car Care Center	-Oils	-Leaking oil based fluids
24	198	7-Eleven	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills

Table 3.3 Prioritized Potential Contamination Source List for the 2250 & 1750 West Wells

PRIORITY NO.	ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS
25	200	Maverik	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills
26	174	Dee's Service Center	-Oils -Antifreeze	-Leaking fuels or oil based fluids
27	178	Clearfield Manufacturing	-Diesel fuel -Hydraulic oil	-Leaking fuels or oil based fluids
28	188	Horsepower Unlimited Car Care Center	-Oils -Antifreeze	-Leaking fuels or oil based fluids
29	138	Sterling Quality Tire Factory	-Oils	-Leaking oil based fluids
30	180	Freeport Cold Storage	-Liquid ammonia -Oil	-Leaking refrigerant or oil based fluids
31	228	Sunset Towing & Auto Repair	-Oils	-Leaking oil based fluids
32	182	Master Muffler & Brake	-Motor oil	-Leaking containers
34	210	J R's: Service Center	-Oils -Antifreeze	-Leaking fuels or oil based fluids
35	234	Sunset City: Maintenance Shop	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
36	214	Sherwin-Williams	-Paints -Mineral spirits	-Spills or leaky containers
37	204	SXOR Motor Sports	-Oils -Solvents -Paints	-Leaking fuels or oil based fluids
38	196	Universal Testing LLC	-Acetone -Solvents	-Leaks or spills
39	192	People's Choice Cars	-Solvents -Oils -Antifreeze	-Leaking fuels or oil based fluids
40	216	C&M Tires	-Solvents	-Spills or leaky containers
41	190	Arrant	-Oils -Antifreeze	-Leaks or spills
42	400	Other wells	Not properly sealed	-Provides direct conduit to groundwater

Table 3.3 Prioritized Potential Contamination Source List for the 2250 & 1750 West Wells

PRIORITY NO.	ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS
43	420	Davis-Weber Canal Company	-Infiltrating contaminated water	-Waste water discharges, storm water, minerals, fertilizers, chemical spills, etc.
44	168	Clearfield City: Freeport Center Detention Pond	-Infiltrating contaminated water	-Waste water discharges, storm water, minerals, fertilizers, chemical spills, etc.
45	166	Utah Power & Light Substation	-Non PCB oil in transformers	-Leaking oil
46	300	Freeport Maintenance Shop	-Oils -Diesel fuel -Hydraulic oil -Antifreeze	-Leaking fuels or oil based fluids
47	301	NFCI Polyurethane	-Solvents -Acetone -Polyurethane	-Leaks or spills
48	302	Ashland Chemical	-Solvents -Oils -Acetone	-Leaking fuels or oil based fluids
49	304	CEDA Catalyst	-Oils -Diesel fuel -Hydraulic oil	-Leaking fuels or oil based fluids
50	306	Futura Industries	-Solvents -Oils -Acetone	-Leaks or spills
51	308	W.R. Grace	-Paints -Solvents -Adhesives	-Leaks or spills
52	312	Lifetime Products, Metals	-Solvents -Oils -Acetone	-Leaks or spills
53	332	Utility Trailer Manufacturing Co	-Acetone -Solvents -Acids	-Leaks or spills
54	334	Wasatch Metal Finishing	-Acetone -Solvents -Acids	-Leaking containers or spills
55	314	Paint Sundries, Inc.	-Paints -Mineral spirits	-Leaks or spills
56	102	Davis School District: West Point Jr. High School	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water

Table 3.3 Prioritized Potential Contamination Source List for the 2250 & 1750 West Wells

PRIORITY NO.	ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS
57	316	Heritage Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
58	104	Davis School District: Lakeside Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
59	108	Thurgood Excavating Inc.	-Underground Oil Tanks -Underground Fuel Tanks	-Spills or Leaks
60	324	Train Watch Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
61	322	O. Wayne and EuVola M. Thornock Family Memorial Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
62	120	Davis School District: Clinton Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
63	122	Clinton City: City Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
64	124	Clinton City: Powerline Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
65	128	Clinton City: Veteran's Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
66	142	Clearfield City: Central Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
67	144	Clearfield City: Jacobsen Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
68	146	Clearfield City: Bicentennial Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
69	148	Clearfield City: Cemetery	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
70	152	Davis School District: Wasatch Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water

Table 3.3 Prioritized Potential Contamination Source List for the 2250 & 1750 West Wells

PRIORITY NO.	ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS
71	154	Davis School District: North Davis Jr. High School	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
72	156	Davis School District: South Clearfield Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
73	158	Davis School District: Hill Field Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
74	232	Sunset City: Central Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
75	236	Davis School District: Sunset Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
76	238	Davis School District: Sunset Jr. High School	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water
77	240	Davis School District: Doxey Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water

3.4 Potential Contamination Source Location

The locations of the PCSs in terms of source protection zones for the 2250 West Well and the 1750 West Well are listed in Tables 3.0.A and B, respectively.

3.5 Potential Contamination Sources Plotted on Map

A delineation map with the PCSs identified for the 1750 West and 2250 West wells is included as Appendix E to this Plan.

End Of Section 3.0

4.0 **Identification and Assessment Of Current Controls – R309-600-10(2)**

4.1 Identify and Assess Regulatory Controls R309-600-10(2)(a)

There are several existing federal regulations, which are in effect to control chemical, biological, and radiological substances, which are used, stored, manufactured, transported, or disposed at each potential contamination source. Federal regulations, which directly or indirectly serve to protect groundwater, are listed below and briefly described in Table 4.1.A.

- Clean Water Act (CWA),
- Safe Drinking Water Act (SDWA),
- Resource Conservation and Recovery Act (RCRA),
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
- Emergency Planning and Community Right-To-Know Act (EPCRA OR SARA Title III)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and
- Toxic Substance Control Act (TSCA).

Table 4.1.A Federal Regulations and Regulating Agencies

FEDERAL REGULATION	DESCRIPTION	REGULATING AGENCY
CWA	Controls chemical discharges into surface water.	Utah Division of Water Quality
SDWA	Sets safe water standards for public drinking water.	Utah Division of Water Quality
RCRA	Controls the use and disposal of hazardous wastes.	Utah Division of Solid and Haz. Waste
CERCLA	Regulates the cleanup of existing spills.	Utah Division of Environmental Response and Remediation

Table 4.1.A Federal Regulations and Regulating Agencies		
FEDERAL REGULATION	**DESCRIPTION**	**REGULATING AGENCY**
HLPSA	Hazardous Liquid Pipeline Safety Act, regulates petroleum product transport via pipelines.	U.S.D.O.T. Office of Pipeline Safety
SARA TITLE III OR EPCRA	Regulates chemicals and activities included under both RCRA and CERCLA.	U.S. Environmental Protection Agency
FIFRA	Controls manufacturing, labeling, and sales of insecticides and herbicides.	U.S. Environmental Protection Agency
TSCA	Establishes use, storage, and disposal requirements for new chemical substances or mixtures.	U.S. Environmental Protection Agency

In addition to the federal regulations, the state of Utah has enacted several regulations, which serve to preserve water quality, including groundwater. Several of the state laws parallel the listed federal laws. The state regulations that serve to protect groundwater directly or indirectly are listed below and briefly described in Table 4.1.B.

- Underground Storage Tank Rule (USTR),
- Utah Pollutant Discharge Elimination System (UPDES),
- Ground Water Quality Protection Rule (GQPR),
- Underground Injections Control Rule (UIC),
- Used Oil Management Rule,
- Hazardous Material Rule,
- Hazardous and Solid Waste Permitting and Management Rules,
- Water Well Rule.

Table 4.1.B State Regulations and Regulating Agencies

STATE REGULATION	DESCRIPTION	REGULATING AGENCY
USTR	Underground storage tanks are registered with state and periodically checked for leaks.	Utah Division of Environmental Response and Remediation
UPDES	Statewide program for issuing permits for discharges of biologically, chemically, or physically altered water to the surface water of the State.	Utah Division of Water Quality
GQPR	Sets ground water classifications and establishes a permit system to control discharge of contaminates that would affect ground water quality.	Utah Division of Water Quality
UIC	Regulates discharges directly into the ground water through injection wells.	Utah Division of Water Quality
Used Oil Management Rule	Regulates the handling and disposal of used motor oil and other petroleum fluids used by private and public vehicles and industries.	Utah Division of Solid and Hazardous Waste
Hazardous Material Rule	State law adopting the provisions of SARA Title III. Establishes state and local emergency response centers.	Utah Division of Environmental Response and Remediation
Hazardous and Solid Waste Permitting and Management Rules	State law adopting the provisions of RCRA. Regulates hazardous and solid waste streams and landfills.	Utah Division of Solid and Hazardous Waste
Water Well Rule	Regulates drilling, repairing, and abandonment of wells used to supply water.	Utah Division of Water Rights

Although federal and state laws have been established to regulate PCSs, it is recognized by the City that these government agencies are limited in their abilities to carry them out. Government regulations that have been established to control the listed PCSs along with the City's assessment of their adequacy in safeguarding their public drinking water are shown in Tables 4.1.C and D.

Table 4.1.C Potential Contamination Source List with Regulatory Controls: 2250 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	EXISTING GOVERNMENTAL CONTROLS	CONTROLS ADEQUATE
102	Davis School District: West Point Jr. High School	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
104	Davis School District: Lakeside Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
106	West Point City: East Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
108	Thurgood Excavating Inc.	-Underground Oil Tanks -Underground Fuel Tanks	-Spills or Leaks	-EPA requirements on used motor oil storage. UAC R315-15-3 -Regulated by the Division of Environmental Response and Remediation through the Underground Storage Tanks Rule. Tanks that are on the UST list are regularly inspected and often have safeguards such as secondary containment of continuous monitoring.	No
122	Clinton City: City Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No

Table 4.1.D Potential Contamination Source List with Regulatory Controls: 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	EXISTING GOVERNMENTAL CONTROLS	CONTROLS ADEQUATE
120	Davis School District: Clinton Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
124	Clinton City: Powerline Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
126	Clinton City: Cemetery	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
128	Clinton City: Veteran's Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
134	Maverik	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills	Regulated by the Division of Environmental Response and Remediation through the Underground Storage Tanks Rule. Tanks that are on the UST list are regularly inspected and often have safeguards such as secondary containment or continuous monitoring UAC R311-211-2	No
138	Sterling Quality Tire Factory	-Oils	-Leaking oil based fluids	EPA requirements on used motor oil storage. UAC R315-15-3	No
140	Clearfield City: Steed Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No

Table 4.1.D Potential Contamination Source List with Regulatory Controls: 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	EXISTING GOVERNMENTAL CONTROLS	CONTROLS ADEQUATE
142	Clearfield City: Central Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
144	Clearfield City: Jacobsen Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
146	Clearfield City: Bicentennial Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
148	Clearfield City: Cemetery	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
152	Davis School District: Wasatch Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
154	Davis School District: North Davis Jr. High School	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
156	Davis School District: South Clearfield Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
158	Davis School District: Hill Field Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No

Table 4.1.D Potential Contamination Source List with Regulatory Controls: 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	EXISTING GOVERNMENTAL CONTROLS	CONTROLS ADEQUATE
160	Davis School District: Holt Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
164	Maverik Country Store #179	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills	Regulated by the Division of Environmental Response and Remediation through the Underground Storage Tanks Rule. Tanks that are on the UST list are regularly inspected and often have safeguards such as secondary containment or continuous monitoring UAC R311-211-2	No
166	Utah Power & Light Substation	-Non PCB oil in transformers	-Leaking oil	None	No
168	Clearfield City: Freeport Center Detention Pond	-Infiltrating contaminated water	-Waste water discharges, storm water, minerals, fertilizers, chemical spills, etc.	-CWA controls chemical discharges into surface waters. -Regulated by Utah Division of Water Quality through UPDES permits	Yes
170	Walt's Service/ Phillips 66	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills	Regulated by the Division of Environmental Response and Remediation through the Underground Storage Tanks Rule. Tanks that are on the UST list are regularly inspected and often have safeguards such as secondary containment or continuous monitoring UAC R311-211-2	No
174	Dee's Service Center	-Oils -Antifreeze	-Leaking fuels or oil based fluids	Used Oil and Hazardous Material Rules	No
178	Clearfield Manufacturing	-Diesel fuel -Hydraulic oil	-Leaking fuels or oil based fluids	Used Oil and Hazardous Material Rules	No
180	Freeport Cold Storage	-Liquid ammonia -Oil	-Leaking refrigerant or oil based fluids	Used Oil and Hazardous Material Rules	No

Table 4.1.D Potential Contamination Source List with Regulatory Controls: 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	EXISTING GOVERNMENTAL CONTROLS	CONTROLS ADEQUATE
182	Master Muffler & Brake	-Motor oil	-Leaking containers	Used Oil and Hazardous Material Rules	No
188	Horsepower Unlimited Car Care Center	-Oils -Antifreeze	-Leaking fuels or oil based fluids	EPA requirements on used motor oil storage. UAC R315-15-3	No
190	Arrant	-Oils -Antifreeze	-Leaks or spills	EPA requirements on used motor oil storage. UAC R315-15-3	No
192	People's Choice Cars	-Solvents -Oils -Antifreeze	-Leaking fuels or oil based fluids	EPA requirements on used motor oil storage. UAC R315-15-3	No
196	Universal Testing LLC	-Acetone -Solvents	-Leaks or spills	RCRA, Hazardous Material Rule	No
198	7-Eleven	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills	Regulated by the Division of Environmental Response and Remediation through the Underground Storage Tanks Rule. Tanks that are on the UST list are regularly inspected and often have safeguards such as secondary containment or continuous monitoring UAC R311-211-2	No
200	Maverik	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills	Regulated by the Division of Environmental Response and Remediation through the Underground Storage Tanks Rule. Tanks that are on the UST list are regularly inspected and often have safeguards such as secondary containment or continuous monitoring UAC R311-211-2	No
202	Elmer's Car Care Center	-Oils	-Leaking oil based fluids	EPA requirements on used motor oil storage. UAC R315-15-3	No
204	SXOR Motor Sports	-Oils -Solvents	-Leaking fuels or oil based fluids	EPA requirements on used motor oil storage. UAC R315-15-3	No

Table 4.1.D Potential Contamination Source List with Regulatory Controls: 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	EXISTING GOVERNMENTAL CONTROLS	CONTROLS ADEQUATE
208	Phillip's 66	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills	Regulated by the Division of Environmental Response and Remediation through the Underground Storage Tanks Rule. Tanks that are on the UST list are regularly inspected and often have safeguards such as secondary containment or continuous monitoring UAC R311-211-2	No
210	J R's: Service Center	-Oils -Antifreeze	-Leaking fuels or oil based fluids	EPA requirements on used motor oil storage. UAC R315-15-3	No
212	Shell	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills	Regulated by the Division of Environmental Response and Remediation through the Underground Storage Tanks Rule. Tanks that are on the UST list are regularly inspected and often have safeguards such as secondary containment or continuous monitoring UAC R311-211-2	No
214	Sherwin-Williams	-Paints -Mineral spirits	-Leaks or spills	RCRA, Hazardous Material Rule	No
216	C&M Tires	-Solvents	-Leaks or spills	Used Oil and Hazardous Material Rules	No
218	Conoco	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills	Regulated by the Division of Environmental Response and Remediation through the Underground Storage Tanks Rule. Tanks that are on the UST list are regularly inspected and often have safeguards such as secondary containment or continuous monitoring UAC R311-211-2	No

Table 4.1.D Potential Contamination Source List with Regulatory Controls: 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	EXISTING GOVERNMENTAL CONTROLS	CONTROLS ADEQUATE
220	Tesoro Gas	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills	Regulated by the Division of Environmental Response and Remediation through the Underground Storage Tanks Rule. Tanks that are on the UST list are regularly inspected and often have safeguards such as secondary containment or continuous monitoring UAC R311-211-2	No
224	I-15	-Vehicles containing hazardous materials	-Spills or leaky containers	-Emergency response teams -Hazardous Materials Teams -Environmental Managers -SPCC Plans for Petroleum -Corridor Emergency Response for sensitive areas	Yes for large spills; No for small spills and leaks
226	7-11 #26103	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills	Regulated by the Division of Environmental Response and Remediation through the Underground Storage Tanks Rule. Tanks that are on the UST list are regularly inspected and often have safeguards such as secondary containment or continuous monitoring UAC R311-211-2	No
228	Sunset Towing & Auto Repair	-Oils	-Leaking oil based fluids	EPA requirements on used motor oil storage. UAC R315-15-3	No
230	Tesoro	-Below ground gasoline storage tanks	-Leaking fuels or fuel spills	Regulated by the Division of Environmental Response and Remediation through the Underground Storage Tanks Rule. Tanks that are on the UST list are regularly inspected and often have safeguards such as secondary containment or continuous monitoring UAC R311-211-2	No
232	Sunset City: Central Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No

Table 4.1.D Potential Contamination Source List with Regulatory Controls: 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	EXISTING GOVERNMENTAL CONTROLS	CONTROLS ADEQUATE
234	Sunset City: Maintenance Shop	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
236	Davis School District: Sunset Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
238	Davis School District: Sunset Jr. High School	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
240	Davis School District: Doxey Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
300	Freeport Maintenance Shop	-Oils -Diesel fuel -Hydraulic oil -Antifreeze	-Leaking fuels or oil based fluids	Used Oil and Hazardous Material Rules	No
301	NFCI Polyurethane	-Solvents -Acetone -Polyurethane	-Leaks or spills	RCRA, Hazardous Material Rule	No
302	Ashland Chemical	-Solvents -Oils -Acetone	-Leaking fuels or oil based fluids	RCRA, Hazardous Material Rule, TSCA	No
304	CEDA Catalyst	-Oils -Diesel fuel -Hydraulic oil	-Leaking fuels or oil based fluids	RCRA, Hazardous Material Rule, TSCA	No

Table 4.1.D Potential Contamination Source List with Regulatory Controls: 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	EXISTING GOVERNMENTAL CONTROLS	CONTROLS ADEQUATE
306	Futura Industries	-Solvents -Oils -Acetone	-Leaks or spills	RCRA, Hazardous Material Rule	No
308	W.R. Grace	-Paints -Solvents -Adhesives	-Leaks or spills	RCRA, Hazardous Material Rule	No
312	Lifetime Products, Metals	-Solvents -Oils -Acetone	-Leaks or spills	RCRA, Hazardous Material Rule	No
314	Paint Sundries, Inc.	-Paints -Mineral spirits	-Leaks or spills	RCRA, Hazardous Material Rule	No
316	Heritage Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
318	Maverik	-Below ground gasoline & diesel storage tanks	-Leaking containers or fuel spills	Regulated by the Division of Environmental Response and Remediation through the Underground Storage Tanks Rule. Tanks that are on the UST list are regularly inspected and often have safeguards such as secondary containment or continuous monitoring UAC R311-211-2	No
320	Charlie's Service & Muffler	-Oils, Fuel -Antifreeze	-Leaking fuels or oil based fluids	EPA requirements on used motor oil storage. UAC R315-15-3	No
322	O. Wayne and EuVola M. Thornock Family Memorial Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No

Table 4.1.D Potential Contamination Source List with Regulatory Controls: 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	EXISTING GOVERNMENTAL CONTROLS	CONTROLS ADEQUATE
324	Train Watch Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	FIFRA	No
326	NAPA Auto Parts	-Oils -Antifreeze -Household cleaning chemicals	-Leaking containers or spills	Hazardous Material Rules	No
328	Utility Trailer Manufacturing Co	-Acetone -Solvents -Acids	-Leaks or spills	RCRA, Hazardous Material Rule	No
330	Wasatch Metal Finishing	-Acetone -Solvents -Acids	-Leaking containers or spills	RCRA, Hazardous Material Rule	No
400	Other wells	-Not properly sealed	-Provides direct conduit to groundwater	Water Well Rule	Yes
410	Union Pacific Railroad Company	-Freight cars containing hazardous materials	-Spills or leaky containers	None	No
420	Davis-Weber Canal Company	-Infiltrating contaminated water	-Waste water discharges, storm water, minerals, fertilizers, chemical spills, etc.	-CWA controls chemical discharges into surface waters. -Regulated by Utah Division of Water Quality through UPDES permits	Yes
430	Hill Air Force Base	-Various stored chemicals	-Spills or leaky containers	RCRA, CERCLA, TSCA	No
500	Small Farming Areas	-Above ground storage tanks -Fertilizer/pesticide/herbicide application	-Leaking fuel or fuel spills -Over application -Fertilizers can contain toxins and contribute nitrates to the ground water.	FIFRA places regulations on manufacturers requiring them to produce safer products and to label proper application rates.	No

Table 4.1.D Potential Contamination Source List with Regulatory Controls: 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	EXISTING GOVERNMENTAL CONTROLS	CONTROLS ADEQUATE
510	Sewer Lines and Septic Tanks	-Leaky sewer lines -Leaky septic tanks	-Sewage leaks containing pathogens, organic matter, and nutrients.	None	No
520	Residential Areas	-Residential Homes	-Fertilizers, herbicides, and household contaminants.	FIFRA - fertilizers/herbicides	No

4.2 Identify and Assess Best Management/Pollution Prevention Practice, Physical and Negligible Quantity Controls R309-600-10(2)(b through d))

The hazards at some PCSs may be controlled through the implementation of best management practices (BMPs), which are those practices employed to minimize the risk of groundwater pollution when there is no feasible means of eliminating or more substantially reducing the risk associated with the hazards at a given PCS. BMPs often include the construction of Physical controls and limiting the amount of hazardous materials at a site to Negligible Quantities. Tables 4.2.A and B indicate briefly how hazards are controlled at each PCS. Each PCS will continue to employ the indicated practice, as the identified practice not only helps protect the groundwater, but is also sound business practice. These controls will be reassessed every 6 years at each required DWSP Plan update.

Table 4.2.A Potential Contamination Source list with identified controls (BMP, Physical, Negligible Quantity): 2250 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	BEST MANAGEMENT PRACTICES / CONTROLS	CONTROLS ADEQUATE
102	Davis School District: West Point Jr. High School	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	A balanced fertilizer is used only once per year. Pesticides consist of 2, 4-D products. These are only used about once every three years.	Yes
104	Davis School District: Lakeside Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	A balanced fertilizer is used only once per year. Pesticides consist of 2, 4-D products. These are only used about once every three years.	Yes
106	West Point City: East Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes
108	Thurgood Excavating Inc.	-Underground Oil Tanks -Underground Fuel Tanks	-Spills or Leaks	The underground oil tank is placed on Concrete with walls to hold at least 50% of the tank volume The fuel tanks are Double walled.	Yes
122	Clinton City: City Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes

Table 4.2.B Potential Contamination Source list with identified controls (BMP, Physical, Negligible Quantity): 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	BEST MANAGEMENT PRACTICES / CONTROLS	CONTROLS ADEQUATE
120	Davis School District: Clinton Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	A balanced fertilizer is used only once per year. Pesticides consist of 2, 4-D products. These are only used about once every three years.	Yes

Table 4.2.B Potential Contamination Source list with identified controls (BMP, Physical, Negligible Quantity): 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	BEST MANAGEMENT PRACTICES / CONTROLS	CONTROLS ADEQUATE
124	Clinton City: Powerline Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes
126	Clinton City: Cemetery	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes
128	Clinton City: Veteran's Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes
134	Maverik	-Below ground gasoline storage tanks	Leaking fuels or fuel spills	All underground tanks are fiberglass lined and have continuous monitoring.	Yes
138	Sterling Quality Tire Factory	-Oils	Leaking oil based fluids	Used oils are stored in 5-gallon drums, which are stored behind a concrete barrier. The oil is burned in the winter and recycled in the summer.	Yes
140	Clearfield City: Steed Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes
142	Clearfield City: Central Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes
144	Clearfield City: Jacobsen Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes
146	Clearfield City: Bicentennial Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes

Table 4.2.B Potential Contamination Source list with identified controls (BMP, Physical, Negligible Quantity): 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	BEST MANAGEMENT PRACTICES / CONTROLS	CONTROLS ADEQUATE
148	Clearfield City: Cemetery	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes
152	Davis School District: Wasatch Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	A balanced fertilizer is used only once per year. Pesticides consist of 2, 4-D products. These are only used about once every three years.	Yes
154	Davis School District: North Davis Jr. High School	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	A balanced fertilizer is used only once per year. Pesticides consist of 2, 4-D products. These are only used about once every three years.	Yes
156	Davis School District: South Clearfield Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	A balanced fertilizer is used only once per year. Pesticides consist of 2, 4-D products. These are only used about once every three years.	Yes
158	Davis School District: Hill Field Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	A balanced fertilizer is used only once per year. Pesticides consist of 2, 4-D products. These are only used about once every three years.	Yes
160	Davis School District: Holt Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	A balanced fertilizer is used only once per year. Pesticides consist of 2, 4-D products. These are only used about once every three years.	Yes
164	Maverik Country Store #179	-Below ground gasoline storage tanks	Leaking fuels or fuel spills	All underground tanks have cathodic protection, overflow containers, and continuous gauging	Yes
166	Utah Power & Light Substation	-Non PCB oil in transformers	Leaking oil	Oil leaking from the transformers would pose more of a fire hazard than a ground water contamination hazard. There are enough management strategies and safety precautions to keep the oil from leaking out.	Yes
170	Walt's Service/ Phillips 66	-Below ground gasoline storage tanks	Leaking fuels or fuel spills	All underground tanks are fiberglass lined, continuous gauging, and leak detectors with sump pumps below the tanks.	Yes

Table 4.2.B Potential Contamination Source list with identified controls (BMP, Physical, Negligible Quantity): 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	BEST MANAGEMENT PRACTICES / CONTROLS	CONTROLS ADEQUATE
174	Dee's Service Center	-Oils -Antifreeze	-Leaking fuels or oil based fluids	Fuels, oils and antifreezes are stored in 55-gallon drums. The oil is burned in a furnace on site. The antifreeze is removed for recycling.	Yes
178	Clearfield Manufacturing	-Diesel fuel -Hydraulic oil	-Leaking fuels or oil based fluids	Diesel fuel is kept in an above ground storage tank with secondary containment. Hydraulic oil is purchased in bulk and kept in 500- gallon container with secondary containment. Used hydraulic oils are stored in a 500-gallon container with secondary containment.	Yes
180	Freeport Cold Storage	-Liquid ammonia -Oil	-Leaking refrigerant or oil based fluids	Liquid ammonia is stored indoors and under pressure. Any release would be in a gaseous form. Oil is stored outdoors in 55-gallon drum tanks on asphalt surface.	Yes
182	Master Muffler & Brake	-Motor oil	-Leaking containers	New and used motor oils are kept in the shop inside concrete containers. Used oil is pumped out.	Yes
188	Horsepower Unlimited Car Care Center	-Oils -Antifreeze	Leaking fuels or oil based fluids	Stored on concrete. Antifreeze is recycled and oil is transported from the site.	Yes
190	Arrant	-Oils -Antifreeze	Leaks or spills	Sealed in metal containers	Yes
192	People's Choice Cars	-Solvents -Oils -Antifreeze	Leaking fuels or oil based fluids	Chemicals are stored on an impermeable surface.	Yes
196	Universal Testing LLC	-Acetone -Solvents	Leaks or spills	Disposed of by the clients.	Yes
198	7-Eleven	-Below ground gasoline storage tanks	Leaking fuels or fuel spills	All underground tanks are fiberglass lined and have continuous monitoring.	Yes
200	Maverik	-Below ground gasoline storage tanks	Leaking fuels or fuel spills	All underground tanks are fiberglass lined and have continuous monitoring.	Yes

Table 4.2.B Potential Contamination Source list with identified controls (BMP, Physical, Negligible Quantity): 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	BEST MANAGEMENT PRACTICES / CONTROLS	CONTROLS ADEQUATE
202	Elmer's Car Care Center	-Oils	Leaking oil based fluids	Oil is stored in double walled tanks behind 4 foot wall on a concrete surface and picked up weekly.	Yes
204	SXOR Motor Sports	-Oils -Solvents -Paints	Leaking fuels or oil based fluids	Stored on concrete in small containers.	Yes
208	Phillip's 66	-Below ground gasoline storage tanks	Leaking fuels or fuel spills	All underground tanks are fiberglass lined and have continuous monitoring.	Yes
210	J R's: Service Center	-Oils -Antifreeze	Leaking fuels or oil based fluids	Stored on concrete in small containers.	Yes
212	Shell	-Below ground gasoline storage tanks	Leaking fuels or fuel spills	All underground tanks are fiberglass lined and have continuous monitoring.	Yes
214	Sherwin-Williams	-Paints -Mineral spirits	-Spills or leaky containers	Chemicals are stored in small containers on impermeable surfaces. Spills are dammed and cleaned.	Yes
216	C&M Tires	-Solvents	-Spills or leaky containers	Chemicals are stored in 25-gallon containers on concrete. Chemicals are recycled regularly.	Yes
218	Conoco	-Below ground gasoline storage tanks	Leaking fuels or fuel spills	All underground tanks are fiberglass lined and have continuous monitoring.	Yes
220	Tesoro Gas	-Below ground gasoline storage tanks	Leaking fuels or fuel spills	All underground tanks are fiberglass lined and have continuous monitoring.	Yes
224	I-15	-Vehicles containing hazardous materials	-Spills or leaky containers	-Emergency Response Teams -Hazardous Material Teams -Environmental Managers	Yes
226	7-11 #26103	-Below ground gasoline storage tanks	Leaking fuels or fuel spills	All underground tanks are fiberglass lined and have continuous monitoring.	Yes

Table 4.2.B Potential Contamination Source list with identified controls (BMP, Physical, Negligible Quantity): 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	BEST MANAGEMENT PRACTICES / CONTROLS	CONTROLS ADEQUATE
228	Sunset Towing & Auto Repair	-Oils	Leaking oil based fluids	Oil is placed inside a concrete containment area.	Yes
230	Tesoro	-Below ground gasoline storage tanks	Leaking fuels or fuel spills	All underground tanks are fiberglass lined and have continuous monitoring.	Yes
232	Sunset City: Central Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes
234	Sunset City: Maintenance Shop	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes
236	Davis School District: Sunset Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	A balanced fertilizer is used only once per year. Pesticides consist of 2, 4-D products. These are only used about once every three years.	Yes
238	Davis School District: Sunset Jr. High School	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	A balanced fertilizer is used only once per year. Pesticides consist of 2, 4-D products. These are only used about once every three years.	Yes
240	Davis School District: Doxey Elementary	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	A balanced fertilizer is used only once per year. Pesticides consist of 2, 4-D products. These are only used about once every three years.	Yes
316	Heritage Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes
318	Maverik	-Below ground gasoline & diesel storage tanks	-Leaking containers or fuel spills	All underground tanks are fiberglass lined and have continuous monitoring.	Yes
320	Charlie's Service & Muffler	-Oils, Fuel -Antifreeze	-Leaking fuels or oil based fluids	Spills are controlled, cleaned up and thrown in the garbage. Oil is placed inside a concrete containment area.	Yes

Table 4.2.B Potential Contamination Source list with identified controls (BMP, Physical, Negligible Quantity): 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	BEST MANAGEMENT PRACTICES / CONTROLS	CONTROLS ADEQUATE
322	O. Wayne and EuVola M. Thornock Family Memorial Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes
324	Train Watch Park	-Fertilizers -Pesticides	-Over applications -Fertilizers can contain toxins and contribute nitrates to the ground water	Chemicals, pesticides, and fertilizers are used in accordance with manufacturer's directions and dosages.	Yes
326	NAPA Auto Parts	-Oils -Antifreeze -Household cleaning chemicals	-Leaking containers or spills	Spills are controlled, cleaned up and thrown in the garbage. Oil is in sealed containers and stored on an impermeable surface.	Yes
328	Utility Trailer Manufacturing Co	-Acetone -Solvents -Acids	-Leaks or spills	Chemicals are stored on an impermeable surface.	Yes
330	Wasatch Metal Finishing	-Acetone -Solvents -Acids	-Leaking containers or spills	Chemicals are stored on an impermeable surface.	Yes
410	Union Pacific Railroad Company	-Freight cars containing hazardous materials	-Spills or leaky containers	-Emergency Response Teams -Hazardous Material Teams -Environmental Managers -SPCC Plans for Petroleum -Corridor Emergency Response for sensitive areas	Yes
430	Hill Air Force Base	-Various stored chemicals	-Spills or leaky containers	-Environmental Quality Team manages, reports, mitigates all environmental incidents on Base, reducing PCSs and their potential impacts in accordance with EPA and UDEQ requirements.	Yes
500	Small Farming Areas	-Above ground storage tanks Fertilizer/pesticide/herbicide application	-Leaking fuel or fuel spills -Over application -Fertilizers can contain toxins and contribute nitrates to the ground water.	None reported	No

Table 4.2.B Potential Contamination Source list with identified controls (BMP, Physical, Negligible Quantity): 1750 West Well

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCES	POTENTIAL HAZARDS	BEST MANAGEMENT PRACTICES / CONTROLS	CONTROLS ADEQUATE
510	Sewer Lines	-Leaky sewer lines	Sewage leaks containing pathogens, organic matter, and nutrients.	-Sewer lines: Routine maintenance on sewer lines every 18 to 24 months. -Sewer lines: Video record sewer lines every 5 years for leaks, repair as needed	Yes
520	Residential Areas	-Residential Homes	Fertilizers, herbicides, and household contaminants.	None reported	No

End Of Section 4.0

5.0 **Management Program for Existing Potential Contamination Source – R309-600-11**

5.1 Land Management Strategies

All land management strategies for all preexisting PCSs are presented in Table 5.1.A.

Table 5.1.A Management Strategies for UNCONTROLLED Existing Potential Contamination Sources

ID NO.	BUSINESS NAME OR FACILITY	POTENTIAL CONTAMINATION SOURCE SUMMARY	STATUS (*)	MANAGEMENT STRATEGY (**)
500	Small Farming Areas	-Above ground storage tanks -Fertilizer/pesticide/herbicide application	Not Adequately Controlled	A, B
520	Residential Areas	-Residential Homes	Not Adequately Controlled	B

* Adequately Controlled or Not Adequately Controlled as stated in Tables 4.2.A and 4.2.B.
** See Table 5.1.B.

Table 5.1.B Legend of Management Strategies

MANAGEMENT STRATEGY	DESCRIPTION
A	Mail a copy of the Utah Department of Environmental Quality fact sheet[1] that applies to the specific hazard at the identified PCS and request specific best management practices.
B	Use the City's Consumer Confidence Report (CCR) to inform the public about the DWSP plan and pertinent information as deemed necessary by West Point City. Add a Drinking Water Source Protection page to the City's website. Said page should contain explanatory language for the page and include links to at least DEQ fact sheets, the City's Drinking Water Source Protection Ordinance and a link to a State, Federal, International or non-governmental organization website that describes the importance of source protection. Change the standard verbiage in the CCR so that readers are encouraged to visit the above-mentioned source protection page. Ensure that the full text of the City's Drinking Water Source Protection Ordinance is on-line.

The two management strategies listed in Table 5.1.B are educational in nature. The City believes that when the public is informed about the Drinking Water Source Protection Plan and its purpose, the public is more likely to take individual actions to help safeguard its drinking water against contamination.

[1] Included in Appendix F.

Management Strategy "A" discusses the request that best management practices be used at each individual PCS to safeguard against contamination of the groundwater. It is requested that the best management practices address the following (where applicable):

- Chemicals/pesticides/fertilizers be used in accordance with manufacturer's directions and dosages,
- A State approved facility/business be used for waste disposal,
- The businesses have written policy prohibiting improper disposal of toxic chemicals and hazardous wastes,
- All containers be stored on impervious surfaces,
- Chemicals indoors be stored on shelves over impervious floor,
- The businesses provide secondary spill containment for each tank over 55 gallons,
- The employer and employees use and handle chemicals in accordance with MSDS instructions, and
- Notification of the West Point City in the event of a leak or spill.

The Drinking Water Source Protection page mentioned as Management Strategy "B" will include items such as:

- What a DWSP Plan is;
- The reason for a DWSP zone being established;
- The location of the City's DWSP zones;
- The need for the cooperation of all involved to protect groundwater;
- A link to the State's DEQ Fact sheets regarding typical PCSs and a request for applicable entities to follow best management practices.

Previous versions of this Plan included steps by the City to review and monitor reports of Leaky Underground Storage Tanks and Environmental Incidents. However, these strategies have been determined to be fruitless, since there is no corresponding action that the City can take to mitigate potential impacts on groundwater quality from an entity or event being included on said lists.

5.2 Best Management Practices

The objective of land management strategies, safeguarding groundwater against potential contamination, can be better achieved through the implementation of best management practices and pollution prevention measures. Some of the City's PCSs have shown that they currently follow or take measures to prevent groundwater contamination. Many of these current practices were listed in Tables 4.2.A and B.

West Point City is aware of the need for continued best management practices and pollution prevention measures. Some of the identified best management practices will be included on the City's Drinking Water Source Protection web page. One such best management practice is for above ground fuel tanks to have an impermeable catch basin or liner placed underneath the tank. Another best management practice is to safeguard non-municipal wells against potential contamination by keeping livestock and chemical applications at least 100' away from wells that have not been properly abandoned.

End Of Section 5.0

6.0 The Management Program for Future Potential Contamination Sources – R309-600-12

West Point City wants to safeguard its groundwater against contamination from future PCSs as well as existing PCSs. Almost all of West Point's DWSP areas are located outside of West Point City's limits. Thus, West Point is limited in regulatory control (e.g. passing zoning ordinances to regulate the location of future PCSs) for future PCSs. However, in a coordinated effort by cities in Davis County, a Source Protection ordinance has been adopted in West Point City and similar ordinances have also been adopted in at least Sunset, Clearfield and Clinton Cities, which are most of the cities into which West Point's source protection zones extend. The ordinances address source protection zones, irrespective of the Public Water System to which the source supplies water. In short, the ordinances establish the following:

- Define the purpose of the ordinance,
- Provide definitions used in the ordinance,
- Establish the four well head protection zones, and
- Define permitted uses within these zones.

Within the West Point City limits, the DWSP zones for the West Point's public water wells are almost completely zoned for residential development. Outside the city limits, West Point must rely on and will petition adjacent Cities to enforce their wellhead protection ordinances. Table 6.0, following, lists the desired results and required actions for managing future PCSs inside the DWSP zones.

Table 6.0 Management Strategies for Future Potential Contamination Sources

ZONE	DESIRED RESULTS	REQUIRED ACTIONS FOR WEST POINT CITY
1	• Prohibition of future PCSs	• Enforce the City's Drinking Water Source Protection Ordinance.
2	• Future pollution sources will be prohibited unless the pollution source agrees to implement design or operating standards which prevent discharges to ground water. • Management program must be implemented to control or prohibit future PCSs consistent with the provision of the DWSP Rule and in accordance with the City's authority and jurisdiction.	• Enforce the City's Drinking Water Source Protection Ordinance and encourage neighboring Cities to do the same. See Appendix G. • Solicit Syracuse City to enact and enforce a drinking water source protection ordinance that manages PCS location within all public water supply source protection zones identified on the Davis County GIS. See Appendix G.
3,4	• Management program must be enforced to control or prohibit future PCSs that are consistent with the provision of the DWSP Rule and in accordance with the City's authority and jurisdiction.	• Enforce the City's Drinking Water Source Protection Ordinance and encourage neighboring Cities to do the same. See Appendix G. • Solicit Syracuse City to enact and enforce a drinking water source protection ordinance that manages PCS location within all public water supply source protection zones identified on the Davis County GIS. See Appendix G.

Also, in order to control future PCSs, West Point City will implement the following process:

1. Contact each PCS as it locates within the 2250 & 1750 West Wells' protection zones,
2. Add said PCS to the inventory of potential contamination sources,
3. Identify and assess its controls, and
4. Plan and implement land management strategies, if it is not adequately controlled.

End of Section 6.0

7.0 The Implementation Schedule – R309-600-7(1)(e)

In accordance with R309-600-7(1)(e) of the Drinking Water Source Protection Rule, an implementation schedule was developed for the land management strategies proposed by West Point City. The management strategies for each of the existing PCSs are shown in Tables 5.1.A and B. Refer to Table 6.0 for management strategies proposed to control future potential contamination sources. Table 7.0, below, shows the implementation schedule for the management strategies from the aforementioned tables.

Table 7.0 Management Strategies Implementation Schedule

Management Strategy	Description	Implementation Date	Frequency
A	Mail a copy of the Utah Department of Environmental Quality fact sheet that applies to the specific hazard at the identified PCS and request specific best management practices.	Commence 2021, See Appendix F.	At least once every 6 years, or as new PCS is identified
B	Use the City's Consumer Confidence Report (CCR) to inform the public about the DWSP plan and pertinent information as deemed necessary by West Point City.	Initiated 2006	Annually in City's Consumer Confidence Reports.
	Add the Drinking Water Source Protection page to the City's website. Said page should contain explanatory language for the page and include links to at least DEQ fact sheets, the City's Drinking Water Source Protection Ordinance and a link to a State, Federal, International or non-governmental organization website that describes the importance of source protection.	September, 2022; See Appendix H.	Once, with future modifications as may be determined by the City
	Change the standard verbiage in the CCR so that readers are encouraged to visit the above-mentioned source protection page.	Modify 2021, Implement 2022; See Appendix K.	Once, with future modifications as may be determined by the City
	Ensure that the full text of the City's Drinking Water Source Protection Ordinance is on-line.	September 2022. See Appendix J.	Once, with modifications as may be determined by the City

End of Section 7.0

8.0 **The Resource Evaluation – 309-600-7(1)(f)**

To determine if West Point City can properly carry out the DWSP Plan, financial and other resources were evaluated. The City's resource evaluation is shown in Table 8.0. In short, the City feels that its resources are adequate to implement the DWSP Plan.

Table 8.0 Resource Evaluation

ITEM	ANNUAL RESOURCES REQUIRED FOR DWSP PLAN	COMMENTS
FINANCIAL	$3,500	Cost of mailings, technical and staff support.
TECHNICAL SUPPORT	40 hours	Provided by City Engineer or consultant
STAFF SUPPORT	40 hours	Adequate
PUBLIC EDUCATION	City Website	Web consultant needed to format and post outline included as Appendix H.

End of Section 8.0

9.0 **The Recordkeeping Section – R309-600-7(1)(g)**

West Point City will update this section as required with copies of ordinances, codes, permits, memoranda of understanding, public education programs, training session agendas, minutes of meetings, diary entries, memoranda for the file, etc. to document implementation and changes in land management as it pertains to ground water source protection.

September 23, 2021 *– sent letter to Syracuse requesting that they enact and enforce a source protection ordinance.*

September 23, 2021 *– started a 6-year cycle of sending a notice letter to identified PCSs in the Source Protection Zones along with applicable fact sheet, requesting use of BMPs. See copy of letter and list of entities to whom letter was mailed in September, 2021 in Appendix F. Mailing frequency is estimated to be frequent enough to be a good reminder to PCSs without being so frequent that the notices become "white noise" or too burdensome for the City.*

2006 *– Start to include the language in the City's annual Consumer Confidence Report (CCR) advertising of the availability of this DWSP to Citizens. Note that the language should be modified to encourage readers to visit the City's Drinking Water Source Protection page. See Appendix K.*

2006 *- City's Source Protection Ordinance adopted. Current (as of ordinance 08-17-2021B) ordinance included in Appendix J. Note that the text online is incomplete and should be posted in its entirety by September 2022.*

10.0 **The Contingency Plan – R309-600-14**

West Point City's Contingency Plan focuses on the identification of problems and their remedies in the event of a water shortage or contamination incident that may affect the water system's ability to provide safe drinking water to the public. The City's Contingency Plan is composed of the following parts:

- Emergency Response Plans,
- Rationing Plans,
- Remediation Plans, and
- Source Development Plans.

10.1 Emergency Response Plans

Emergency response planning focuses on short-term solutions to problems the City's public water system may encounter because of accidents or natural disasters. West Point City currently has a basic emergency planning and response guide compatible with the State, County, and adjacent communities. This plan, in conjunction with the Emergency Response Guidebook produced by the Division of Drinking Water, was used to establish the following: 1) Lines of Authority and Responsibilities, 2) Classification of the Emergency or Disaster, and 3) Facility Damage Assessments.

Lines of Authority and Responsibilities

The Public Works Director (Paul) of West Point City is the Emergency Management Coordinator (EMC) and will coordinate emergency operations plans and procedures in the City. The EMC will coordinate with the City's Department Heads, the County Fire Marshal, and the State Emergency Management Office.

The central point of coordination for all emergency response actions will be in West Point City's Emergency Operation Center (EOC). During an emergency, involved parties will coordinate all response actions with the EOC.

Authority positions with current personnel and responsibilities related to the City's public drinking water system include:

1. Public Works Director, Paul Rochell. As Public Works Director Mr. Rochell would coordinate all emergency actions, water system personnel and equipment within the drinking water system. This will include coordination with law enforcement, fire fighting, medical personnel, and any other requests for aid, volunteer efforts or mutual assistance. As the district manager, he will coordinate, supervise and schedule personnel, equipment and materials to facilitate the repair or replacement of critical drinking water system facilities that have been identified and prioritized by the City Engineer and/or himself.

2. City Manager, Kyle Laws. Mr. Laws will be responsible for releasing information to the media, issuing emergency information bulletins to the public, and acting as liaison between the drinking water system and the general public in answering questions and addressing concerns.

3. City Engineer, Boyd Davis. Mr. Davis will coordinate the inspection of all drinking water system physical facilities to determine the degree of damage to the facility and in coordination with the Public Manager, prioritize the repair, replacement, or abandonment of any system physical facilities.

4. City Manager, Kyle Laws. Mr. Laws will ensure that at least one City employee will be at the City office during emergency levels 2 through 4 to take calls from the public and help coordinate remediation efforts as needed.

Classification of the Emergency Disaster

Classifying the magnitude of the emergency or disaster will help to prioritize remediation response. The classification system can also aid in developing training exercises for the drinking water system personnel. The classification of the emergency or disaster will be the decision of the Public Works Director, which will be communicated by radio and/or telephone to the other personnel of the drinking water system. The classifications were adopted form the State's Division of Drinking Water Rule and are as follows:

LEVEL I – NORMAL (ROUTINE): Personnel and equipment presently on duty can handle system problems. The City office will maintain normal business hours.

LEVEL II – ALERT (MINOR EMERGENCY): Personnel and equipment presently on duty can handle system problems, but may require off duty or additional personnel to be put on alert, be re-routed to other than their normal working areas, or work additional shifts. The City office will be staffed throughout the minor emergency.

LEVEL III – MAJOR EMERGENCY: Problems somewhat beyond the capabilities of the drinking water system personnel and equipment, and may require a "Declaration of Emergency" to authorize shortcut procedures. Requires employees to work additional shifts and may need additional assistance of personnel and equipment, either by mutual aid or by private contracts. The EOC is activated and manned. The City office will be staffed throughout the major emergency.

LEVEL IV – DISASTER: Problems clearly and immediately beyond the capability of the drinking water system. Recovery time will exceed one week, costs will be great, large amounts of assistance personnel and equipment by mutual aid or private contracts will be required, extended shifts will be needed. A "Declaration of Emergency" is required; the EOC is activated and manned. The City office will be staffed throughout the disaster.

Facility Damage Assessments

The City Engineer will determine the preliminary assessment priorities. The physical status of all physical facilities will be assessed via color-coding. Examples of facility damage assessment forms for West Point City are included in Appendix I. After the preliminary damage assessment, the City Engineer and Public Works Director will prioritize the repair or replacement of damaged drinking water facilities. The Division of Drinking Water suggests that the rehabilitation of the drinking water system be prioritized based on the following:

1. The public water system's design;
2. Medical/emergency care requirements;
3. Drinking water and sanitation needs of the public;
4. Firefighting requirements;
5. How much good drinking water is remaining in the system reservoirs; and
6. How to transport the water to where it is needed the most.

10.2 Rationing Plans

Rationing plans establish a course of action to be implemented when water shortages occur. In the event of a water shortage, the City currently handles the situation by sending out notices to all of the citizens and schools. This notice will either be sent out with the monthly water bill, or as a special mailer, depending upon the severity and the circumstance of the ration. The notices detail the following items: (1) permissible water use, (2) days to water, (3) time of day to water, and (4) a warning if the mentioned items are not followed. The City's water department controls the water use in parks and can therefore direct rationing of water to these facilities.

The City plans to adopt a water source protection agreement with neighboring cities. Part of this agreement will allow the City, or the city in which a water user resides, to issue fines to facilities that do not comply with the mentioned rationing notices. If the facility continues in noncompliance with the mentioned rationing notices, then the City will shut off the facility's water.

10.3 Remediation Plans

In the event that the City's drinking water becomes contaminated because of an accident or a natural disaster, the City, with the aid of the City Engineer, will present the Best Available Technology (BAT) to the Mayor and City council for approval. Risk assessment, economics, and BATs will be considered in determining the remedial actions of the City. Examples of two BATs are (1) Chlorination for microbiological contamination and (2) Air stripping for removal of volatile organic compounds.

10.4 Source Development Plans

Developing new water supply sources is essential for the increasing number of service connections in the City. In evaluating source development, the City will use guidelines suggested by the Division of Drinking Water. These guidelines include the following:

1. Identification of all undeveloped sources of water,

2. Determination of the probable production of each source and the percentage of the current and projected needs that could be supplied by each potential source,

3. Steps required to obtain ownership and water rights for each potential new source,

4. Determination of the approximate protection zones around each potential new well or spring,

5. Inventory of all PCSs within each approximate protection zone which may affect the quality of the drinking water,

6. Identification of the quality of each potential drinking water sources,

7. Estimating when each new drinking water source will need to be introduced into the system to meet projected supply requirements,

8. Determining the financial resources that may be required for each drinking water source development project, and

9. Submitting a Preliminary Evaluation Report to DDW, prior to, or concurrent with engineering plans and specifications before construction begins on any new ground-water source of drinking water.

End of Section 10.0

11.0 **Public Notification – R309-600-15**

West Point City has included the information required by this Section 11.0 in its Consumer Confidence Reports (CCR), and will continue to do so.

11.1 Public Notification Plan

Creating a public notification plan is the first step in helping the general public get informed on what practices are harmful to drinking water, and what practices are acceptable. The public notification plan for the 2250 & 1750 West Wells will be directed to businesses and residences within the source protection zones in West Point City.

A fluorescent sticker for residents and businesses receiving hard copy bills will be added to bills, upon which a notice will be placed regarding source protection. Fluorescent text boxes will be added to digital bills, within which a notice will be placed regarding source protection. These notices will invite recipients to visit the City's Drinking Water Source Protection web page, where readers will be informed regarding drinking water source protection.

The notifications will be sent out annually with the October billing.

11.2 Public Notification

The public notification stickers will refer recipients to the City's Drinking Water Source protection page. Refer to Appendix H for details regarding the Drinking Water Source Protection page. The stickers will contain the following or similar statement:

> Residents and business owners, West Point City has developed a Drinking Water Source Protection Plan to help protect the quality of our drinking water. Please visit <webpage address> to learn more about source water protection and how you can help!

11.3 Source Protection Plan Availability

The website will include a statement that the complete Drinking Water Source Protection Plan for the City's sources are available for review at the City Hall during normal business hours.

End of Section 11.0

Monitoring Waivers

West Point City is not eligible for Use or Susceptibility Monitoring Waivers as described in R309-600-16(3) and (4), respectively. Monitoring Waivers based on test results being consistently and reliably below MCLs are requested as outlined in R309-205-5 and 6.

End of DWSPP

APPENDIX A: Report by Bryce Montgomery

July 20, 1995

Mr. N. Scott Nelson, P. E.
Gilson, McKellar, McWhorter & Associates
Consulting Engineers
949 East 12400 South, Suite 100
Draper, Utah 84020

RE: Preliminary Evaluation and Source Protection Delineation Report for Hooper City Well No. 4 (third existing), NE/4 SE/4 Sec. 30, T 5 N, R 2 W, SLB&M; Water System No. 29006, Hooper Improvement District 1800 North well

Dear Scott:

In response to the letter from Mark E. Jensen, Utah Division of Drinking Water, dated June 5, 1995, regarding the above referenced, I submit the following.

Although the Hooper No. 4 Well (third existing) is within the same hydrologic setting, within close proximity of the protection delineation zones of the other Hooper City wells, and essentially within the same general wellfield, I am submitting herewith a separate report for this well, in compliance with the requirement listed in the Division of Drinking Water letter.

The Hooper Well No. 4 is completed to produce from the Delta Aquifer extending over a total depth reach of 324 feet, which includes interbeds of clay that were not offset with screened sections of the well casing. Of this 324 feet of total completed section, 224 feet of it was reported to consist of clay, according to the driller's log, resulting in a net production thickness of 100 feet. The well is artesian with a reported head of 12 feet above land surface. Using the derived specific capacity of 11.8 gpm/foot of drawdown, and the graph of Meyers as reported in Bentall, 1963, and an estimated storage coefficient of 0.00004 as per the reporting of Clark and others, 1990, a transmissivity of 4700 feet squared/day was initially derived for this well area. However, in a follow-up conversation with Mark Jensen, he preferred that the transmissivity estimated by Clark and others, 1990, be used. Therefore, from their estimated transmissivity map of "layer 3", which is mainly the Delta Aquifer, I have obtained the transmissivity of 20,000 ft squared/day, which is four times my original estimate from the actual well pumping test, but will be used in the subsequent computer calculations. This appears to me to be high in view of other available data, but by using this considerably higher quantity, it will cause very conservative, longer-extending delineation zones to be calculated. Conversely, it narrows the maximum width of Zone 3.

The subject well was drilled in 1990-91 at a point S. 210 ft. and W. 675 ft. from the E/4 Cor. Sec. 30, T 5 N, R 2 W, SLB&M, at an

approximate elevation of 4242 feet. The driller's log reports that it is cased with 14-;inch diameter casing from two feet above ground level to a depth of 200 feet, with 12-inch casing from 200-710 feet, and 8-inch diameter casing from 710-973 feet. Houston well screen of 20 slots/inch was placed from 642-652 feet, 664-676 feet, 30 slots/inch from 676-686, 40 slots/inch from 686-700, 20 slots/inch from 724-734 feet, 810-820 feet, 932-946 feet, 946-956 feet, and 30 slots/inch from 950-966 feet, opposite reported sand zones (with gravel 655-700 feet) of the Delta Aquifer. A neat cement seal was placed around the well casing from ground level to a depth of 100 feet and certified on March 14, 1991.

A pumping test was conducted on the subject well March 22-24, 1991, at a maximum rate of 2250 gpm, resulting in 190 feet of drawdown after 40 hours, from an original static level of 12 feet above ground level. This results in a specific capacity of 11.8 gpm/foot of drawdown.

The Hooper Well No. 4 is located within the outer, west edge of the Weber Delta, which is a thick sequence of gravelly and sandy alluvium deposited mainly within ancient Lake Bonneville, in a large fan-like configuration. The primary source of these materials is from erosion of the Wasatch Mountains to the east and conveyed westward by the Weber River. Secondary and coalescing with the Weber Delta are similar deposits to the north, brought out of Ogden Canyon. These deposits have accumulated over thousands of years within a major depression (graben) formed from downward movement along the Wasatch Fault at the mountain front. This has been in combination with apparent downward movement east of Little Mountain (located to the west) along an extensive fault trending southeastward from there and through the site of Hooper Hot Springs in Sec. 27, T 5 N, R 3 W.

As this basin of sedimentation continued to subside over time with successive movements along the stated faults, there were fluctuations in the level of ancient Lake Bonneville, and braiding, channel filling and shifting of the position of the Weber River, its distributaries and total deposits coming into the area. These accumulated sediments now total several thousand feet in thickness. From mapping of the gravity field over the area and surrounding region Cook and others, 1989, the deepest part of the Great Salt Lake Valley of the East Shore area, located between Little Mountain and Fremont and Antelope Islands, and the Wasatch Mountain Front, trends north-northwest a few miles east of the subject well, as shown on the attached map.

As the sediments dropped-out of the Weber River and its distributaries, the coarser-grained materials came-out first, closer to the mountain front, and finer grained materials were successively deposited farther west into the basin. The subject well is situated within the sandy transition area of this deposition, within the Delta Aquifer section.

Feth and others, 1966, have referred to the two prominent sequences of coarser-grained alluvial materials throughout the Weber Delta area as the Sunset Aquifer, generally less than 400 feet deep and usually encountered at depths between 200-400 feet, and the Delta Aquifer, generally encountered at a depth near 500 feet and extending as deep as 1300 feet, from drilling done to this time. Clark and others, 1990, refer generally to these two aquifers as "layers 2 and 3", respectively.

The attached map shows potentiometric contour lines of the dynamic groundwater surface within the Delta Aquifer. The configuration of these contours are indicative of both the direction of groundwater flow and the location of the more pervious gravel and sand sections, within the aquifer system.

Recharge to the overall groundwater system of the Weber Delta area is principally from the Weber River and its tributaries, but also directly from fractured bedrock where it makes direct contact with the coarser-grained alluvium near the mountain front, and along the Wasatch Fault Zone. Here, water originating from precipitation on the lofty Wasatch Mountains, in part infiltrates into either pervious, fractured bedrock and or pervious gravels to become ground water. The more pervious gravel channels, exposed within the present Weber River channel and present within the subsurface, are the most effective and fastest transmission routes for the ground water.

Using the potentiometric contours, the groundwater gradient within the aquifers, to the east and up-gradient of the well is determined. From the subject well and the first 4300 feet eastward and upgradient, the groundwater gradient is 0.013, but for the next 1000 feet eastward and upgradient to a gentle groundwater mound, it is 0.0033. Downgradient and westward from the well for 9900 feet, the groundwater gradient within the Delta Aquifer is 0.007. An average of 0.008 is used in the subsequent computer calculations.

Delta Aquifer transmissivity derivations from pumping tests in the more pervious trends, as reported by Feth and others,. 1966, and by Clark and others, 1990, range between 3,342-23,500 ft squared/day, with a coefficient of storage ranging from 0.00079 to 0.00012. However, beyond these pumping test results, Clark and others have estimated transmissivity values ranging from 2,500 to 100,000 ft squared/day for their "layer 3" (Delta Aquifer equivalent), and have presented the estimated quantities in the form of contour lines on a map in their Figure 47. At the subject well site they estimate the transmissivity quantity of 20,000 ft squared/day.

In response to the requirement that the protection zones must be recalculated using an appropriate hydrogeologic method for this hydrogeologic setting which can account for the influence from other pumping wells, I have made further study of the groundwater modeling by Clark and others, 1990, and have utilized the

Environmental Protection Agency (EPA), 1992, Version 2.1, "A Modular Semi-Analytical Model for the Delineation of Wellhead Protection Areas (WHPA)," selection of General Particle Tracking module (GPTRAC), Semi-Analytical Option, to recalculate Zones 2 and 3, 250-days and 15-years travel-time, respectively. Zone 1 is an automatic 100-feet radius around the well.

The use of this model has included the computer and paper-file search in the State Engineer's Office, of all wells within the natural recharge, contribution area to the Hooper Well No. 4, which have an approved diversion rate of 0.5 cubic feet/second and higher. These pumping wells were entered onto my gridded working map, and inputed into the computer calculations. More than 50 well were so identified and of them 43 with their data were utilized.

The results of the modeling indicate an influence from the pumping of these wells mainly upon the outer extremities of Zone 3, in the direction of recharge, to the east. How the actual rate of pumping the wells of the area will be varied over various pumping periods with time, will adjust the configuration of the delineation zones, compared to the maximum rate with continuous pumping, used in the modeling.

The WHPA-GPTRAC computer modeling which I have conducted included the following input parameters:

Study area grid coordinates, shown on the attached hydrogeologic and delineation zone map, extending from the center of the west edges of Sections 6 and 7, T 4 N, R 2 W; Sections 7, 18, 19, 30 and 31, T 5 N, R 2 W; eastward to centers of Sections 3 and 10, T 4 N, R 1 W; Sections 10, 15, 22, 27 and 34, T 5 N, R 1 W; and from the south edges of Sections 7, 8, 9 and 10, T 4 N, R 1 W; Sections 7,8, 9, 10, 11, 12, T 4 N, R 2 W; northerly to the north edges of Sections 7, 8, 9 and 10, T 5 N, R 1 W; and Sections 7, 8, 9, 10, 11 and 12, T 5 N, R 2 W: (X is easterly and Y is northerly)

Minimum X: 0 feet
Maximum X: 50000 feet
Minimum Y: 0 feet
Maximum Y: 35000 feet

Largest allowable step length or distance for water particle tracking along pathlines of groundwater velocity, in a given time or iteration: 400 feet (approximately 1/100 of the longest coordinate axis)

Transmissivity of the aquifer; taken from the transmissivity map for "layer 3," Figure 47 of Clark and others, 1990, for the Delta Aquifer: 20,000 ft squared/day

Regional hydraulic gradient, derived from groundwater

potentiometric contouring: 0.008, averaged upgradient from the well

Angle of ambient groundwater flow averaged, starting 0 at due east and rotating counter-clockwise to 360 degrees; taken from a combination of hydrogeology and potentiometric surface mapping: 180 degrees

Aquifer porosity, estimated: 25 percent

Aquifer saturated thickness; estimated from Hooper Well No. 4 driller's log: 100 feet

Confining bed thickness, from well log: 642 feet

Confining layer hydraulic conductivity, estimated from Clark and others, 1990: 0.0001 ft/day

Boundary conditions used: none

Number of forward-tracked pathlines used: none on selected plot

Number of reverse-tracked pathlines used: 20

Time period for which GPTRAC was executed, for two separate runs: one at 250 days (Zone 2) and one for 15 years (5475 days)(Zone 3)

Time value for time-related capture zones: same as for time period for which GPTRAC was executed: 250 days and 5475 days, respectively

Pumping Wells Location Coordinates:

Well No.	X, ft	Y, ft	Pumping rate ft cubed/day	Well radius ft
(Hooper #4) 1	4020	18200	433155 (2250gpm)	0.42
2	25950	31900	224640	0.83
3	32130	32500	43200	0.42
4	32500	32730	43200	0.42
5	31880	30750	48384	0.42
6	34370	31700	510240	0.5
7	37950	32870	432000	0.83
8	40900	31600	233280	0.58
9	32100	27500	354240	0.42
10	19550	21200	432000	0.5
11	28350	27900	475200	0.67
12	27400	23350	172800	0.39
13	31800	29350	371520	0.42
14	32100	27500	354240	0.42
15	23050	29050	262656	0.67
16	32650	25300	864000	0.67
17	37000	28200	207360	0.5

Well No.	X, ft	Y, ft	Pumping rate	Well radius
18	36700	23300	345600	0.83
19	40920	28650	285120	1.0
20	41850	26550	345600	0.83
21	41750	21300	864000	0.83
22	1900	18750	43200	0.2
23	1600	13900	67392	0.13
24	5600	15850	43200	0.17
25	9950	10700	172800	0.42
26	14150	10550	88992	0.5
27	16600	10500	259200	0.67
28	23330	18350	259200	0.3
29	25800	18300	234096	0.5
30	29330	15900	380160	0.75
31	31550	16350	380160	0.75
32	26150	13200	864000	0.83
33	36450	19000	172800	0.83
34	33900	11150	432000	0.83
35	43800	11550	311040	0.83
36	47200	11650	380160	0.75
37	44450	15200	864000	0.83
38	20350	20150	328320	0.67
39	15600	1200	86400	0.25
40	25800	6650	69120	0.42
41	27400	2800	224640	0.58
42	29200	5200	43200	0.42
43	29950	7900	85536	0.42

Attached to this report are the computer plots showing the 250-day (Zone 2) and 15-year (5475 days)(Zone 3) capture zones, at a scale of 1 inch= 1 mile. These boundaries have been transferred to the attached, revised hydrogeologic map consisting of four sheets, at a scale of 1 inch= 2000 feet.

It can be readily observed that by inputing the higher transmissivity into the computer calculations, the width of Zone 3, except for its upper end, has been reduced from my initial submission. However, this has caused the length of Zone 3 to be increased by more than twice the initial calculation.

The length and width of Zone 2 has been increased by about four times over my initial submittal.

The potential sources of contamination are essentially the same as those stated heretofore for Zone 2, although this should be confirmed from a further field examination.

I understand that the expanded, prioritized inventory for the enlarged delineation zones, of potential contamination sources will be prepared by your office, along with the Management and Contingency Plans. Since Zone 3 has been enlarged, any additional sources of potential contamination within Zone 3 will need to be identified. However, the management program to control or prohibit future potential contamination sources does

not extend beyond Zone 2, as per paragraph R309-113-12(1)(a) of the Drinking Water Rule.

It should be kept in mind that the estimated transmissivity input to the computer calculations is more than four times that which I originally projected from the specific capacity on the available pumping test of the Hooper No. 4 Well, and has appreciably influenced the extent and shape of the delineated protection zones. Had the initially determined transmissivity been used in the computer calculations, as shown on a separate run, still taking into account the affect of the stated 43 pumping wells of the region, under their maximum and continuous pumping impact, Zone 2 would have remained the same size and shape as that calculated initially, but Zone 3 would have been spread-out wider, reduced in up-gradient length, compared to the initial calculations.

Irregardless of the above submitted to meet the requirements of a Preliminary Evaluation Report, as commented by Mark Jensen in his stated letter, before water from the well can be introduced into the water system, Hooper City is further required to have a constant-rate yield and drawdown pumping test conducted on the well, as per [R309-106-5(3)(c)], to more accurately determine the aquifer transmissivity, to refine the protection zones, and to prepare the ultimate Drinking Water Source Protection Plan, with this newly acquired data, as per [R309-113-13(3)].

Respectfully submitted,

S. Bryce Montgomery
Professional Geologist
3512 South 100 East
Bountiful, Utah 84010 Telephone 801-295-8592

Attachments: References and Well Log

Computer plots of capture Zones 2 and 3, from EPA, A Modular Semi-Analytical Model for the Delineation of Wellhead Protection areas, Version 2.1, 1992, Office of Ground-water Protection

Revised hydrogeologic map with protection zones

cc: Mark E. Jensen, Utah Division of Drinking Water

REFERENCES FOR HOOPER CITY NO. 4 WELL STUDY

S. B. Montgomery
July 20, 1995

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B. C. _____ T. B. _____
Sheet _____

REPORT OF WELL DRILLER
STATE OF UTAH

Application No. a 15418
Claim No. 35-4250
Coordinate No. _____

L STATEMENT: Report of well driller is hereby made and filed with the State Engineer, in accordance with the laws of Utah. ort shall be filed with the State Engineer within 30 days after the completion or abandonment of the well. Failure to file such nstitutes a misdemeanor.)

LL OWNER:
per Water Improvement District
55 W. 5500 S. Hooper, Ut. 84315

CATION OF WELL:
VIS _____ Ground Water Basin (leave blank)
0 feet. East 700 feet from E¼ Corner
West
30 T. 5 N R. 2 E SLBM (strike
W USM
at needed)

TURE OF WORK (check): New Well ☒ Well ☐ Deepening ☐ Repair ☐ Abandon ☐
ent, describe material and procedure: _____

TURE OF USE (check):
Industrial ☐ Municipal ☒ Stockwater ☐
Mining ☐ Other ☐ Test Well ☐

PE OF CONSTRUCTION (check):
☒ Dug ☐ Jetted ☐
☐ Driven ☐ Bored ☐

SING SCHEDULE: Threaded ☐ Welded ☐
Diam. from +2' feet to 200' feet Gage std ☒
Diam. from 200 feet to 710 feet Gage std
Diam. from 710 feet to 973 feet Gage std
Reject ☐ Used ☐

RFORATIONS: Perforated? Yes ☐ No ☒
forator used _____
rations _____ inches by _____ inches
rforations from _____ feet to _____ feet
rforations from _____ feet to _____ feet
rforations from _____ feet to _____ feet
rforations from _____ feet to _____ feet
rforations from _____ feet to _____ feet

EENS: Well screen installed? Yes ☒ No ☐
r's Name Houston Well Screen
-Flow Model No. T-304ss
Slot size _____ Set from _____ ft. to _____
Slot size see back Set from _____ ft. to _____

STRUCTION:
avel packed? Yes ☐ No ☒ Size of gravel: _____
d from _____ feet to _____ feet
e seal provided? Yes ☒ No ☐
depth? 100' feet
d in seal: neet cement
ta contain unusable water? Yes ☒ No ☐
e: Surface Depth of strata 10'
aling strata off: _____
casing

casing used? Yes ☒ No ☐
ased in place? Yes ☐ No ☒ pulled

ATER LEVELS:
_____ feet below land surface Date _____
12 feet above land surface Date 3/20/91

(11) FLOWING WELL:
Controlled by (check) Valve ☐
Cap ☐ Plug ☐ No Control ☐
Does well leak around casing? Yes ☐
No ☐

(12) WELL TESTS: Drawdown is the distance in feet the water level is lowered below static level.
Was a pump test made? Yes ☒ No ☐ If so, by whom? Harvy Sales & Se
Field: 2250 gal./min. with 190 feet drawdown after 40 hours
" " " " " "
" " " " " "
Bailer test _____ gal./min. with _____ feet drawdown after _____ hours
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? No ☒ Yes ☐

(13) WELL LOG: Diameter of well 14" 12" 8" inches
Depth drilled 976' feet. Depth of completed well 973' feet.

NOTE: Place an "X" in the space or combination of spaces needed to designate the material or combination of materials encountered in each depth interval. Under REMARKS make any desirable notes as to occurrence of water and the color, size, nature, etc., of material encountered in each depth interval. Use additional sheet if needed.

DEPTH From	DEPTH To	Clay	Silt	Sand	Gravel	Cobbles	Boulders	Hardpan	Conglomerate	Bedrock	Other	REMARKS
0	8	x										
8	55			x								
55	180	x										
180	190			x								
190	202	x										
202	208			x								
208	230	x										
230	270			x								
270	320	x										
320	340			x								
340	396	x										
396	412			x								
412	420	x										
420	440			x								
440	520	x										
520	550			x								
550	588	x										
588	594			x								
594	640	x										
640	655	x										
655	700			x	x	x						
700	720	x										
720	724			x								
724	764	x										
764	774			x								
774	800	x										
800	820			x								
820	930	x										
930	970			x								
970	976	x										

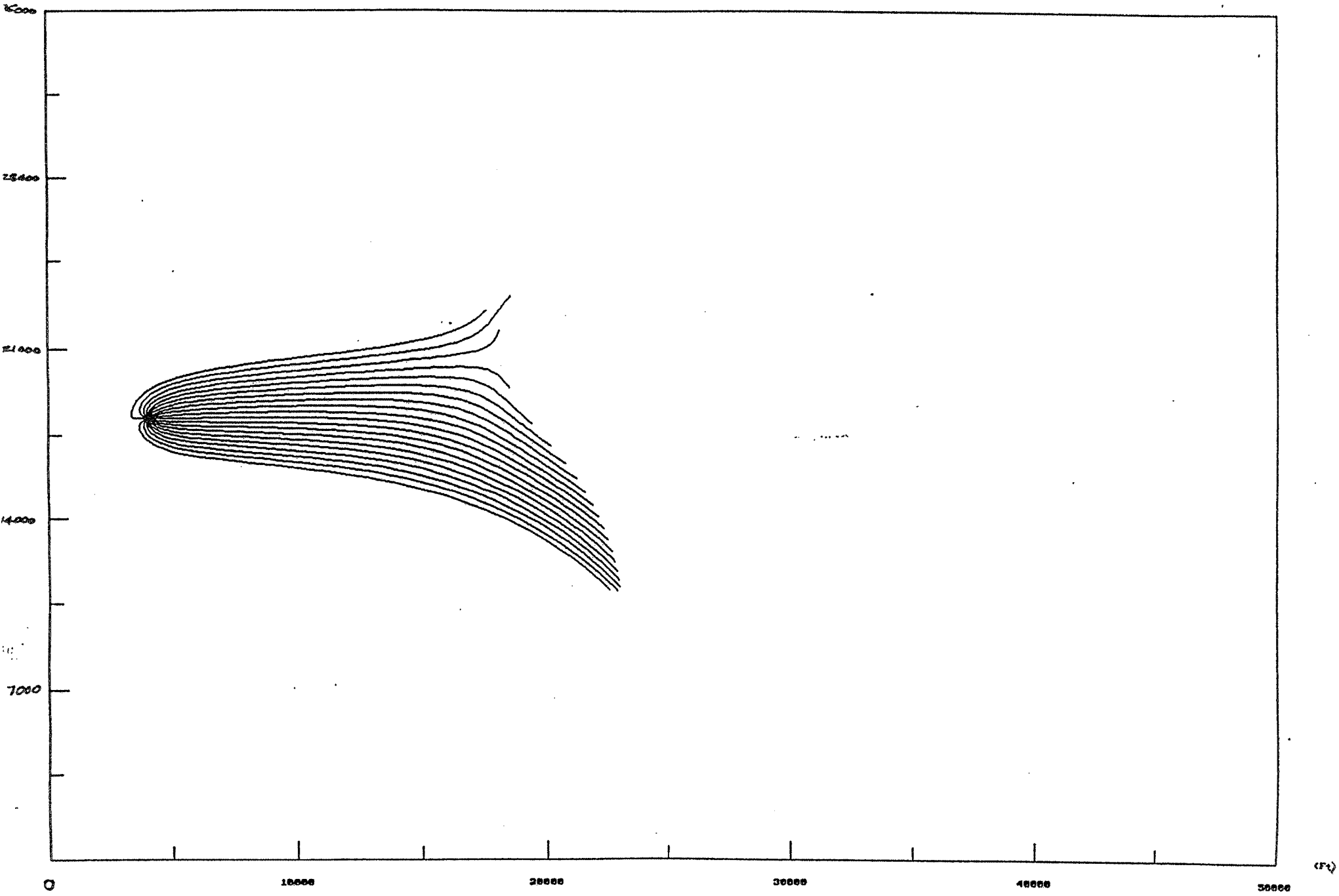
Work started Sept. 24 19 90 Completed March 20 19 91

(14) PUMP:
Manufacturer's Name _____
Type: _____ H. P. _____
Depth to pump or bowls _____ feet

Well Driller's Statement:
This well was drilled under my supervision, and this report is true to the best of my knowledge and belief.
Name Unzicker & Wells Drilling
(Person, firm, or corporation) (Type or print)
Address Box 159 Hanksville, Ut. 84734
(Signed) [signature] (Well Driller)
License No. 398 Date April 19 19 91

RECEIVED
APR 22 1991
WATER RIGHTS
SALT LAKE

USE OTHER SIDE FOR ADDITIONAL REMARKS



Computer Plot with EPA-WHPA, GPTRAC, Semi-analytical Option, Hooper City Well No. 4

For Zone 3 (15-years) Using ReverseTracking, Ambient Flow Direction of 180 degrees

APPENDIX B: Well Driller's Logs – 2250 and 1750 West Wells

2250 West

Water Right 31-3205

click here to view documents

```
 ***WR#: 31 3205 has been PRINTED!!
                          (WARNING: Water Rights makes NO claims as to the accuracy of this data.) RUN DATE: 01
WRNUM: 31-3205     APPLICATION/CLAIM NO.: U8149       CERT. NO.:
-----------------------------------------------------------------------------------------------------------
OWNERSHIP**************************************************************************************************
-----------------------------------------------------------------------------------------------------------
NAME: West Point, Town of                                   OWNER MISC:
ADDR:
CITY: Clearfield                STATE: UT  ZIP: 84015       INTEREST:
LAND OWNED BY APPLICANT?
-----------------------------------------------------------------------------------------------------------
DATES, ETC.************************************************************************************************
-----------------------------------------------------------------------------------------------------------
FILING:     03/18/1936|PRIORITY:  07/25/1934|ADV BEGAN:   /  /     |ADV ENDED:    /  /    |NEWSPAPER:
PROTST END:  /  /     |PROTESTED: [   ]     |APPR/REJ:  [         ]|APPR/REJ:     /  /    |PROOF DUE:   /  /    |EXT
ELEC/PROOF:[         ]|ELEC/PROOF:  /  /    |CERT/WUC:    /  /     |LAP, ETC:     /  /    |PROV LETR:   /  /    |REN
PD Book No.     Type of Right: UGWC  Status:      Source of Info: UGWC  Map:          Date Verified: 10/14/1992
-----------------------------------------------------------------------------------------------------------
LOCATION OF WATER RIGHT************************************************************************************
-----------------------------------------------------------------------------------------------------------
FLOW: 1.027 cfs   461 gpm                          SOURCE: Underground Water Well
COUNTY: Davis         COMMON DESCRIPTION:

POINT OF DIVERSION -- UNDERGROUND:
(1) N   81 ft E 4092 ft from SW cor, Sec 33, T  5N, R  2W, SLBM DIAM: 12 ins. DEPTH:  808 to     ft. YEAR DRILLE
        Comment:
-----------------------------------------------------------------------------------------------------------
USES OF WATER RIGHT****************************************************************************************
-----------------------------------------------------------------------------------------------------------
CLAIMS USED FOR PURPOSE DESCRIBED: 3205
     Referenced To:             Claims Groups:                    Type of Reference -- Claims:    Purpose:
...........................................................................................................
  ###MUNICIPAL: Town of West Point                                                                PERIOD OF
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII E N D   O F   D A T A IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO E N D   O F   D A T A OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
```

31-3303

2250 W

PAGE.................. (Leave Blank)

Report No. 108
Filed Feb. 17, 1936
Rec. By Counter
Rec. $1.00 Fee 7847

1011 2-21-36.

MCB CC-MB 7-27-41
indexed MB 7-29-41

Report of Well and Tunnel Driller

STATE OF UTAH

(Separate report shall be filed for each well or tunnel)

GENERAL INFORMATION:

Report of well or tunnel driller is hereby made and filed with the State Engineer, together with a filing fee of $1.00, submitted in accordance with Sections 100-3-22 and 100-2-14, Revised Statutes of Utah 1933, as amended by Session Laws of 1935. (This report shall be filed with the State Engineer within 30 days after the completion or abandonment of well or tunnel. Failure to file such report constitutes a misdemeanor.)

1. Name and address of person, ~~company or corporation boring or~~ drilling well ~~or tunnel~~ (Strike words not needed)
H. W. Stoddard 3150 Porter Ave., Ogden Utah

2. Name and address of owner of well ~~or tunnel~~ (Strike words not needed)
West Point Ward Drouth Relief Well, West, Utah.

3. Source of supply is in Davis County;
.... (Leave blank) drainage area; .... (Leave blank) artesian basin

4. The number of ~~approved application to appropriate~~ Claim water is C-8149

5. Location of well ~~or tunnel~~ is situated at a point
1 [illegible] the SW corner of Sec. 33,
[illegible]
(Describe by course and distance with reference to U. S. Government Survey Corner — copy description from well owners' approved application)

6. Date on which work on well ~~or tunnel~~ was begun Nov. 17, 1934. (Strike words not needed)

7. Date on which work on well ~~or tunnel~~ was completed or ~~abandoned~~ May 31, 1935. (Strike words not needed)

8. Maximum quantity of water ~~flowing~~, pumped ~~or dipped~~ on completion of well ~~or tunnel~~ in (Strike words not needed)
sec. ft. XXXXXXX; or in gals. per minute 461; Date June, 1935

DETAIL OF COLLECTING WORKS:

9. WELL: It is a drilled, ~~dug, flowing or~~ pump well. Temperature of water 58 ° F. (Strike words not needed)

(a) Total depth of well is 808' ft. below ground surface.

(b) Pressure in lbs. per sq. inch at ground surface if flowing well ....

(c) If pump well, give depth from ground surface to water surface before pumping 46'; during pumping ....

(d) Size and kind of casing 12" pipe to 302' 8" pipe to 737' 6" to 808' (If only partially cased, give details)

(e) Depth to water bearing stratum 785' (If more than one stratum, give depth to each)

(f) If casing is perforated, give depth from ground surface to perforations
786' to 803'

(g) Log of well 0to 2' soil 2to 12' clay 12' to 20' sand 20' to 60' clay 60' to 72' sand 72 to 130' clay 130' to 143' sand 143' to 165clay 165'to 177'sand &pea grl. 177'to 215'clay 215'to 233'sand 233'to 265'clay 265'to 280'sand 280'to 320'clay 320'to 337'sand 337'to 370'clay 370'to 396'sand 396'to 418'clay 418'to 440'sand 440'to 475'clay 475'to 484'sand&pea gravel 484'to 495'clay 495'to510'sand &pea gravel 510'to 533'clay 533'to 546'sand 546'to 564'clay 564'to 570'sand 570'to 587'clay 587'to 620'sand 620'to 642'clay 642'to 655 sand 655'to 675'clay 675'to 685'sand & pea gravel 685'to 705'clay 705'to 727'sand&grv. 727'to753'clay 753'to 770'sand&grv. 770' to785' clay 785'to 808' gravel

(h) Well was equipped with cap, valve, or .... to control flow. (Strike words not needed)

(Over)

1750 West

Water Right 31-1828

click here to view documents

```
 ***WR#: 31 1828 has been PRINTED!!
                              (WARNING: Water Rights makes NO claims as to the accuracy of this data.) RUN DATE: 01
WRNUM: 31-1828      APPLICATION/CLAIM NO.: A31322      CERT. NO.:
------------------------------------------------------------------------------------------------------------------
OWNERSHIP*********************************************************************************************************
------------------------------------------------------------------------------------------------------------------
NAME: West Point City Corporation                               OWNER MISC:
ADDR: 3016 West 300 North
CITY: West Point                    STATE: UT  ZIP: 84015       INTEREST: 100%
LAND OWNED BY APPLICANT?
------------------------------------------------------------------------------------------------------------------
DATES, ETC.*******************************************************************************************************
------------------------------------------------------------------------------------------------------------------
FILING:    08/18/1959|PRIORITY:  08/18/1959|ADV BEGAN:   /  /    |ADV ENDED:   /  /    |NEWSPAPER:
PROTST END:  /  /    |PROTESTED: [   ]     |APPR/REJ:  [Approved]|APPR/REJ:  04/18/1960|PROOF DUE: 08/31/1978|EX
ELEC/PROOF:[Election]|ELEC/PROOF:07/05/1978|CERT/WUC:  08/14/1989|LAP, ETC:    /  /    |PROV LETR:   /  /    |REM
PD Book No.     Type of Right: APPL  Status:       Source of Info: WUC   Map: 2dd     Date Verified: 08/17/1989
------------------------------------------------------------------------------------------------------------------
LOCATION OF WATER RIGHT*******************************************************************************************
------------------------------------------------------------------------------------------------------------------
FLOW: 3.0 cfs 1346 gpm                                 SOURCE: Underground Water Well
COUNTY: Davis        COMMON DESCRIPTION:

POINT OF DIVERSION -- UNDERGROUND:
(1) N   38 ft W 4008 ft from SE cor, Sec 34, T  5N, R  2W, SLBM DIAM: 16 ins. DEPTH:  865 to     ft. YEAR DRILLE
          Comment:
------------------------------------------------------------------------------------------------------------------
USES OF WATER RIGHT***********************************************************************************************
------------------------------------------------------------------------------------------------------------------
CLAIMS USED FOR PURPOSE DESCRIBED: 1828
     Referenced To:            Claims Groups:                        Type of Reference -- Claims:    Purpose:
..................................................................................................................
  ###MUNICIPAL: West Point City
3.0 cfs. Limited to 1500 ac.ft.                                                                          PERIOD OF
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII E N D   O F   D A T A IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                       XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO E N D   O F   D A T A OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
```

1750 West

Form 113 2M 4-60

Examined 12/29/60 [illegible]

Recorded: B. [illegible] T. B. ACT

Photostats Sheet [illegible] 1961

[redacted] 1-26-61 AJC

REPORT OF WELL DRILLER

STATE OF UTAH

Application No. 31322

Claim No.

Coordinate No. (B-5-2)34 ccd

GENERAL STATEMENT: Report of well driller is hereby made and filed with the State Engineer, in accordance with the laws of Utah. (This report shall be filed with the State Engineer within 30 days after the completion or abandonment of the well. Failure to file such reports constitutes a misdemeanor.)

(1) WELL OWNER:

Name West Point Town

Address West Point Utah

(2) LOCATION OF WELL:

County Davis Ground Water Basin Weber (leave blank)

North 38 feet, West 4008 feet from S.E. Corner of Section 34, T 5 N, R 2 W SLBM (strike out words not needed)

(3) NATURE OF WORK (check):

New Well ☒ Replacement Well ☐ Deepening ☐ Repair ☐ Abandon ☐

If abandonment, describe material and procedure:

(4) NATURE OF USE (check):

Domestic ☐ Industrial ☐ Municipal ☒ Stockwater ☐ Irrigation ☐ Mining ☐ Other ☐ Test Well ☐

(5) TYPE OF CONSTRUCTION (check):

Rotary ☒ Dug ☐ Jetted ☐ Cable ☐ Driven ☐ Bored ☐

(6) CASING SCHEDULE:

Threaded ☐ Welded ☒

14" O.D. Diam. from 0 feet to 267 feet Gage 3/8 .375

12" I.D. Diam. from 267 feet to 852 feet Gage 3/8 .375

" Diam. from feet to feet Gage

New ☒ Reject ☐ Used ☐

(7) PERFORATIONS:

Perforated? Yes ☒ No ☐

Type of perforator used Mills

Size of perforations 1/2 inches by 2 1/2 inches

12 perforations from 802 feet to 840 feet

perforations from feet to feet

perforations from feet to feet

perforations from feet to feet

perforations from feet to feet

(8) SCREENS:

Well screen installed? Yes ☐ No ☐

Manufacturer's Name

Type Model No.

Diam. Slot size Set from ft. to

Diam. Slot size Set from ft. to

(9) CONSTRUCTION:

Was well gravel packed? Yes ☐ No ☒ Size of gravel:

Gravel placed from feet to feet

Was a surface seal provided? Yes ☐ No ☐

To what depth? feet

Material used in seal: Mud

Did any strata contain unusable water? Yes ☐ No ☒

Type of water: Depth of strata

Method of sealing strata off:

Was surface casing used? Yes ☐ No ☒

Was it cemented in place? Yes ☐ No ☒ Mud

(10) WATER LEVELS:

Static level 80 feet below land surface Date Nov 12/1960

Artesian pressure feet above land surface Date

LOG RECEIVED:

(11) FLOWING WELL:

Controlled by (check) Valve ☐ Cap ☐ Plug ☐ No Control ☐

Does well leak around casing? Yes ☐ No ☐

(12) WELL TESTS:

Drawdown is the distance in feet the water level is lowered below static level.

Was a pump test made? Yes ☒ No ☐ If so, by whom? Wesley Stoddard

Yield: 1400 gal./min. with ~~125~~ 45 feet drawdown after 24 hours

Bailer test gal./min. with feet drawdown after hours

Artesian flow g.p.m. Date

Temperature of water 60 Was a chemical analysis made? No ☒ Yes ☐

(13) WELL LOG:

Diameter of well 16" inches

Depth drilled feet. Depth of completed well 865' feet.

NOTE: Place an "X" in the space or combination of spaces needed to designate the material or combination of materials encountered in each depth interval. Under REMARKS make any desirable notes as to occurrence of water and the color, size, nature, etc., of material encountered in each depth interval. Use additional sheet if needed.

Depth From	Depth To	Clay	Silt	Sand	Gravel	Cobbles	Boulders	Hardpan	Conglomerate	Bedrock	Other	REMARKS
0	2											Top Soil
2	8	X										
8	35			X								
35	106	X										Sand & Clay St.
106	273	X		X								
273	338			X	X							Sand & Gravel
338	486	X										
486	643	X		X								Clay & Sand St.
643	665			X								
665	724	X										
724	793	X		X								Clay & Sand St.
793	843				X	X	X					Good Gravel
843	865	X										

Work started July 28, 1960 Completed Nov. 12, 1960

(14) PUMP: Test Pump

Manufacturer's Name

Type: H. P.

Depth to pump or bowles feet

Well Driller's Statement:

This well was drilled under my supervision, and this report is true to the best of my knowledge and belief.

Name H. Wesley Stoddard (Person, firm, or corporation) (Type or print)

Address 242 W. 1550 N. Sunset Utah

(Signed) H. Wesley Stoddard (Well Driller)

License No. 62 Date Nov. 15, 1960

USE OTHER SIDE FOR ADDITIONAL REMARKS

APPENDIX C: Pump Test Results and Conductivity Calculations

Date: **December 18, 1997** Performed by: **West Point City**

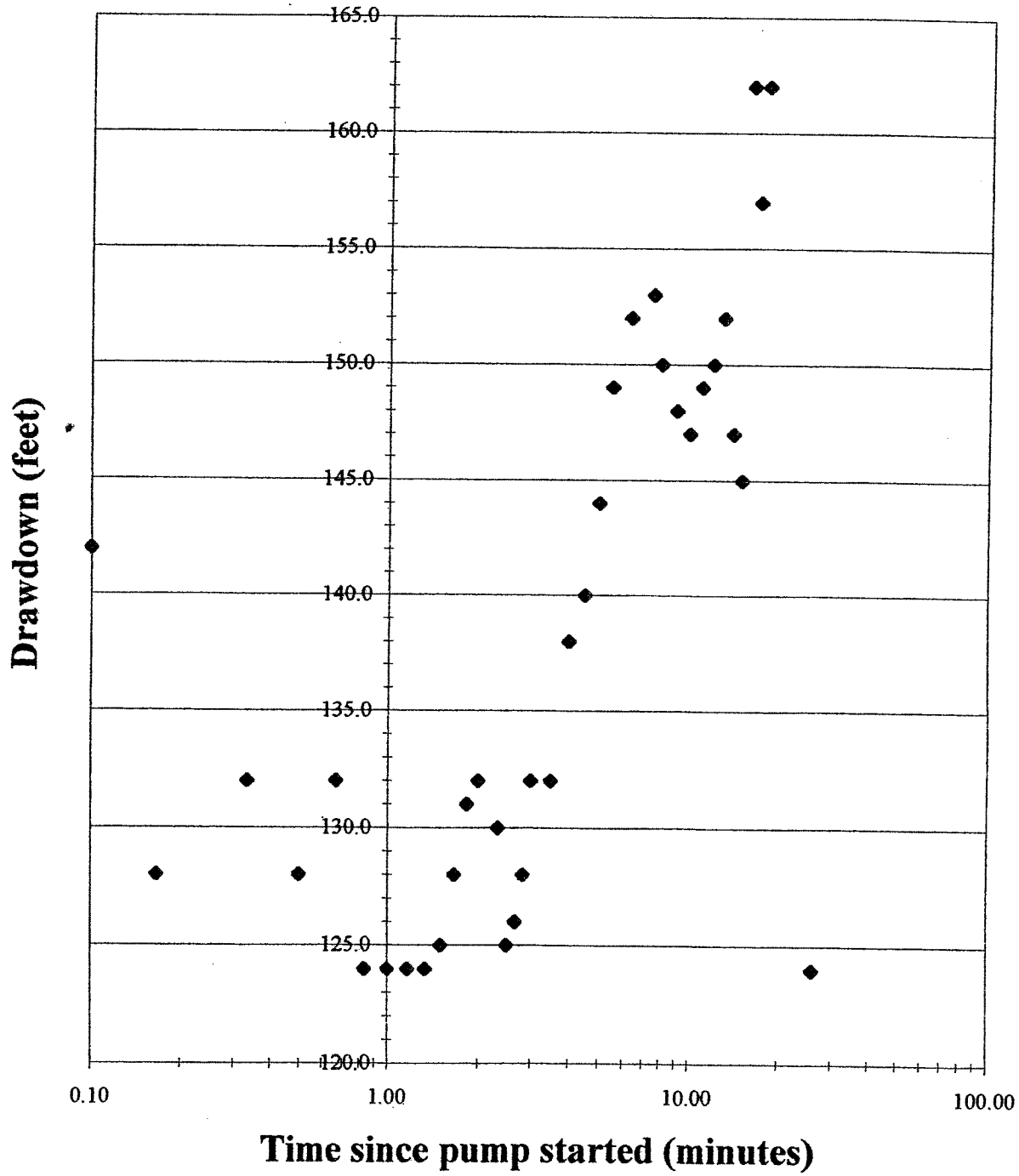
Well No.: **# 3 (1750 West Well)**

Static Water Level: 142 feet below ground surface Average Discharge: **1,400 gpm**

Type of Test: **Drawdown**

TIME SINCE PUMP STARTED, T (MIN)	WATER LEVEL MEASUREMENT (FT)	DRAWDOWN (FT)
0	142	0.0
0:00:10	142	-14.0
0:00:20	128	-10.0
0:00:30	132	-14.0
0:00:40	128	-10.0
0:00:50	132	-18.0
0:01:00	124	-18.0
0:01:10	124	-18.0
0:01:20	124	-18.0
0:01:30	125	-17.0
0:01:40	128	-14.0
0:01:50	131	-11.0
0:02:00	132	-10.0
0:02:20	130	-12.0
0:02:30	125	-17.0
0:02:40	126	-16.0
0:02:50	128	-14.0
0:03:00	132	-10.0
0:03:30	132	-10.0
0:04:00	138	-4.0
0:04:30	140	-2.0
0:05:00	144	2.0
0:05:30	149	7.0
0:06:30	152	10.0
0:07:30	153	11.0
0:08:00	150	8.0
0:09:00	148	6.0
0:10:00	147	5.0
0:11:00	149	7.0
0:12:00	150	8.0
0:13:00	152	10.0
0:14:00	147	5.0
0:15:00	145	3.0
0:16:00	162	20.0
0:17:00	157	15.0
0:18:00	162	20.0

1750 West Well
Drawdown Test (Dec. 18, 1997)
(Flow rate 1400 gpm)



TRANSMISSIVITY CALCULATIONS
1750 West Well, West Point City

Drawdown Test -- Cooper-Jacob Method

$T = (2.303*Q)/(4*pi*\Delta S)$ ΔS is the change in drawdown over one log cycle.

at = 10 minutes s = 124 feet
at = 100 minutes s = 147 feet

ΔS = 23 feet

Q_avg = 1400 gpm *from Groundwater conditions in the East Shore area pg. 36
Q_avg = 269500 ft/min

T = 2147.4 sq.ft/day

Use Transmissivity = 2,147.4 sq.ft/day

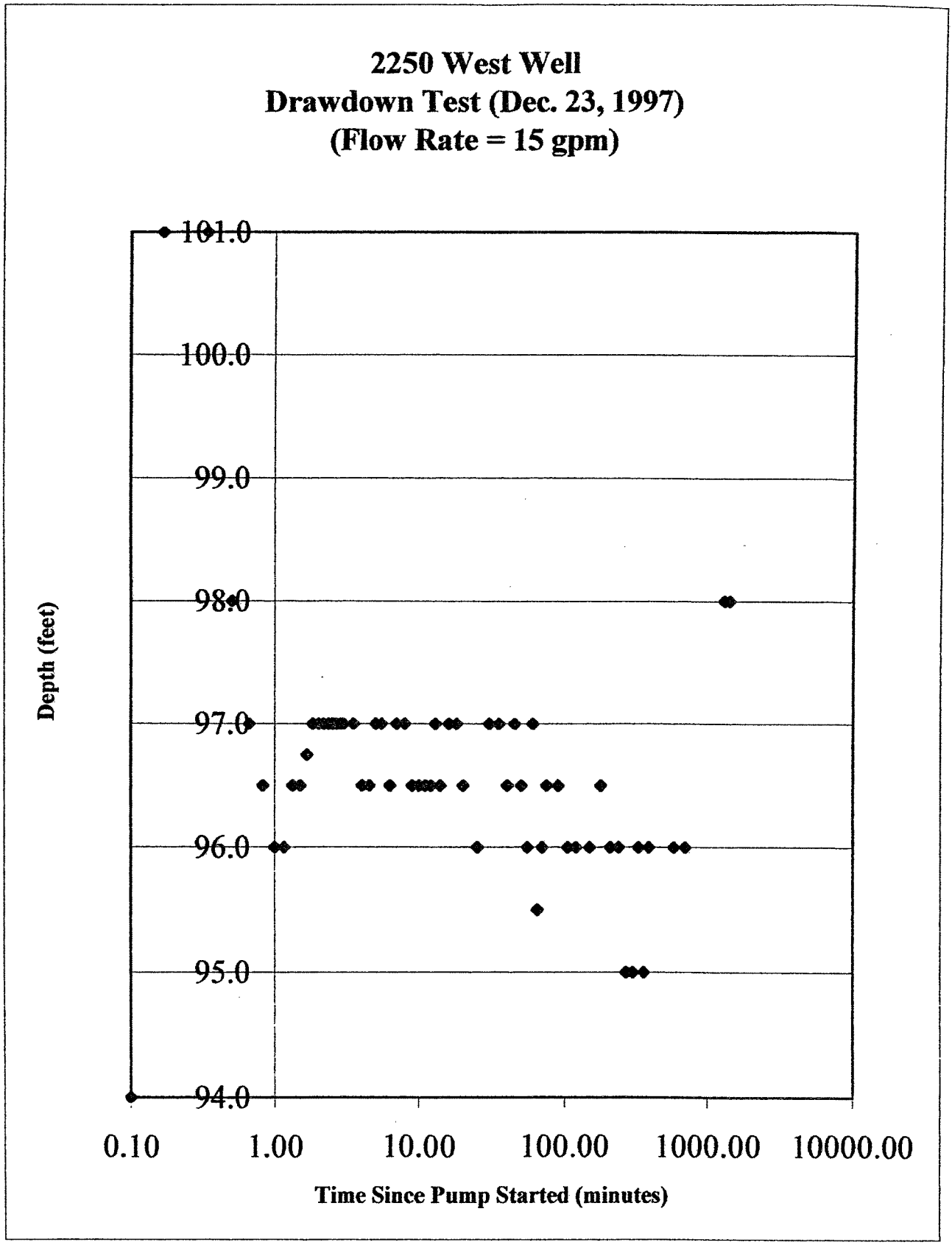
Date: **Dec 23, 1997** Performed by: **West Point City**

Well No.: **#1 (2250 West Well)**

Static Water Level: 94 feet below ground surface Average Discharge: **14.55 gpm**

Type of Test: **Drawdown** **Recovery**

TIME SINCE PUMP STARTED, T (MIN)	WATER LEVEL MEASUREMENT (FT)	DRAWDOWN (FT)		TIME SINCE PUMP STOPPED, T' (MIN)	WATER LEVEL MEASUREMENT (FT)	DRAWDOWN (FT)
0:00:00	94.0	0.0		0:00:00	98.0	0.0
0:00:10	101.0	7.0		0:00:10	96.0	-2.0
0:00:20	101.0	7.0		0:00:20	94.0	-4.0
0:00:30	98.0	4.0		0:00:30	93.5	-4.5
0:00:40	97.0	3.0		0:00:40	93.0	-5.0
0:00:50	96.5	2.5		0:00:50	93.0	-5.0
0:01:00	96.0	2.0		0:01:00	92.8	-5.2
0:01:10	96.0	2.0		0:01:10	93.3	-4.7
0:01:20	96.5	2.5		0:01:20	93.3	-4.7
0:01:30	96.5	2.5		0:01:30	93.0	-5.0
0:01:40	96.8	2.8		0:01:40	93.0	-5.0
0:01:50	97.0	3.0		0:01:50	93.3	-4.7
0:02:00	97.0	3.0		0:02:00	93.5	-4.5
0:02:10	97.0	3.0		0:02:10	93.3	-4.7
0:02:20	97.0	3.0		0:02:20	93.3	-4.7
0:02:30	97.0	3.0				
0:02:40	97.0	3.0				
0:02:50	97.0	3.0				
0:03:00	97.0	3.0				
0:03:30	97.0	3.0				
0:04:00	96.5	2.5				
0:04:30	96.5	2.5				
0:05:00	97.0	3.0				
0:05:30	97.0	3.0				
0:06:00	96.5	2.5				
0:07:00	97.0	3.0				
0:08:00	97.0	3.0				
0:09:00	96.5	2.5				
0:10:00	96.5	2.5				
0:11:00	96.5	2.5				
0:12:00	96.5	2.5				
0:13:00	97.0	3.0				
0:14:00	96.5	2.5				
0:16:00	97.0	3.0				
0:18:00	97.0	3.0				
0:20:00	96.5	2.5				
0:25:00	96.0	2.0				
0:30:00	97.0	3.0				
0:35:00	97.0	3.0				
0:40:00	96.5	2.5				
0:45:00	97.0	3.0				
0:50:00	96.5	2.5				
0:55:00	96.0	2.0				
1:00:00	97.0	3.0				
1:05:00	95.5	1.5				
1:10:00	96.0	2.0				
1:15:00	96.5	2.5				
1:30:00	96.5	2.5				
1:45:00	96.0	2.0				
2:00:00	96.0	2.0				


2250 West Well
Drawdown Test (Dec. 23, 1997)
(Flow Rate = 15 gpm)
Depth (feet)
101.0
100.0
99.0
98.0
97.0
96.0
95.0
94.0
0.10
1.00
10.00
100.00
1000.00
10000.00
Time Since Pump Started (minutes)

KNOWN CONDUCTIVITIES

Conductivity of Neighboring Wells

Local Well	Pump Tested Transmissivity (ft^2/day)	Aquifer Thickness (ft)	Computed Conductivity (ft/day)
Clearfield #2	61590	200	308
Freeport South	14300	29	493
Freeport North	14900	42	355
700 South	61590	160	385
Clinton #1	23500	70	336
Hooper #3	8900	100	89

Average Conductivity = 328

West Point Well	Computed Conductivity (ft/day)	Aquifer Thickness (ft)	Average Conductivity (ft^2/day)
1750 West	12448	38	328
2250 West	7207	22	328
3000 West	30137	92	328

APPENDIX D: Figures Referenced by Others

Figures Referenced from Hydrogeology of recharge areas and water quality of the principal aquifers along the Wasatch Front and adjacent areas, Utah by Anderson and others.

Figure 7 Approximate location of the Sunset and Delta aquifers, generalized direction of ground-water flow, and potentiometric surface of the East Shore aquifer system, excluding the Sunset aquifer, Utah.

Figure 8 Estimated transmissivity of the deeper part of the East Shore aquifer system including the unconfined aquifer near the Wasatch Range, Utah.

Figure 9 Computer-simulated ground water flow between model layers 2 and 3, East Shore area, Utah, 1985.

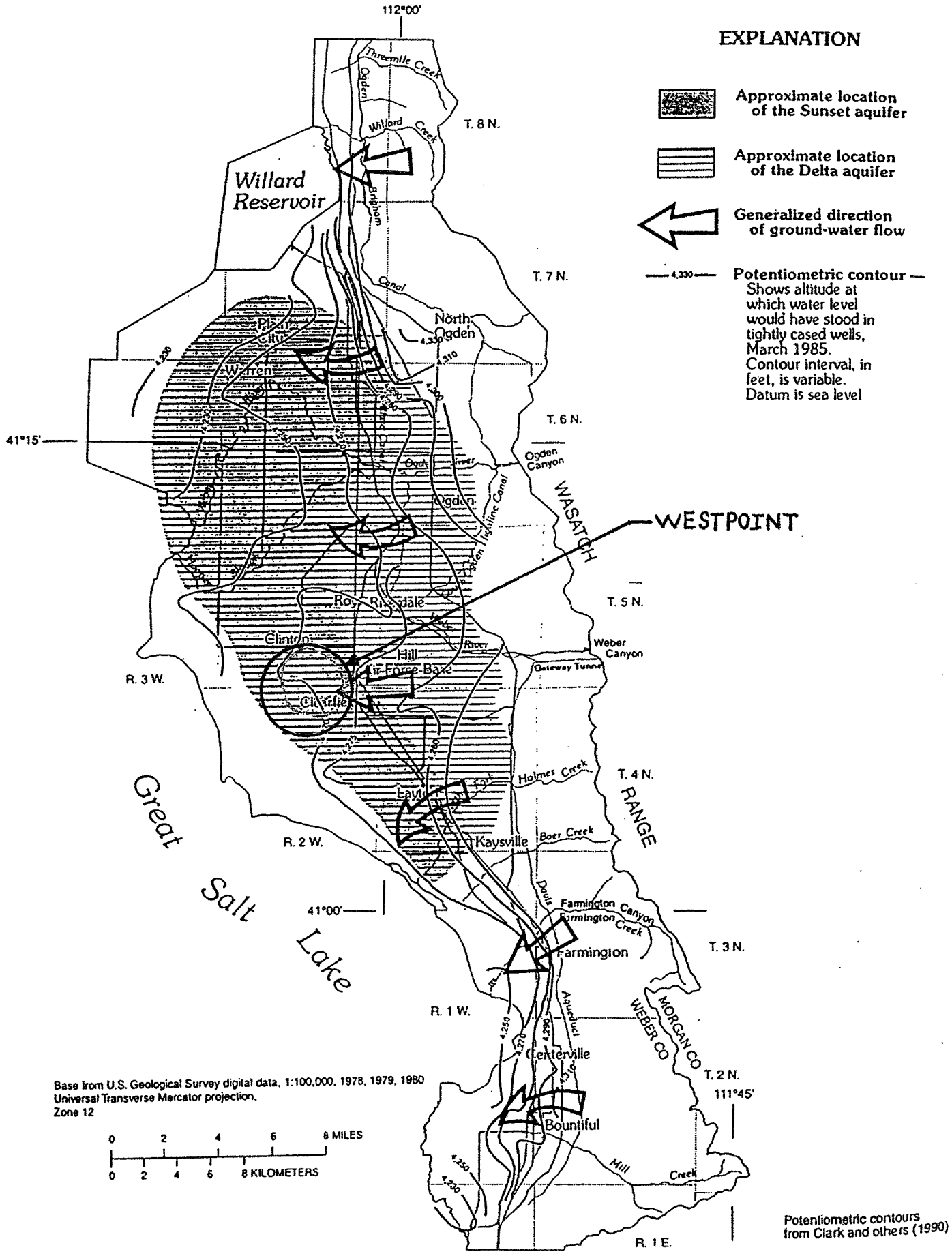


Figure 7. Approximate location of the Sunsel and Delta aquifers, generalized direction of ground-water flow, and potentiometric surface of the East Shore aquifer system, excluding the Sunset aquifer, Utah.

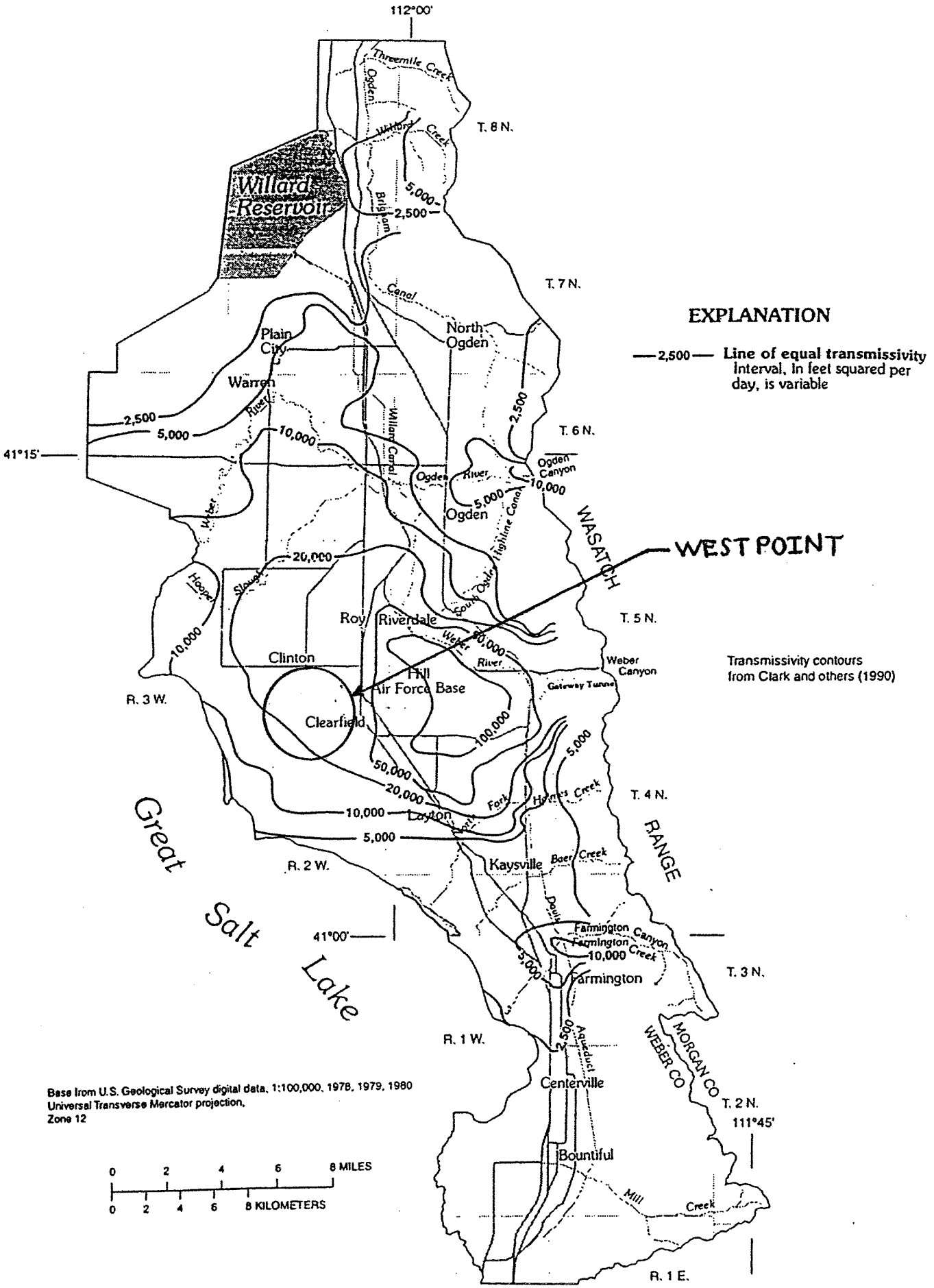


Figure 8. Estimated transmissivity of the deeper part of the East Shore aquifer system including the unconfined aquifer near the Wasatch Range, Utah.

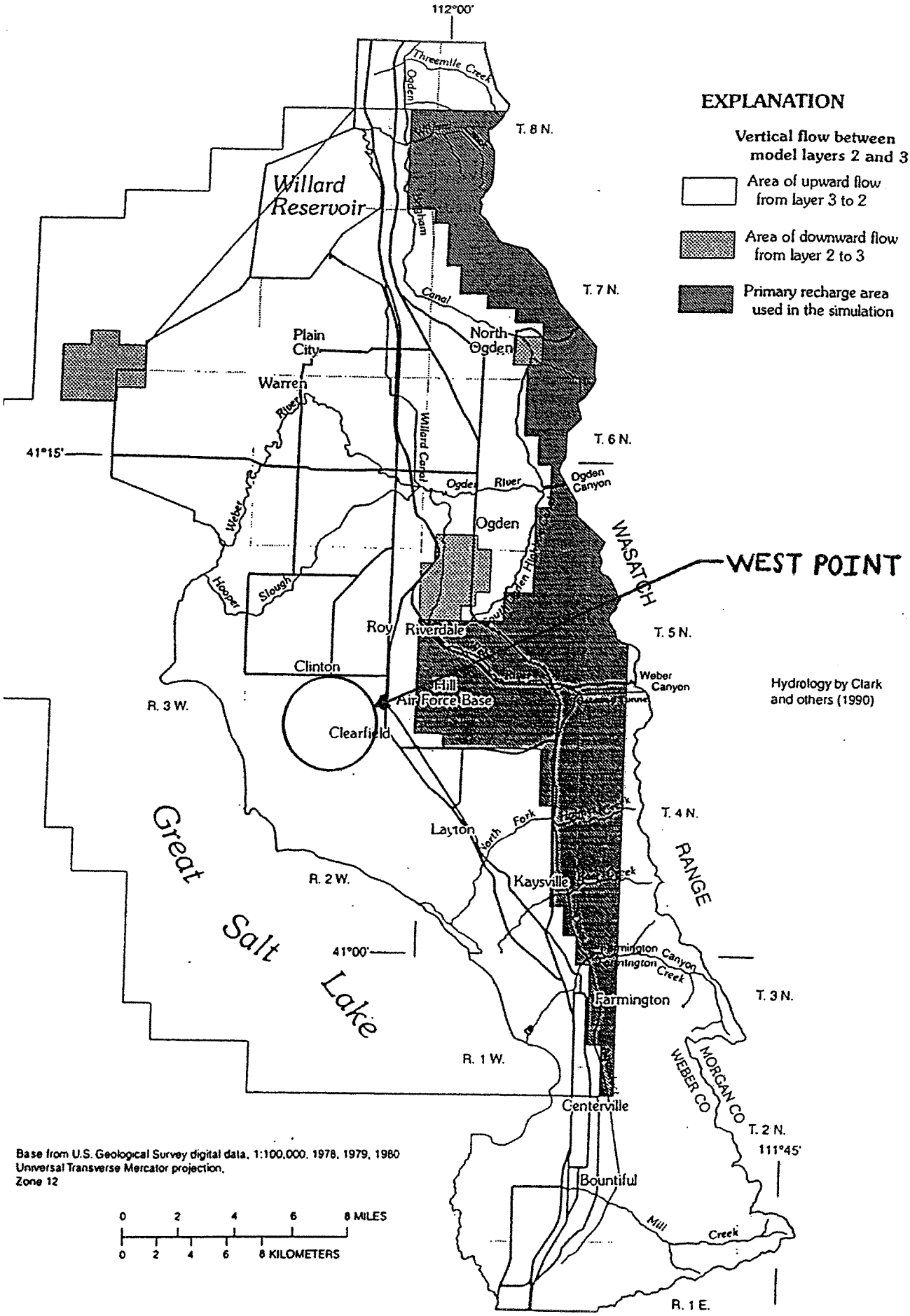


Figure 9. Computer-simulated ground-water flow between model layers 2 and 3, East Shore area, Utah, 1985.

Figures referenced from Ground-Water resources and simulated effects of withdrawals in the East Shore Area of Great Salt Lake, Utah by Clark and others.

Figure 2 Generalized block diagram showing water-bearing formations, probable directions of ground-water movement (arrows), and areas of recharge and discharge.

Figure 3 Recharge areas and major fault zones.

Figure 7 Area where the Sunset and Delta aquifers of the East Shore aquifer system can be differentiated, and the potentiometric surface of the Sunset aquifer, March 1985.

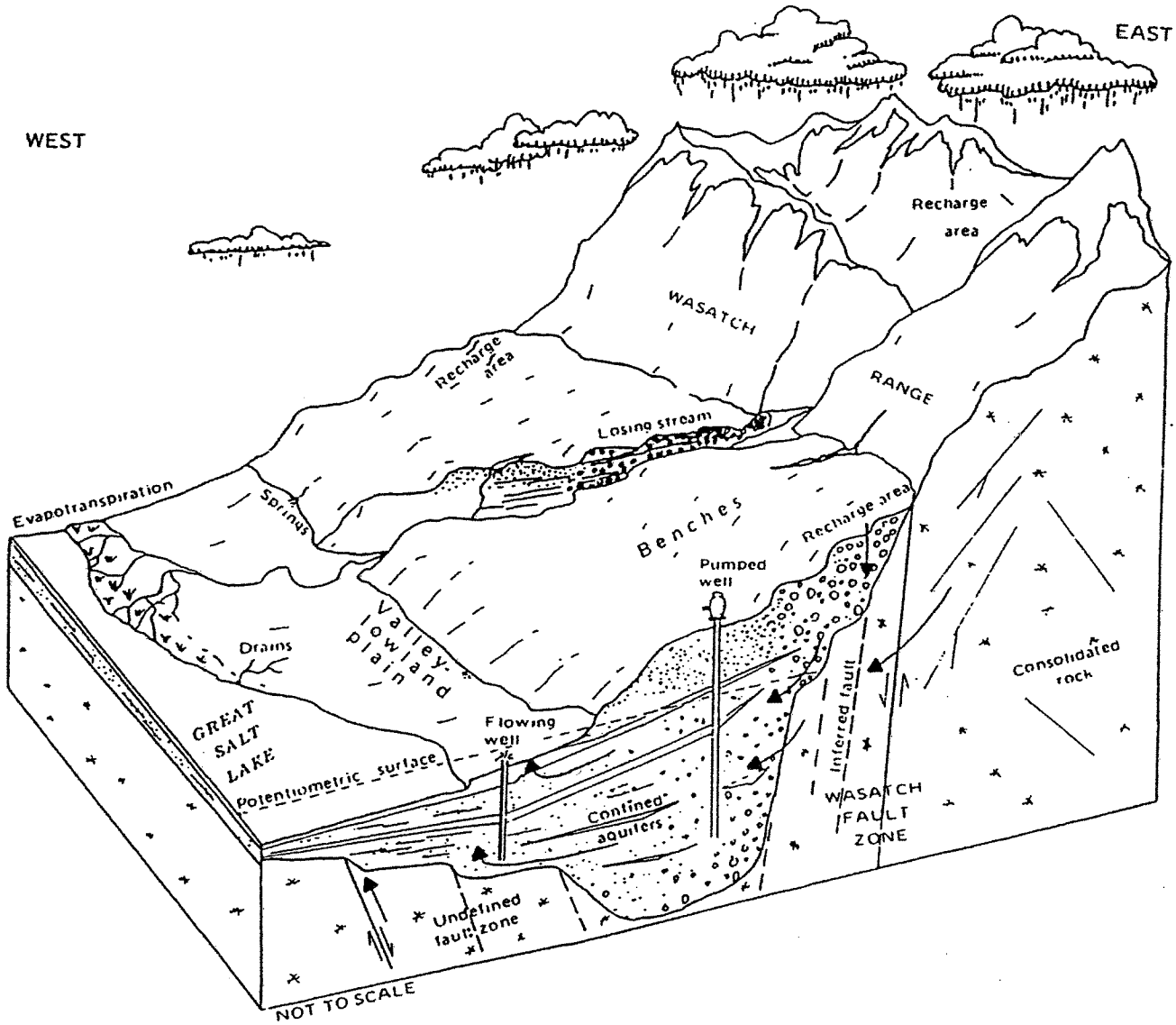
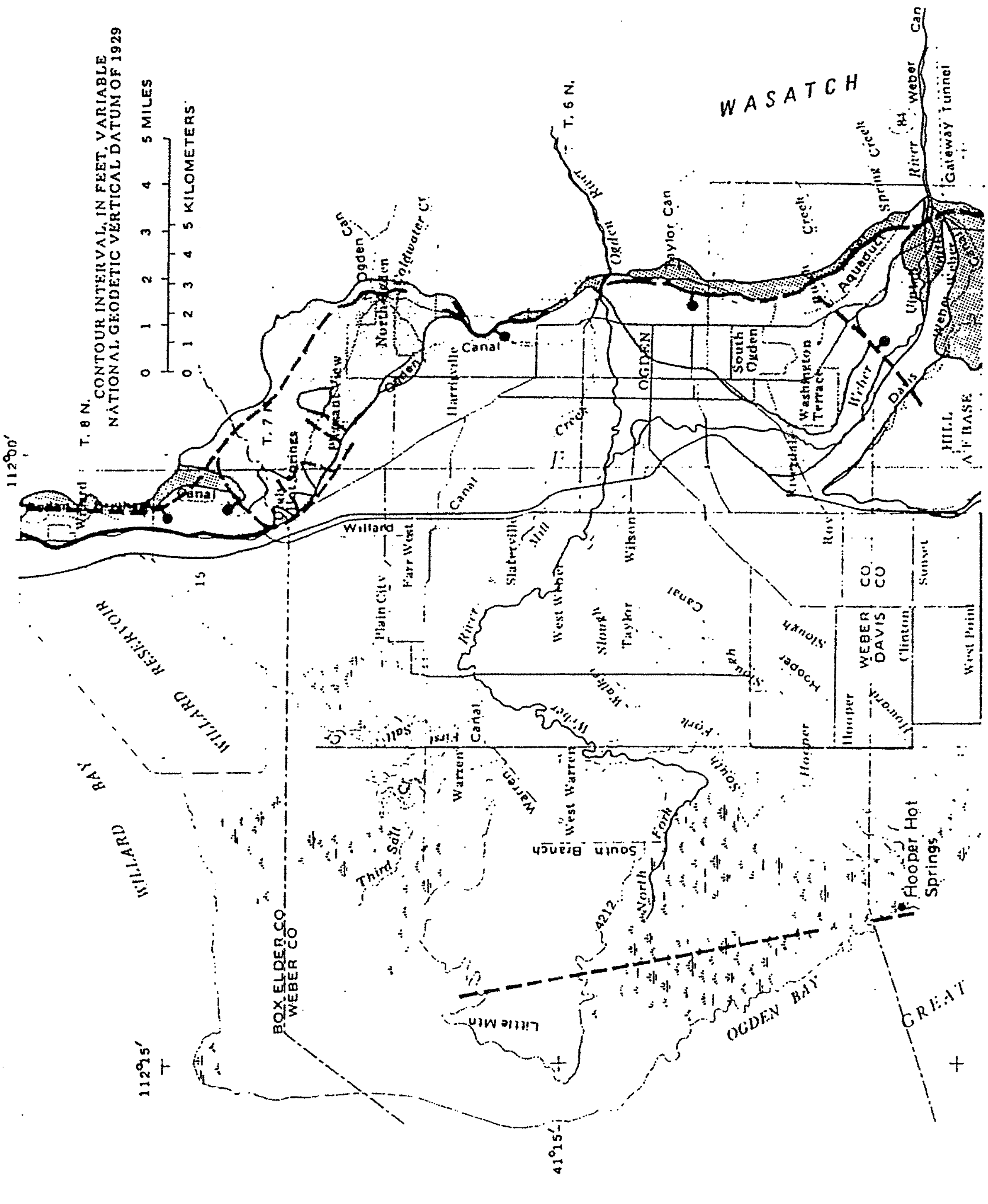
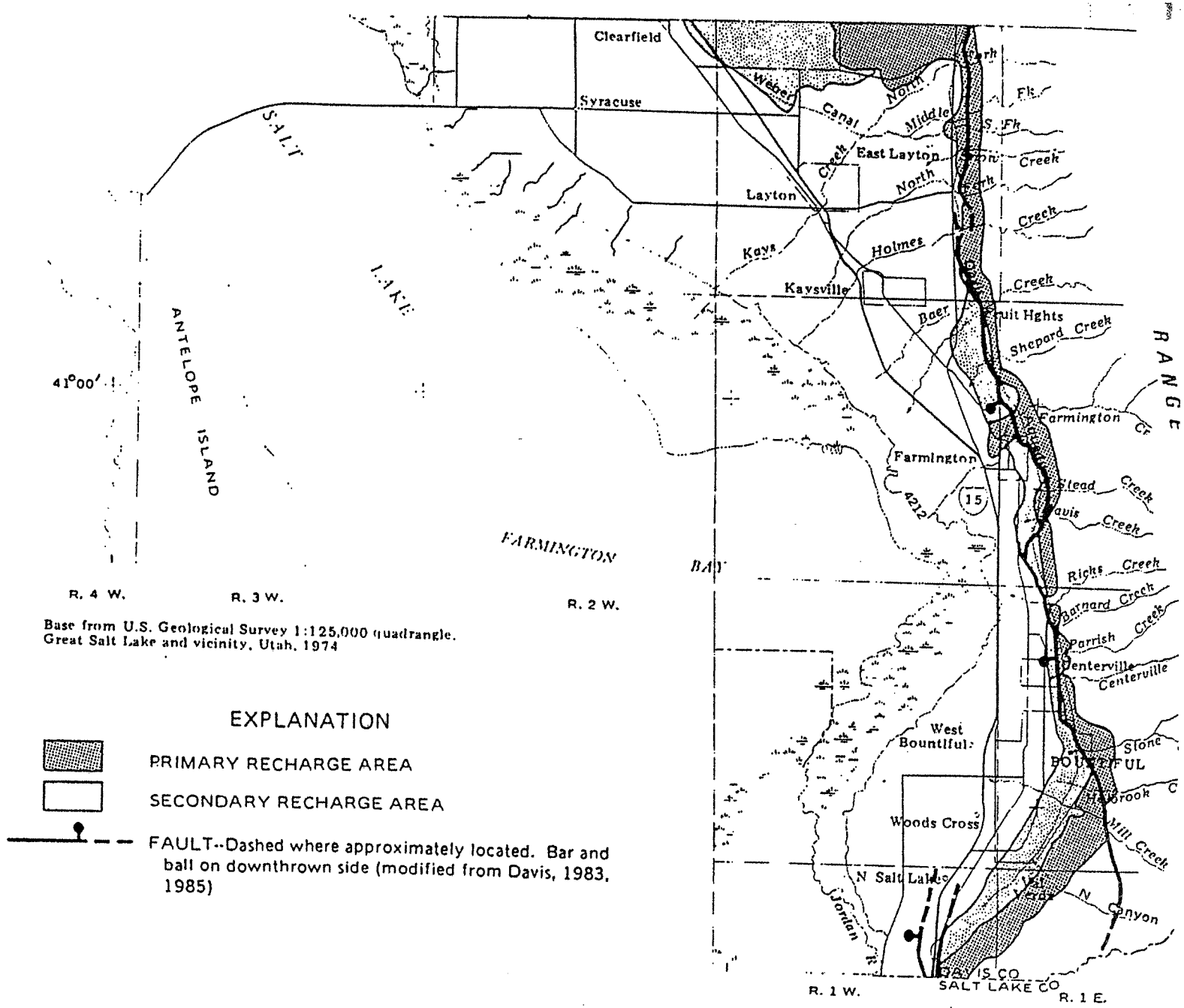


Figure 2.--Generalized block diagram showing water-bearing formations, probable directions of ground-water movement (arrows), and areas of recharge and discharge.


CONTOUR INTERVAL, IN FEET, VARIABLE
NATIONAL GEODETIC VERTICAL DATUM OF 1929
0 1 2 3 4 5 MILES
0 1 2 3 4 5 KILOMETERS
112°00'
112°15'
41°15'
T. 8 N.
T. 7 N.
T. 6 N.
T. 5 N.
WASATCH
Willard
Canal
Ogden
Harrisville
Plain City
Farr West
Slaterville
West Weber
Taylor
Wilson
Roy
South Ogden
Washington Terrace
Riverdale
HILL AFBASE
WEBER CO
DAVIS CO
Clinton
Sunset
West Point
Hooper
Hooper Hot Springs
West Warren
Warren
Little Mtn
OGDEN BAY
GREAT
WILLARD BAY
WILLARD RESERVOIR
BOX ELDER CO
WEBER CO
Gateway Tunnel
Weber River
Ogden River
Aqueduct
Taylor Can
Coldwater Cr
Spring Creek
South Branch
North Fork
South Fork
Hooper Slough
Third Salt Cr
First Salt
4212
15
84



Base from U.S. Geological Survey 1:125,000 quadrangle, Great Salt Lake and vicinity, Utah, 1974

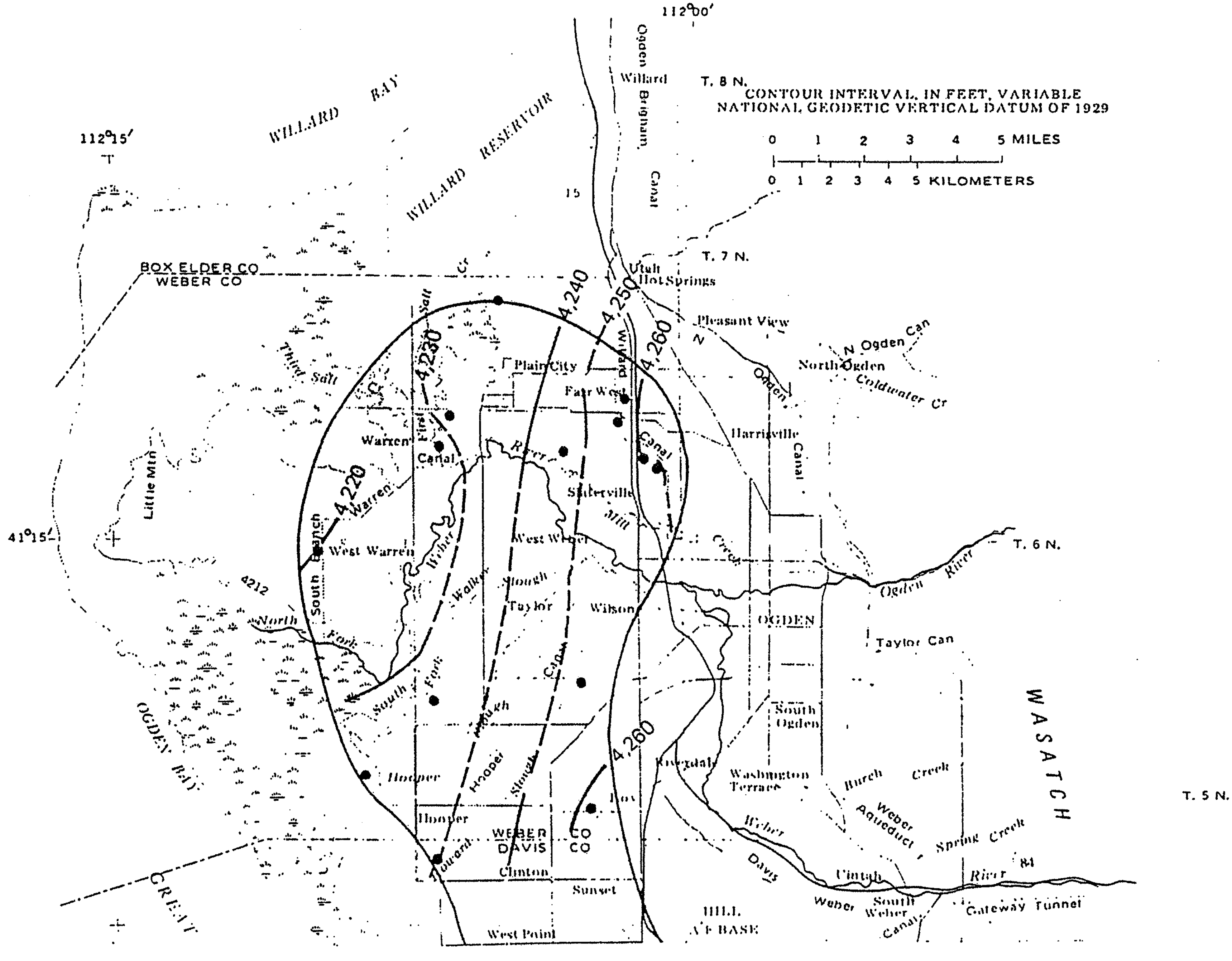
EXPLANATION

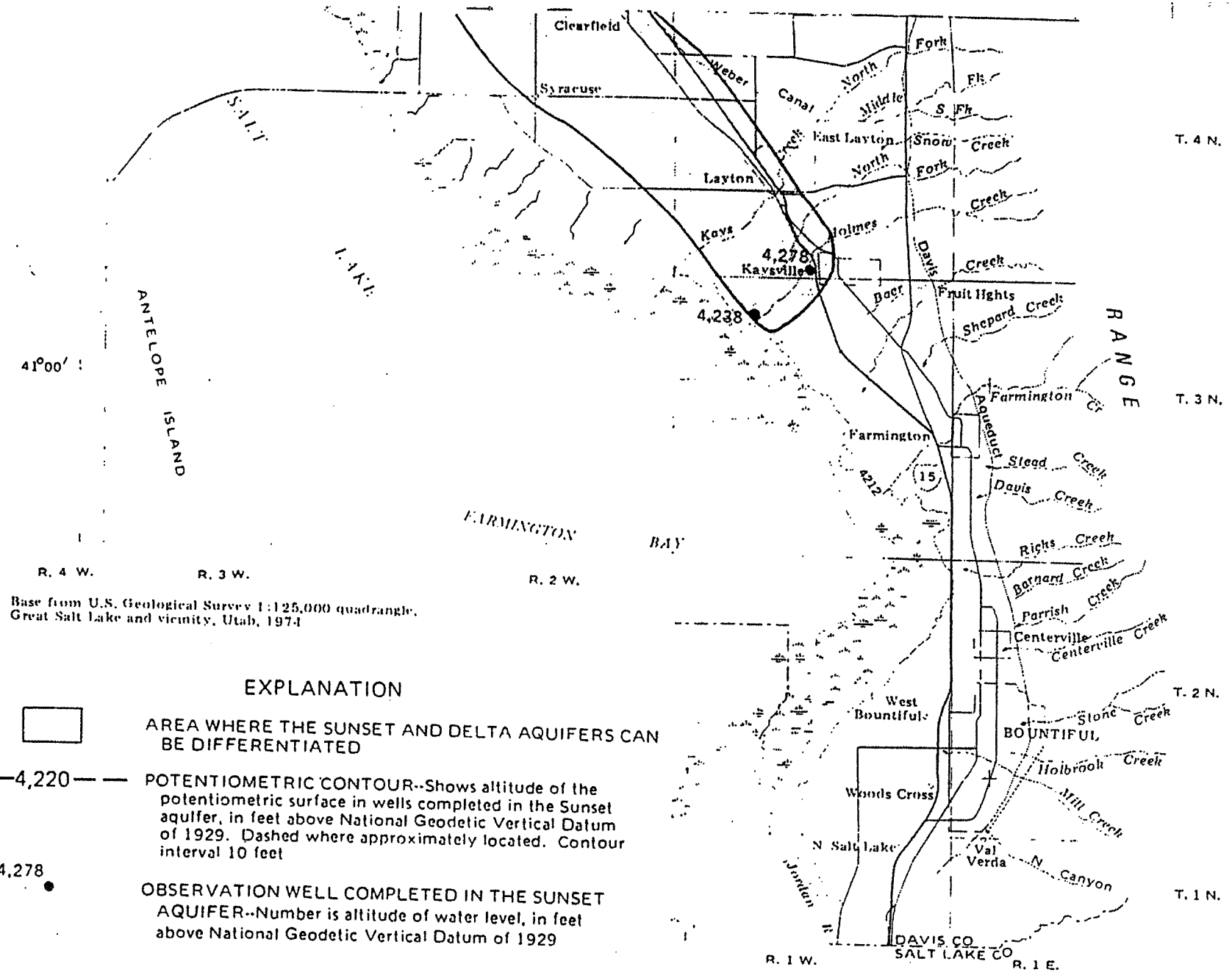
PRIMARY RECHARGE AREA

SECONDARY RECHARGE AREA

FAULT--Dashed where approximately located. Bar and ball on downthrown side (modified from Davis, 1983, 1985)

Figure 3.--Recharge areas and major fault zones.


CONTOUR INTERVAL, IN FEET, VARIABLE
NATIONAL GEODETIC VERTICAL DATUM OF 1929
0 1 2 3 4 5 MILES
0 1 2 3 4 5 KILOMETERS
112°15′
112°00′
41°15′
T. 8 N.
T. 7 N.
T. 6 N.
T. 5 N.
WILLARD BAY
WILLARD RESERVOIR
BOX ELDER CO
WEBER CO
WEBER CO
DAVIS CO
GREAT
OGDEN BAY
WASATCH
Little Mtn
4212
4,220
4,230
4,240
4,250
4,260
4,260
Willard
Ogden Brigham Canal
Utah Hot Springs
Pleasant View
N Ogden Can
North Ogden
Coldwater Cr
Harrisville
Canal
Plain City
Fair West
Warren
Canal
First
West Warren
West Weber
South Branch
North Fork
South Fork
Weber
River
Slaterville
Mill
Creek
Ogden River
OGDEN
Taylor Can
Taylor
Wilson
Walker
Slough
Canal
Hooper
Hooper Slough
Howard
Clinton
Sunset
West Point
HILL AF BASE
Riverdale
Washington Terrace
South Ogden
Burch Creek
Weber Aqueduct
Spring Creek
Weber River
Davis
Uintah
South Weber
Weber Canal
Gateway Tunnel
Third Salt
Salt
Cr
15
84



Base from U.S. Geological Survey 1:125,000 quadrangle, Great Salt Lake and vicinity, Utah, 1974

EXPLANATION

AREA WHERE THE SUNSET AND DELTA AQUIFERS CAN BE DIFFERENTIATED

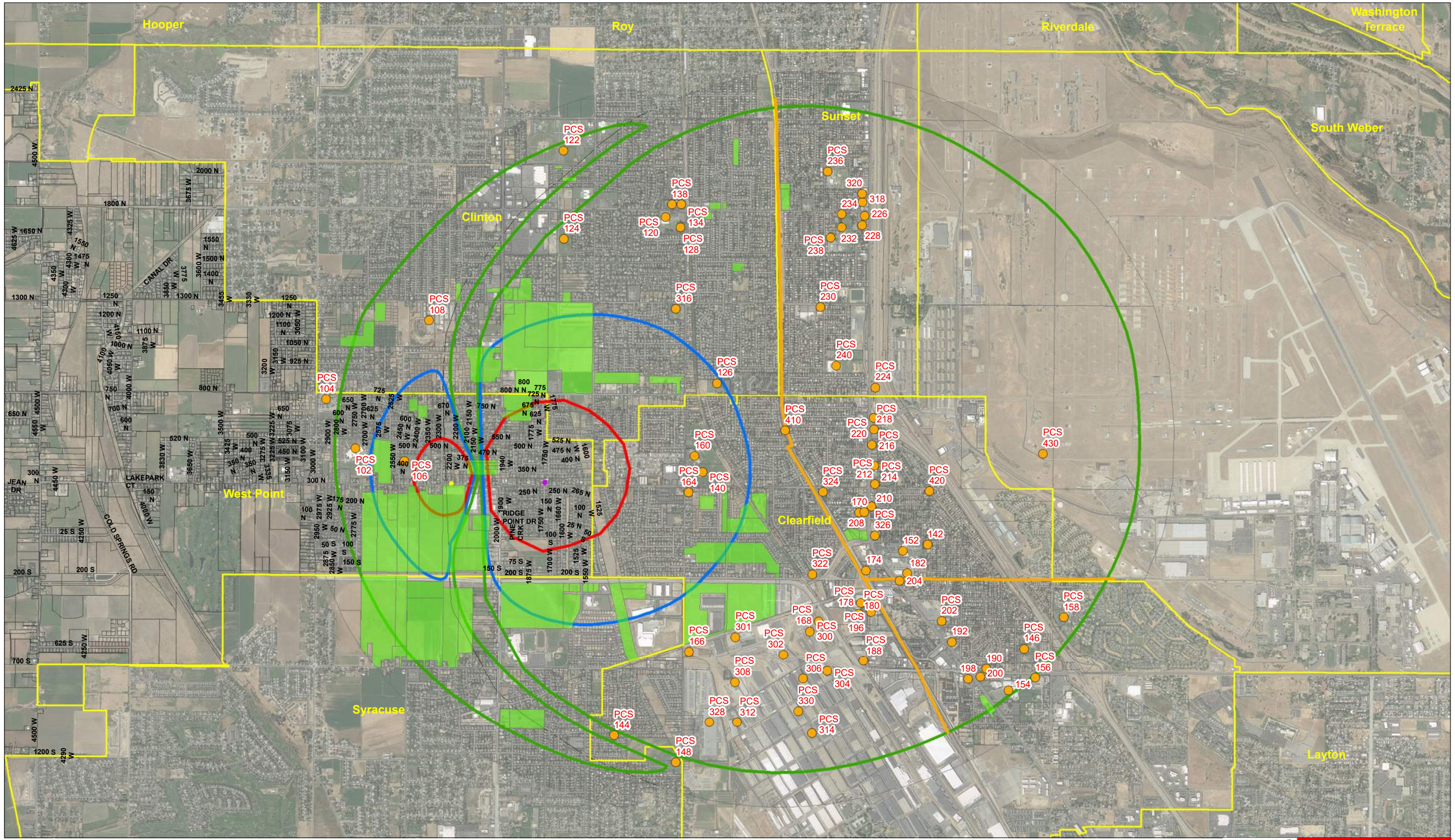
—4,220— POTENTIOMETRIC CONTOUR--Shows altitude of the potentiometric surface in wells completed in the Sunset aquifer, in feet above National Geodetic Vertical Datum of 1929. Dashed where approximately located. Contour interval 10 feet

4,278 OBSERVATION WELL COMPLETED IN THE SUNSET AQUIFER--Number is altitude of water level, in feet above National Geodetic Vertical Datum of 1929

Figure 7.--Area where the Sunset and Delta aquifers of the East Shore aquifer system can be differentiated, and the potentiometric surface of the Sunset aquifer, March 1985.

APPENDIX E: Delineation Zones and Recharge Area Maps

West Point Source Protection Zones and PCSs



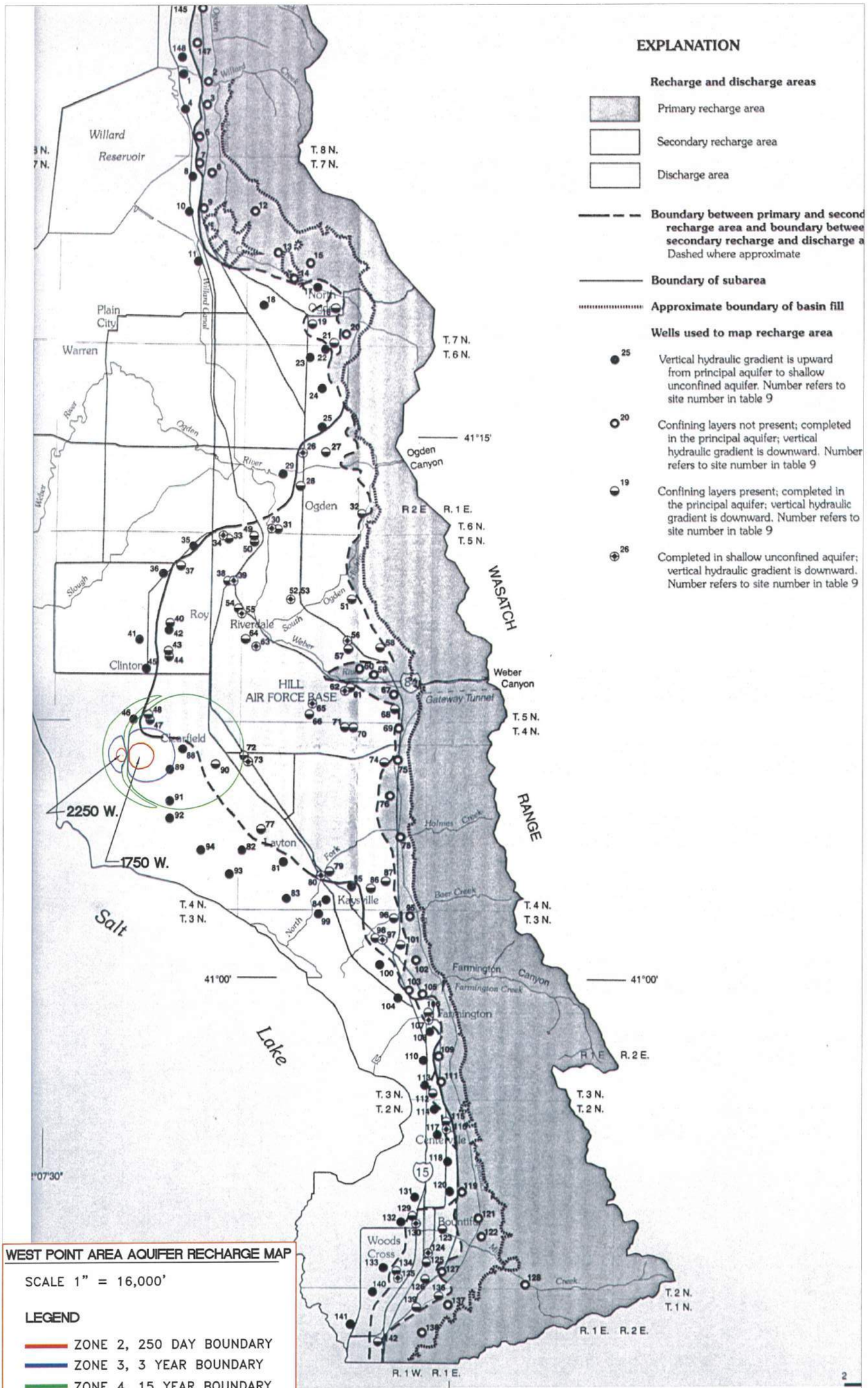
Legend

- West Point PCS
- Hazardous Liquid Pipeline
- PCS 500, Small Farming Areas

Zones

- Well, 1750 West
- Well, 2250 West
- Zone 2, 250 Day Boundary
- Zone 3, 3 Year Boundary
- Zone 4, 15 Year Boundary

GARDNER ENGINEERING
CIVIL • LAND PLANNING
MUNICIPAL • LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066



WEST POINT AREA AQUIFER RECHARGE MAP

SCALE 1" = 16,000'

LEGEND

- ZONE 2, 250 DAY BOUNDARY
- ZONE 3, 3 YEAR BOUNDARY
- ZONE 4, 15 YEAR BOUNDARY

2

2 / 2

Gardner Engineering
GardnerEngineering.net

WEST POINT CITY 1750 WEST AND 2250 WEST WELLS
DRINKING WATER SOURCE PROTECTION PLAN
RECHARGE AREA MAP
WEST POINT CITY, DAVIS COUNTY, UTAH

REVISIONS	
DATE	DESCRIPTION

SCALE: 1" =16,000'
DATE: November 2010
DESIGN: B.D.
DRAWN: DLW
CHECKED:
DWG: See Path at Left edge of drawing

APPENDIX F: List to whom Fact Sheet letter was sent in September 2021; Example letter

PARCEL_ID	Owner Name	Owner Address	Owner City/State	Owner Zip
140640145	BARBER, JAY T - TRUSTEE	1851 WEST 800 NORTH	WEST POINT, UT	84015
120190085	BARLOW CORPORATION INC	377 NORTH MAIN	Layton, UT	84041
129530005	BEAR RIVER STORAGE SYRACUSE LLC	289 NORTH 300 EAST	OREM, UT	84057
120500114	BOARD OF EDUCATION OF DAVIS SCHOOL DISTRICT	PO BOX 588	FARMINGTON, UT	84025-0588
120340080	BRIGGS, NEAL L & CAROLINE P - TRUSTEES	1184 SOUTH 2500 WEST	SYRACUSE, UT	84075
143470005 and 140530124	CASTLE CREEK HOMES LLC	1798 WEST 5150 SOUTH #103	ROY, UT	84067
129300004 and 129300005	CLEARFIELD JUNCTION LLC	2123 NORTH BELLA VISTA DR	FARMINGTON	84025
130760026 and 140520084	CLINTON CITY CORPORATION	2267 NORTH 1500 WEST	CLINTON, UT	84015
120250014	COLUMBIA OGDEN MEDICAL CENTER INC	1100 DR MARTIN L KING JR BLVD	NASHVILLE, TN	37203
140550162	COOK, AMOS ROY JR	4147 EAST HALE CIR	MESA, AZ	85205
120350103 and 120350132	COOK, CLEONE B - TRUSTEE	2324 WEST 700 SOUTH	SYRACUSE, UT	84075
120320052, 120320056, 120320074, 120330030, 120330047, 120330060, 120340078, 120340079, 120350068, 120350080, 127410001, 140620003, 140620022, 140620025, 140620026, 140620029 and 140620030	CORP OF THE PRESIDING BISHOP OF THE CHURCH OF JESUS CHRIST OF LDS	PO BOX 511196	SALT LAKE CITY, UT	84151

PARCEL_ID	Owner Name	Owner Address	Owner City/State	Owner Zip
145570201	CRAYTHORNE, ERIK & JIL	710 NORTH 2400 WEST	WEST POINT, UT	84015
130780041 and 130780059	CREAGER, BRIAN W	4979 SKYLINE PKWY	OGDEN, UT	84403
129300003	DAVIS COUNTY	61 SOUTH MAIN ST	FARMINGTON	84025-0618
120330014	DAVIS NORTH STAKE AND SUNSET STAKE OF LDS CHURCH - ETAL	PO BOX 511196	SALT LAKE CITY, UT	84151
129310001	FREEPORT CENTER ASSOCIATES LLP AND FREEPORT CENTER ASSOCIATES	PO BOX 160466	CLEARFIELD, UT	84016
120500124	GAILEY, SHIRLEY W & RANDY S - TRUSTEES - ETAL	PO BOX 638	KAYSVILLE	84037
132060095	GEISLER 7 LLC	3931 WEST TURNBERRY DR	SYRACUSE, UT	84075
120190127	HAMBLIN INVESTMENTS INC	2335 EAST 2400 NORTH	LAYTON, UT	84040
120190123	HAMBLIN, LAWRENCE FRED & MARCIA JO - TRUSTEES	376 WEST 2200 NORTH	SUNSET, UT	84015
140210122	HO, PETER AND NGUYEN, HANH HUU - TRUSTEES	12 SOUTH 2050 EAST	Layton, UT	84040
143080019, 143080020, 143190015, 140030087 and 140630116	JORDAN VALLEY WATER CONSERVANCY DISTRICT	PO BOX 70	WEST JORDAN, UT	84088
130780063	KELLER, KIM & CINDY - TRUSTEES	P.O. BOX 341	ROY, UT	84067
145670003	LI, JIANXIN	220 EAST WILLIAMS AVE	SALT LAKE CITY, UT	84111
129310002	LIFETIME PRODUCTS INC	PO BOX 160010 FREEPORT CENTER BLDG D-12	CLEARFIELD, UT	84016
120500126	MORAIN, ROBERT G & YVONNE L	1005 SOUTH 2000 WEST	SYRACUSE, UT	84075
128190003 and 128190004	NEELEYS PLACE LLC	2967 AMERICAN WAY	OGDEN, UT	84401
120250030	NINIGRET CONSTRUCTION COMPANY NORTH LC	1700 SOUTH 4650 WEST	SALT LAKE CITY, UT	84101
140530127	OBLOCK, ROBERT P	PO BOX 160466	CLEARFIELD, UT	84016
128310008	POINTE RESIDENTIAL LLC	1178 WEST LEGACY CROSSING BLVD STE 100	CENTERVILLE, UT	84014
140520093	Q-2 LLC	601 WEST 1700 SOUTH	SYRACUSE, UT	84075

PARCEL_ID	Owner Name	Owner Address	Owner City/State	Owner Zip
120320035	READ, RONALD W & MELANIE S	2593 WEST 300 NORTH	WEST POINT, UT	84015
129530006	RUECO LLC AND JOLLEY PROPERTY HOLDINGS LLC	1088 WEST 350 SOUTH	SYRACUSE, UT	84075
150030001 and 150030002	RUSSCO SYRACUSE LLC	295 NORTH MAIN ST	BOUNTIFUL, UT	84010
128230301	STATE STREET CLEARFIELD REAL PROPERTY LLC	471 WEST HERITAGE PARK BLVD #5	Layton, UT	84041
130770029 and 130770092	SUNSET CITY	200 W 1300 N	CLEARFIELD, UT	84015
145050301, 140030117 and 140030119	TETON INVESTMENT HOLDING LLC	1178 WEST LEGACY CROSSING BLVD STE 101	CENTERVILLE, UT	84014
128190007	ULTIMATE EXPRESS CAR WASH LLC	2967 AMERICAN WAY	OGDEN, UT	84401
140550263, 132060094 and 140550266	UTAH DEPARTMENT OF TRANSPORTATION	166 WEST SOUTHWELL ST	OGDEN, UT	84404
120260028	UTAH POWER & LIGHT CO	825 NE MULTNOMAH ST STE 1900	PORTLAND, UT	97232
140030118	WAGSTAFF INVESTMENTS LLC	3115 WEST 2100 SOUTH	WEST VALLEY CITY, UT	84119
120190098, 120190099 and 120190107	WEBER BASIN WATER CONSERVANCY DISTRICT	2837 EAST HIGHWAY 193	Layton, UT	84040
140540131	WHITESIDES, EVAN A & ERMA P - TRUSTEES	1845 EAST CHERRY LN	Layton, UT	84040
140210095	WOODMERE HOMES LC	4745 WEST 4750 SOUTH	WEST HAVEN, UT	84401
140550261	ZAUGG, BRETT & SUZANNE	88 NORTH CANYON COVE	WEST POINT, UT	84015

WEST POINT
UTAH

3200 West 300 North
West Point, UT 84015
PH: 801-776-0970
FAX: 801-525-9150
www.westpointcity.org

September 23, 2021

«Owner_Name»
«Owner_Address», «Owner_CityState» «Owner_Zip»

RE: Drinking Water Source Protection – Best Management Practices request at Davis County Parcel(s) «PARCEL_ID»

Dear «Owner_Name»,

West Point City has followed guidance from the State of Utah to identify where activities on the ground may contaminate the groundwater being produced from our drinking water wells. The identified areas are called source protection zones. Records indicate that you own an agricultural parcel within one of the City's source protection zones.

Often, potential contaminants for drinking water sources are located outside of the political boundaries of the water provider. Thus, if your property is located in Sunset, Clearfield or Syracuse, the actions on your property may have a potential impact on not only the drinking water in your city, but also may have impact on West Point City's sources.

You likely are already using care to handle and apply fertilizers and herbicides according to packaging labels. When handled and applied according to packaging labels, biological processes and quantities are calculated to eliminate harmful effects of the chemicals before they reach aquifers that are tapped for drinking water. As a reminder of the importance of proper handling and application, we ask that you follow best management practices to limit potential contamination of our collective groundwater resource.

- Follow application rates listed on packaging
- Fill/store bulk tanks on impervious surfaces, such as concrete, heavy clay or plastic/rubber liners
- Clean up spills/dispose of excess product according to packaging
- Please review the informational Fact Sheets in the Drinking Water section at https://deq.utah.gov/public-interest/fact-sheets for more ideas on how to prevent possible groundwater contamination

Thank you for your consideration. If you have any questions or need additional information, please do not hesitate to call me at (801) 614-5353.

Sincerely,

Boyd Davis, PE
West Point City Engineer
bdavis@westpointcity.org

Partnership for the Environment

Utah Department of Environmental Quality

Fertilizer Fact Sheet

What Are The Potential Hazards?

Fertilizer applied to plants during crop, lawn, and garden maintenance may leach into the ground water and cause contamination. The main constituent in fertilizer is usually nitrogen. If the nitrate level of drinking water is too high, infants, up to the age of six months, can develop a fatal disease called blue baby syndrome (methemoglobenemia). Drinking water that contains 10 milligrams of nitrate-nitrogen per liter of water exceeds the drinking water standard and should not be used, especially for infant formula. Proper storage, application, and watering procedures should be included in fertilizer best management practices to prevent contamination of ground water.

Storing Fertilizers

The less fertilizer you buy, the less you will have to store. Therefore, only purchase the amount and kind of fertilizer that you need.

- Fertilizer should be stored in locked, dry cabinets.
- Keep fertilizer and pesticides on separate shelves.
- Don't store fertilizer with combustibles, such as gasoline or kerosine, because of explosion hazards.

Application Precautions

The chemical in fertilizer that can most easily pollute ground water is a form of nitrogen called nitrate. Nitrate moves readily in soil to the ground water strata. The best way to prevent the movement of nitrate into the ground water is to apply no more nitrogen than the crops, grass, garden plants, shrubs, or trees can use during the time that the plants are growing.

- Calibrate your spreader and sprayer to keep from applying too much fertilizer.
- Load fertilizer spreaders on the driveway or other hard surfaces so any spills can easily be swept up. Fertilizer that spills should be swept up and applied to the lawn or garden at the right time and amount. This allows the fertilizer to grow plants instead of washing off into the storm drain system and ultimately contaminating nearby streams and lakes.
- If you are using liquid fertilizer on your turf, add fertilizer to the spray tank while on the lawn. This way, if you spill the fertilizer, it will be used by the plants and not run off into the storm drain system.
- Do not spray or apply fertilizer near irrigation wells. Wells are conduits to the ground water.

Application Rates For Lawns

Utah State University's Extension Service recommends the following for Utah lawns: "It is important to fertilize on a regular basis every four to six weeks to maintain an attractive lawn. Begin

when lawns start to green in the spring, mid to late April. Earlier applications may cause a lawn to become greener faster, but may also increase spring disease problems. Summer applications of nitrogen fertilizer will not burn lawns, if you apply them to dry grass and water immediately. Fall applications are important for good winter cold tolerance, extended fall color, and fast spring green-up. A complete fertilizer containing nitrogen, phosphorus and potassium should be applied in the fall every three to four years. This will prepare the lawn for winter conditions and allow the phosphorus to penetrate into the root zone by the next growing season.

For a well-kept lawn in Utah, apply 1 pound of available nitrogen per 1,000 square feet each four to six weeks throughout the growing season. The following chart indicates how much of various fertilizer will supply one pound of nitrogen."

%N on Label	Pounds of Fertilizer Per 1000 Square Feet
12-15	7-8
18-21	5-5 ½
24-28	3 ½-4
30-34	3-3½
45-46	2-2 ¼

Types of Plants

One of the best ways to protect your ground water is to use plants that are drought-tolerant and that are adapted to your area. Drought-tolerant or low-water-use plants can continue to survive once they are established, even during times of little rainfall. Because you do not have to water these plants, there is less chance that nitrate and pesticides will be carried with the water through the soil and into the ground water.

If low-water-use plants are not practical, then try to use medium water use plants. Water these plants only when they begin to show drought stress. Some plants will wilt when they are drought-stressed, while other plants will show marginal leaf burn.

Watering

Over-watering plants can cause excess water to move through the soil. This water can flush fertilizer away from the root zone of your plants and into the ground water. The best way to avoid over-watering is simply to measure how much you are adding. Contact your county Extension Service to determine the best way to calculate how much water your plants need and how to measure the amount you are applying.

For More Information, Contact:

Division of Drinking Water, Source Protection Program - (801) 536-4200
Department of Agriculture - (801) 538-7100
Environmental Hotline - 1-800-458-0145
Sonja Wallace, Pollution Prevention Coordinator - (801) 536-4477

APPENDIX G: Letter sent to Syracuse in September 2021

WEST POINT
UTAH

3200 West 300 North
West Point, UT 84015
PH: 801-776-0970
FAX: 801-525-9150
www.westpointcity.org

September 23, 2021

Noah Steele, Community Development Director
Syracuse City
Via email only < nsteele@syracuseut.com>

RE: Drinking Water Source Protection Plan zoning request.

Dear Mr. Steele:

As you are aware, the Utah state division of Drinking Water requires that public water suppliers develop, maintain and update Drinking Water Source Protection Plans (DWSPP).

As part of West Point City's DWSP update, we looked at the source protection ordinances for Clinton, Sunset, Clearfield and Syracuse. We noticed that Syracuse mentions the presence of a Wellhead Protection ordinance in 4.15.520, Wellhead protection. However, we were unable to find a corresponding Wellhead Protection ordinance.

We request that Syracuse City consider adopting a source protection ordinance meeting the intent of the Division of Drinking Water DWSP Plan rule, R309-600. We're assuming that doing so was once the intent of Syracuse City, as such an ordinance provides the framework for preventing the location of potential contaminant sources in the source protection zones for the Syracuse City. We further request that your ordinance provide the same zoning protection for other public water system sources, such as West Point City's 2250 and 1750 West wells. This can be done by referencing Davis County's Drinking Water Source Protection Zones layer on their GIS and applying your zoning ordinance to *any* public water system source with state-approved source protection zones logged on the County GIS.

Thank you for your consideration. If you have any questions or need additional information, please do not hesitate to call me at (801) 614-5353.

Sincerely,

Boyd R Davis

Boyd Davis, PE
West Point City Engineer
bdavis@westpointcity.org

APPENDIX H: Drinking Water Source Protection web page outline for implementation in 2022

It is intended that the City's web designer create a link to a webpage containing at least the following information, presented in a format and with a user experience compatible with other pages on the WestPointCity.org website.

Welcome!! Thank you for your interest in helping to protect the quality of drinking water at its source. West Point City gets the majority of the water for its residents from the Weber Basin Water Conservancy District, which District is responsible for developing its own source protection plans. Currently used for emergency backup, the City's two wells are the subject of the City's Drinking Water Source Protection Plan. The most potent protection for the quality of groundwater is to prevent the introduction of potential contaminants into the groundwater system. The most frequent potential contaminants for the City's wells are fertilizers and herbicides if applied incorrectly, and leaks or spills from fuel storage tanks. Individual home owners have a significant influence on keeping these potential contaminants out of the groundwater system.

The Utah Department of Environmental Quality has produced a series of informative fact sheets to help potential contaminant owners prevent groundwater contamination. The fact sheets can be found in the Drinking Water section of https://deq.utah.gov/public-interest/fact-sheets.

The fact sheets cover the following topics:

Division of Drinking Water

Dry Cleaning Facilities

Fertilizer

Household Hazardous Waste

Junkyards

Metal Finishers

Pesticides

Pollution Prevention

Printing Shops

Septic Tank and Drainfield Systems

Utah's Drinking Water

Vehicle Maintenance and Repair Industry

We invite you to review the fact sheets that may be applicable to you. We invite you to implement best management practices (BMPs) at your home or place of business. We thank you for your concern and efforts towards protecting the quality of groundwater for the residents of West Point City and all residents and visitors of Davis County.

The full Drinking Water Source Protection Plan for the City's Sources is available by calling the West Point City office at (801) 776-0970.

For reference, the City has adopted a Drinking Water Source Protection Ordinance, 17.140.

Further information regarding Source Protection can be found at:

- https://deq.utah.gov/drinking-water/source-protection-division-drinking-water
- https://www.epa.gov/sourcewaterprotection/basic-information-about-source-water-protection

APPENDIX I: Facility Damage Assessment Forms

- Wells and Pump Stations
- Pipes, Underground
- Buildings and Structures

FACILITY DAMAGE ASSESSMENT CHECKLIST

FOR

WELLS AND PUMP STATIONS

Location:

Checked by: _____ Date: _____

Assessment of Damage Codes (Check appropriate code)

No Damage	Green_____
Usable with caution	Yellow_____
Damage critical, shutdown necessary	Red_____

Code red or yellow: take necessary precautionary action and notify scene commander.

ALWAYS COMPLETE FOR RED TAG SHUTDOWNS

Before trying to restore function of plant, the following should be checked:

1. Electrical power, wires, motors, panels, breakers, transformers
2. Standby power generators
3. Water lines and controls
4. Structural damage
5. Flooding
6. Drive shafts
7. Chlorine tanks and lines
8. Other observations noted

Estimated cost to restore facility $_____

FACILITY DAMAGE ASSESSMENT CHECKLIST

FOR

PIPES, UNDERGROUND

Location:

Checked by: _____ Date: _____

Assessment of Damage Codes (Check appropriate code)

No Damage	Green_____
Usable with caution	Yellow_____
Damage critical, shutdown necessary	Red_____

Code red or yellow: take necessary precautionary action and notify scene commander.

ALWAYS COMPLETE FOR RED TAG SHUTDOWNS

The following should be checked:

1. All air valves
2. Pressure regulating control valves
3. Main lines
4. Seepage, leaks, cracks in soil
5. Bridges and freeway overpasses
6. Irrigation canal pipe crossings
7. Structural damage
8. Manholes and sewer and water vaults
9. Chemical spills that may contaminate water
10. Other Observations noted

Estimated cost to restore facility $_____

FACILITY DAMAGE ASSESSMENT CHECKLIST

FOR

BUILDINGS AND STRUCTURES

Location:

Checked by: _____ Date: _____

Assessment of Damage Codes (Check appropriate code)

No Damage	Green_____
Usable with caution	Yellow_____
Damage critical, shutdown necessary	Red_____

Code red or yellow: take necessary precautionary action and notify scene commander.

ALWAYS COMPLETE FOR RED TAG SHUTDOWNS

Before entering structures, check the following:

1. Safety
2. Structural damage
3. Doorway, which may jam
4. Electrical systems and downed wires
5. Disconnect electrical, gas and water services if necessary to assure safe entry and operation
6. Foundation and subbase
7. Soil conditions, landslides, embankment slump
8. Secure broken windows and doors
9. Secure alarms

Estimated cost to restore facility $_____

APPENDIX J: West Point City Municipal Code Ch. 18.30, Drinking Water Source Protection

Note: the complete text of the ordinance follows. The City Code numbering has since been altered and the published ordinance on line under the new numbering system, Ordinance 17.140, is incomplete. One of the actions that West Point will complete during 2022 is update the on-line record with the full text of the Drinking Water Source Protection ordinance.

Chapter 18.30
DRINKING WATER SOURCE PROTECTION

Sections:

18.30.010 Definitions.

When used in this chapter the following words and phrases shall have the meanings given in this section:

“Abandoned well” means a well whose purpose and use has been permanently discontinued or a well that is in a state of disrepair and its intended purpose cannot reasonably be achieved. A well can be abandoned only after being properly sealed according to the requirements of the State of Utah Administrative Rules for Water Well Drillers, R655-4-12.

“Allowed uses” means a use, activity, or practice of which does not create a risk of contamination in the specified zone significant enough to require the implementation of regulatory requirements and best management practices and, therefore, the use is allowed.

“Best management practices” means a practice or combination of practices determined to be the most effective practicable means of conducting a land use activity to minimize the potential for becoming a pollution source (including technological, economic, and institutional considerations).

“Collection area” means the area surrounding a ground water source which is underlain by collection pipes, tile, tunnels, infiltration boxes, or other ground water collection devices.

“Design standard” means established state or national standards for the design, construction, placement, or maintenance of a potential contamination source to prevent discharges to the ground water. See also “secondary containment.”

“Hazardous waste” means a waste with properties that make it dangerous or potentially harmful to human health

or the environment.

“Land management strategies” means land use and non-land use controls which include, but are not limited to, the following: land ordinances, site plan reviews, design and operating standards, source prohibitions, optional purchase of property and development rights, public education programs, ground water monitoring, household hazardous waste collection programs, water conservation programs, memoranda of understanding, written contracts and agreements, and so forth.

“Pollution source” means point source discharge of contaminants to ground water or potential discharges of the liquid forms of extremely hazardous substances which are stored in containers in excess of applicable threshold planning quantities as specified in SARA Title III. Examples of possible pollution sources include, but are not limited to, the following: storage facilities that store the liquid forms of extremely hazardous substances, septic tanks, drain fields, Class V underground injection wells, landfills, open dumps, land filling of sludge and septage, manure piles, salt piles, pit privies, and animal feeding operations with more than 10 animal units. The following clarify the definition of “pollution source”:

1. “Animal feeding operation” means a lot or facility where the following conditions are met: animals have been or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and crops, vegetation forage growth, or postharvest residues are not sustained in the normal growing season over any portion of the lot or facility. Two or more animal feeding operations under common ownership are considered to be a single feeding operation if they adjoin each other, if they use a common area, or if they use a common system for the disposal of wastes.

2. “Animal unit” means a unit of measurement for any animal feeding operation calculated by adding the following numbers: the number of slaughter and feeder cattle multiplied by 1.0, plus the number of mature dairy cattle multiplied by 1.4, plus the number of swine weighing over 55 pounds multiplied by 0.4, plus the number of sheep multiplied by 0.1, plus the number of horses multiplied by 2.0.

3. “Extremely hazardous substances” means those substances which are identified in the Sec. 302(EHS) column of the “TITLE III LIST OF LISTS – Consolidated List of Chemicals Subject to Reporting under SARA Title III” (EPA 560/4-91-011).

“Potential contamination source” means any facility or site which employs an activity or procedure which may potentially contaminate ground water. A pollution source is also a potential contamination source.

“Prohibited uses” (X) means a use, activity, or practice of which creates a substantial risk of contamination in the specified zone. The use is not permitted.

“Regulatory agency” means any governmental agency (local, state, and/or federal) with jurisdiction over hazardous waste as defined herein.

“Restricted” (R) means that the nature of the use, or some element of the use, represents a potential contamination source. The use may be permitted only after review and approval by the land use authority. As part of this review, recommendations from the Davis County health department and other applicable regulatory agencies shall be considered. Restricted use is subject to best management practices and compliance with other reasonable conditions as may be established by these agencies.

“Sanitary landfill” means a disposal site where solid wastes, including putrescible wastes, or hazardous wastes, are disposed of on land by placing earth cover thereon.

“SARA Title III” means the Superfund Amendment and Reauthorization Act section found in 40 CFR 300 through 302, pertaining to emergency response and right to know.

“Secondary containment” means a type of system that is used to provide release detection prevention, such as trays under containers, floor curbing or other systems designed to hold materials or liquids that may discharge from containers holding regulated substances. Examples include a double-walled tank, a double-walled integral piping system, or a single-walled tank or integral piping system that is protected by an enclosed concrete vault, liner, or an impervious containment area.

“Septic tank/drain-field system” means a system, which is comprised of a septic tank and a drain-field, which accepts wastewater from buildings or facilities for surface or subsurface treatment and disposal.

“Source protection zone” means the specified surface and subsurface area surrounding a ground water source of drinking water supplying a public water supply, through which contaminants are reasonably likely to move toward and reach such ground water source. These zones shall have the approval of the state of Utah Division of Drinking Water as described in R309-600, Source Protection: Drinking Water Source Protection for Ground Water Sources and as stated in WPMC 18.30.030.

“Time of travel distance” means the distance that ground water will travel in a specified time. This distance is generally a function of the permeability and slope of the aquifer. Time of travel is determined from hydrological studies and is approved by the State Department of Environmental Quality, Division of Drinking Water.

“Underground storage tank” means a tank or combination of tanks and underground pipes and impact valves connected to tanks being used or having been used to contain regulated substances and which has at least 10 percent of the total volume of the tank and underground portions of pipes connected to the tank underground.

“Wellhead” means the upper terminal of a well, including adapters, ports, seals, valves and other attachments. (Ord. 04-21-2009 § 1)

18.30.020 Establishment of drinking water source protection zones.

There are hereby established use districts to be known as zones one, two, three, and four of the drinking water

source protection area, or alternatively the management area. These zones shall have the approval of the State of Utah, Division of Drinking Water, as described in R309-600, Source Protection: Drinking Water Source Protection for Ground Water Sources, and are identified and described as follows:

A. Zone one is the area within a 100-foot radius from a wellhead or margin of the collection area.

B. Zone two is the area within a 250-day ground water time of travel to a wellhead, the boundary of the aquifer(s) which supplies water to the ground water source, or the ground water divide, whichever is closer, as specified on the “Drinking Water Source Protection Zone Map” on file with the city.

C. Zone three (waiver criteria zone) is the area within a three-year ground water time of travel to a wellhead or margin of the collection area, the boundary of the aquifer(s) which supplies water to the ground water source, or the ground water divide, whichever is closer, as specified on the “Drinking Water Source Protection Zone Map” on file with the city.

D. Zone four is the area within a 15-year ground water time of travel to a wellhead, the boundary of the aquifer(s) which supplies water to the ground water source, or the ground water divide, whichever is closer, as specified on the “Drinking Water Source Protection Zone Map” on file with the city. In some cases, such as bedrock areas, zones two, three, and four are overlapping, due to the inability to determine time of travel. These are sensitive areas. In these cases, the zone should be protected as for zone two.

E. “Management area” means the area outside of zone one and within a two-mile radius where the optional two-mile radius delineation procedure has been used to identify a protection area, as described in the Utah Division of Drinking Water R309-600, Source Protection: Drinking Water Source Protection for Ground Water Sources. This area shall be treated as for zone two. (Ord. 04-21-2009 § 1)

18.30.030 Allowed uses.

The following uses shall be permitted within drinking water source protection zones:

A. Any use permitted within existing agricultural, single-family residential, multifamily residential, and commercial districts so long as uses conform to the rules and regulations of the regulatory agencies.

B. Any other open land use where any building located on the property is incidental and accessory to the primary open land use. (Ord. 04-21-2009 § 1)

18.30.040 Prohibited uses.

The following uses or conditions shall be and are hereby prohibited within drinking water source protection zones, whether or not such uses or conditions may otherwise be ordinarily included as a part of a use permitted under WPMC 18.30.030.

A. Zone One. The location of a potential contamination source as defined herein.

B. Zone Two and Management Area. The location of pollution sources as defined herein, unless their contaminated discharges are controlled with design standards.

C. Zones Three and Four. The location of potential contamination sources, unless they are controlled through land management strategies.

To further clarify uses and prohibitive uses in protective zones, refer to Table 1, Use Matrix for Potential Contamination Sources, WPMC 18.30.070(A). For a generic list of regulated substances, see WPMC 18.30.070(B). This list and table are for clarification and planning purposes. They are not all-inclusive. Substances that are not in this table and list may need further clarification. (Ord. 04-21-2009 § 1)

18.30.050 Overly protective protection zones.

If management areas were delineated using the optional two-mile radius delineation procedure, or if protection zones appear to be excessively conservative (too large), they may be disputed according to the following procedure:

A. Submit written comments to the land use authority stating the reasons that the delineated management area or protective zones should be reconsidered.

B. If the land use authority concurs, it may authorize a new hydrogeologic investigation at the expense of the entity requesting changes to the delineated management area or protective zones.

C. The new hydrogeologic investigation must then be submitted to the Utah Division of Drinking Water for their review.

D. If the Division of Drinking Water finds that the new hydrogeologic investigation is protective and meets the requirements of a delineation report according to the Utah Drinking Water Source Protection for Ground Water Sources Rule (R309-600), the land use authority may enforce this chapter according to the new protection zones. (Ord. 04-21-2009 § 1)

18.30.060 Administration.

A. The policies and procedures for administration of any source protection zone established under this chapter, including without limitation those applicable to existing nonconforming uses, exception, enforcement and penalties, shall be the same as provided in the existing land use ordinance for West Point City, as presently enacted, except that the land use authority cannot grant a variance until the request is reviewed and recommendation is provided by the Davis County health department. If it is necessary to have additional expertise evaluate the variance, it shall be at the expense of the entity requesting the variance. The recommendation relative to the requested variance shall be documented and returned to both the requester and the West Point City land use authority.

B. If there are noncompliant potential contamination sources found in the source protection zones that cannot be resolved by the water system, this shall be brought before the West Point City land use authority, Davis County health department, and/or the applicable regulatory agency for enforcement action.

C. It shall be the water system's responsibility to maintain and supply maps of their source protection zones to West Point City or the data may be obtained by the city, through the State Division of Drinking Water. (Ord. 04-21-2009 § 1)

18.30.070 Appendices.

A. The following table identifies uses, which have varying potentials to contaminate groundwater sources. These uses have been classified according to the risk of contamination in each protection zone as follows (see definitions for risk classifications):

Allowed Uses (A)

Restricted (R)

Prohibited Uses (X)

Use Matrix for Potential Contamination Sources

Potential Contaminated Sources	Protection Zone		
	Zone 1	Zone 2	Zones 3 and 4
Abandoned wells	X	X	X
Agricultural pesticide, herbicide, and fertilizer storage, use, filling, and mixing areas pursuant to federal regulations	X	R	A
Airport maintenance and fueling sites	X	R	R
Appliance repair	X	R	R
Auto operations and fleet vehicle maintenance facilities (commercial):			
Dealership maintenance departments	X	R	R
Tire	X	R	R
Auto body	X	R	R
Engine repair	X	R	R

Rust proofing	X	R	R
Oil and lube shops	X	R	R
Vehicle rental with maintenance	X	R	R
Beauty salons	X	R	A
Boat building and refinishing	X	R	R
Car washes	X	A	A
Cemeteries, golf courses, parks, and plant nurseries	X	R	R
Chemical reclamation facilities	X	R	R
Chemigation wells	X	X	R
Concrete, asphalt, and tar companies	X	R	R
Dairy farms and animal feedlots (more than 1,000 animal units)	X	X	A
Dry cleaners (with on-site chemicals)	X	X	R
Dry cleaners (without on-site chemicals)	X	A	A
Embalming services	X	R	R
Farm operations:			
Dump sites	X	R	R
Maintenance garages	X	R	R
Manure piles (per 1,000 animal units)	X	X	A
Food processing, meat packing, and slaughterhouses	X	X	A
Fuel, oil, and heating oil distribution and storage facilities	X	R	R
Furniture stripping, painting, and finishing businesses	X	R	R
Gasoline service stations (including	X	R	R

underground storage tanks)			
Hospitals and medical, dental, and veterinary offices	X	R	R
Industrial manufacturers of chemicals, pesticides, herbicides, paper products, leather products, textiles, rubber, plastic, fiberglass, silicone glass, pharmaceuticals, and electrical equipment, etc.	X	R	R
Industrial waste disposal/impoundment areas	X	X	R
Junk and salvage yards	X	R	R
Landfills and transfer stations	X	R	A
Laundromats	X	A	A
Machine shops, metal plating, heat treating, smelting, annealing, and descaling facilities	X	R	R
Mining operations:			
Radiological	X	R	R
Sand and gravel excavation and processing	X	R	R
Municipal wastewater treatment plants	X	X	A
Photo processing and print shops	X	R	R
Railroad loading or unloading areas	X	R	R
Railroad yards	X	R	R
Residential pesticide, herbicide, and fertilizer storage, use, filling, and mixing areas pursuant to federal regulations	X	A	A
Residential underground storage tanks	X	R	A
RV waste disposal stations	X	X	A

Salt and salt-sand piles	X	R	R
Septic tank drain field systems	X	X	R
Oil pipelines	X	R	R
Toxic chemical storage	X	X	X
Wood preservative treatment facilities	X	R	R

B. Generic Regulated Substance List.

1. Acid and basic cleaning solutions;

2. Antifreeze and coolants;

3. Animal dips;

4. Arsenic and arsenic compounds;

5. Battery acids;

6. Bleaches and peroxide;

7. Brake and transmission fluid;

8. Brine solution;

9. Casting and foundry chemicals;

10. Caulking agents and sealants;

11. Cleaning solvents;

12. Corrosion and rust preventatives;

13. Cutting fluids;

14. Degreasing solvents;

15. Disinfectants;

16. Dyes;

17. Electroplating solutions;

18. Engraving and etching solutions;

19. Explosives;

20. Fertilizers;

21. Fire extinguishing chemicals;

22. Food processing wastes;

23. Formaldehyde;

24. Fuels and additives;

25. Glues, adhesives, and resins;

26. Greases;

27. Hydraulic fluid;

28. Indicators;

29. Industrial and commercial janitorial supplies;

30. Industrial sludges and stillbottoms;

31. Inks, printing, and photocopying chemicals;

32. Laboratory chemicals;

33. Liquid storage batteries;

34. Medical, pharmaceutical, dental, veterinary and hospital solutions;

35. Mercury and mercury compounds;

36. Metal finishing solutions;

37. Oils;

38. Paints, primers, thinners, dyes, stains, wood preservatives, varnishing and cleaning compounds;

39. Painting solvents;

40. Pesticides and herbicides;

41. Photo development chemicals;

42. Plastic resins, plasticizers and catalysts;

43. Poisons;

44. Polishes;

45. Polychlorinated biphenyls (PCBs);

46. Pool chemicals;

47. Processed dust and particulates;

48. Radioactive sources;

49. Reagents and standards;

50. Refrigerants;

51. Roofing chemicals and sealers;

52. Sanitizers, disinfectants, bactericides, and algaecides;

53. Soaps, detergents and surfactants;

54. Solders and fluxes;

55. Stripping compounds;

56. Tanning industry chemicals;

57. Transformer and capacitor oils and fluids;

58. Wastewater;

59. Water and wastewater treatment chemicals. (Ord. 04-21-2009 § 1 (Appx. A, B))

APPENDIX K: Recommended Drinking Water Source Protection verbiage for Consumer Confidence Report, from 2022 going forward

"The Drinking Water Source Protection Plan for West Point City is available for your review. It contains information about source protection zones, potential contamination sources and management strategies to protect our drinking water. Our wells draw from deep aquifers where susceptibility to contamination is low. In addition to the natural barrier of deep aquifers, the City has developed management strategies to help protect our sources from contamination. Residents and businesses play a significant role in preventing potential contamination of drinking water. Please visit <Drinking Water Source Protection webpage address> for more information regarding source protection and what you can do to help protect the quality of drinking water at the source."