

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED

NOV 03 2015

DEPARTMENT OF
WATER RESOURCES

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATIONPermit No. 63-34034

1. Owner City of Meridian Phone No. 208-898-5500
Current address Parks & Rec. Dept., 33 E. Broadway, Ste 206, Meridian, ID 83642-2619
2. Examiner's name Peter Cooper, P.E. (Examiner 15-155) EXAM DATE October 8, 2015
3. Accompanied by Mike Barton Email mbarton@meridiantcity.org
Address same as above
Relationship to permit holder Superintendent Phone No. 208-888-3579
4. Source Ground Water tributary to _____

B. OVERLAP REVIEW

1. Other water rights with the same place of use Nampa and Meridian Irrigation District water rights
2. Other water rights with the same source and point of diversion None

C. DIVERSION AND DELIVERY SYSTEM

1. Point(s) of Diversion:

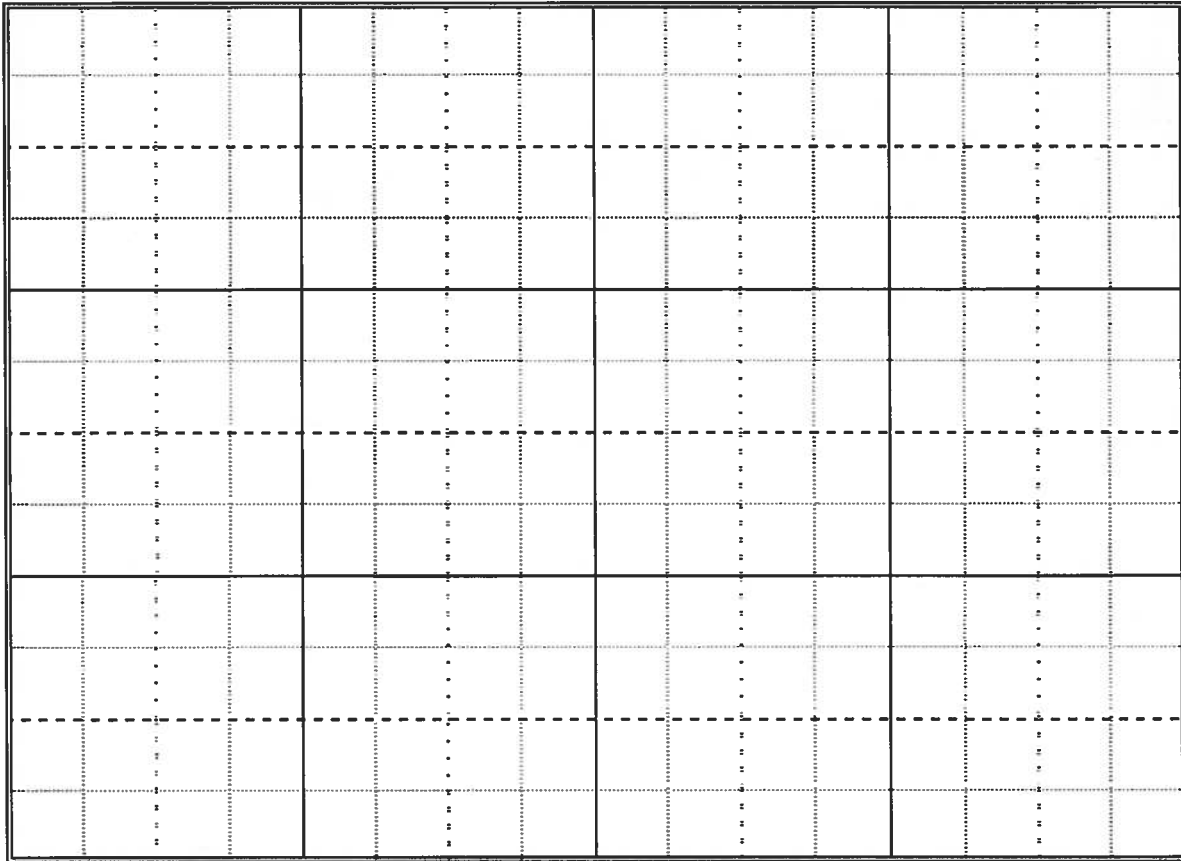
Ident. No.	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County	Method of Determination/Remarks
	4		SW	SW	7	3N	1E	Ada	2013 GIS photo, exam

2. Place(s) of Use: Method of determination 2013 GIS photo, exam

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
3N	1E	18					13	4		2									19
								L1											
							I			I									

13.5 acres irrigation within a 19 acre permissible place of use

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☒ see attached.



Scale: 1" = _____

- ☒ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (required)
☒ Aerial photo attached (required for irrigation of 10+ acres)
☒ Photo of diversion and system attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
1967 Well	unknown	u/k	submersible turbine	Johnston	6-inch discharge

*Code to correspond with no. on map and aerial photo

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Portable Flowmeter	Ultrasonic	GE	PT878	7140	various	March 30, 2015

2. **Measurements:** _____

Examiner measured 0.77 cfs from the SWSW well. The measurement of well discharge was taken on the upward angled portion of the well discharge pipeline into the vault described in E.

E. NARRATIVE/REMARKS/COMMENTS

Please see Attachment A for the narrative/remarks/comments

Attachment A: Narrative/Remarks/Comments

Attachment B: Permit and proof of beneficial use

Attachment C: Well driller's report

Attachment D: System capacity flow calculation

Attachment E: Topographical map, aerial map, and dog park map

Attachment F: Photos of place of use and well

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

Developed water bearing zone is from 1 to 80 feet.

F. FLOW CALCULATIONS☒ Additional computation sheets attached

Measured Method:

See section D.2. referencing flow determinations

Examiner measured 0.77 cfs from the well

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 13.5 \text{ acres} \times 4.5 \text{ afa/acre} = 61 \text{ afa}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 0.77 \text{ cfs}/3 \times 260 \text{ days} \times 1.9835 = 132 \text{ afa}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 61 \text{ afa}$$

2. Volume Calculations for Other Uses:

$$\text{Required: } (55 \text{ gpm} + 50 \text{ gpm} + 45 \text{ gpm} + 41 \text{ gpm}) \times 60 \text{ minutes/day} \times 2 \text{ days/week} \times 37 \text{ weeks (3/1 to 11/15)} / 325,851 \text{ gal/AF} = 2.60 \text{ afa}$$

$$\text{Potential: } (55 \text{ gpm} + 50 \text{ gpm} + 45 \text{ gpm} + 41 \text{ gpm}) / 448.83 \text{ gpm/cfs} \times 260 \text{ days} \times 1.9835 \text{ AF/24-hr cfs} = 219 \text{ afa}$$

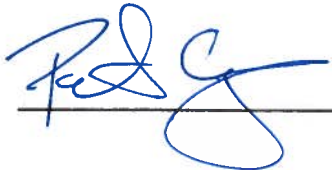
H. RECOMMENDATIONS

1. Recommended Amounts

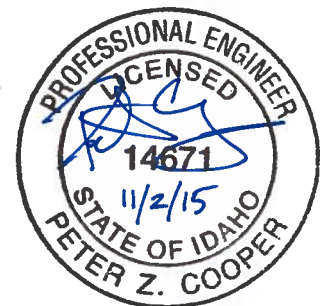
Beneficial Use	Period of Use From To		Rate of Diversion Q (cfs)	Annual Volume V (afa)
Irrigation	3/1	11/15	0.77 cfs	61 afa
Industrial	3/1	11/15	0.12 cfs	2.6 afa
Totals:			0.77 cfs	63.6 afa

2. Recommended Amendments

- ☐ Change P.D. as reflected on page 1 ☐ Add P.D. as reflected on page 1 ☐ None
☐ Change P.U. as reflected on page 1 ☐ Add P.U. as reflected on page 1 ☒ Other Licensing Amendment to Add Industrial Use

I. AUTHENTICATIONField Examiner's Signature  Date 11/2/2015

Reviewer _____ Date _____



ATTACHMENT A

FIELD EXAM SECTION E: NARRATIVE/REMARKS/COMMENTS

E. Narrative/Remarks/Comments

The place of use is known as Storey Park located in the City of Meridian. The ground water point of diversion is an existing well with a constant speed submersible pump. The well was originally constructed for drainage purposes for the City of Meridian. The well provides irrigation water to the Storey Park grounds during times when surface water from Nampa and Meridian Irrigation District is unavailable or insufficient. The well also provides industrial sanitation water for removal of pet waste from a gravel and fake turf dog park area at the south end of the park. The well is located along East 2nd Street between Ada and King Streets, and is approximately 750 feet north of the north park property boundary.

Well water is conveyed to the park property via a buried 6-inch diameter pipeline under/along 2nd Street. The well pipeline open discharges into the north side of an 8.5 feet L x 5 feet W x 6 feet D vault at a booster station used to pressurize the park's sprinkler irrigation system. Surface water from the Nampa Meridian Irrigation District is delivered into the west side of the pump vault via an 8-inch diameter PVC pipeline. The invert of the NMID pipeline is located 4 feet up from the bottom of the vault. It should be noted that NMID supply had been turned off for the season at the time of exam, so the only source of water was from the well. A drain pipe with invert 4 feet up from the bottom of the vault exits the south side of the vault and allows excess water to drain to the piped Nine Mile Drain approximately 100 feet west of the pump vault. A screen intake at the bottom of the vault feeds the booster pump station wet well. The well operation is automatically controlled to provide water when NMID water is not available or is insufficient to supply the pressure irrigation system. The 10-minute well flow rate measurement of 0.77 cfs was taken on the upward angled 6-inch PVC well open discharge pipe into the booster vault.

The booster station consists of a 25 hp vertical turbine pump controlled by VFD, paced off pressure (set point 75 psi), and a 25 hp submersible jockey pump. The booster station discharges into a 6-inch diameter steel pipeline equipped with a 6-inch Seametrics flow meter. The 6-inch discharge pipe dives into the ground just outside of the pump house and runs to supply the sprinkler irrigation system consisting of multiple zones. Multiple zones can be operated at any time either manually or automatically. A dedicated 4-inch buried pipeline branches off of the 6-inch irrigation line and runs to service a 4-zone sprinkler system at the dog park for the industrial sanitation of the gravel and fake turf areas. The 4-zone sprinkler system has individual zone capacities of 0.11 cfs, 0.12 cfs, 0.10 cfs, and 0.09 cfs. The industrial zones are normally operated one station at a time, 2 days per week.

The booster pump station was observed to have more than sufficient capacity to deliver the well water to the park's sprinkler irrigation and sanitation system. During the exam, the flow rate from the well was a limiting factor with no additional supply from NMID surface water, therefore, a full capacity 10-minute flow test could not be completed on the booster system. However, an instantaneous flow rate of 659.4 gpm at 77 psi and 53.8 Hz was observed before the wet well was drawn down too low to be operated.

It should be noted that an excessive diversion rate is permitted to allow irrigation/industrial sanitation within an eight-hour window in an effort to avoid public activities during daylight hours.

It should be noted that the dog park area was just recently completed and is not yet shown on the most recent aerial photography in Appendix E. A concept map showing the general irrigated area and gravel/fake turf areas around the dog park has been included for reference in Attachment E. The developed irrigated acreage shown on the maps in Appendix E has included the actual irrigated area in and around the new dog park area based on field observations during the exam. Photos of the dog park area can be found in Attachment F.

Please note that a licensing amendment will be required to add the industrial sanitation as a beneficial use.

Please also note that the 1967 well log shown in Attachment C mistakenly states the location of the well as SW1/4 SW1/4 Section 7, T3N, R1W. The well log should be corrected to the actual location of the well which is in the SW1/4 SW1/4 Section 7, T3N, R1E.

Based on the exam findings, permit 63-34034 is recommended to be licensed for 0.77 cfs and 13.5 acres of irrigation and 0.12 cfs of industrial sanitation within a 19 acre PPU. The total rate of diversion is limited to 0.77 cfs well pump capacity.

ATTACHMENT B

PERMIT RECORD AND PROOF OF BENEFICIAL USE

State of Idaho
Department of Water Resources
Permit to Appropriate Water

NO. 63-34034

Priority: January 29, 2015

Maximum Diversion Rate: 0.90 CFS

This is to certify, that CITY OF MERIDIAN
33 E BROADWAY STE 206
MERIDIAN ID 83642

has applied for a permit to appropriate water from:

Source: GROUND WATER

and a permit is APPROVED for development of water as follows:

BENEFICIAL USE

IRRIGATION

PERIOD OF USE

03/01 to 11/15

RATE OF DIVERSION

0.90 CFS

LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER L4 (SW1/4SW1/4) Sec. 7, Twp 03N, Rge 01E, B.M. ADA County

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
03N	01E	18	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	19
							13	4	2										
							L 1												

Total Acres: 19

CONDITIONS OF APPROVAL

1. Proof of application of water to beneficial use shall be submitted on or before **September 01, 2020**.
2. Subject to all prior water rights.
3. Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.
4. This right when combined with all other rights shall provide no more than 4.5 afa per acre at the field headgate for irrigation of the place of use.
5. This right when combined with all other rights shall not exceed a combined annual maximum diversion volume of 72 af at the field headgate for the place of use.
6. The ground water diversion rate for this right shall not exceed 0.90 cfs. Provided, further, this right when combined with all other rights shall provide no more than one (1) inch, 0.02 cfs, per acre when averaged over a twenty-four hour period based upon the amount of water applied over such twenty-four hour period. However, should the lands authorized to be irrigated under this right ever cease to be a school, park, cemetery, or golf course recognized by the Department as allowing more than one (1) inch per acre, then this right when combined will all other rights shall provide no more than one (1) inch, 0.02 cfs, per acre at the field headgate for irrigation of the place of use.
7. This right is limited to the irrigation of 16 acres within the authorized place of use in a single irrigation season.

State of Idaho
Department of Water Resources
Permit to Appropriate Water

NO. 63-34034

8. The primary surface irrigation water for the place of use authorized under this right is delivered by Nampa & Meridian Irrigation District.
9. The right holder shall make full beneficial use of all surface water rights available to the right holder for irrigation of the lands authorized to be irrigated under this right. The right holder shall limit the diversion of ground water under this right for land with an appurtenant surface water right(s) to those times when the surface water supply is not available or reasonably sufficient to irrigate the place of use authorized under this right.
10. If the surface water right(s) appurtenant to the place of use is unavailable for any reason other than drought or curtailment by priority (for example abandoned, forfeited, sold, transferred, leased, used on another place of use, or disallowed by court decree), this right to divert ground water shall not be used for irrigation purposes on the land with an appurtenant surface water right(s) without an approved transfer pursuant to Section 42-222, Idaho Code, or approval of the Department if a transfer is not required.
11. After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to use power records to determine the amount of water diverted and shall annually report the information to the Department.
12. This right does not grant any right-of-way or easement across the land of another.
13. Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department.
14. The Director retains jurisdiction to require the right holder to provide purchased or leased natural flow or stored water to offset depletion of Lower Snake River flows if needed for salmon migration purposes. The amount of water required to be released into the Snake River or a tributary, if needed for this purpose, will be determined by the Director based upon the reduction in flow caused by the use of water pursuant to this permit.

This permit is issued pursuant to the provisions of Section 42-204, Idaho Code. Witness the signature of the Director, affixed at Boise, this 24th day of August, 2015.


for GARY SPACKMAN, Director

ATTACHMENT C
WELL DRILLERS' REPORT

REPORT OF WELL DRILLER
State of Idaho

RECEIVED

State law requires that this report shall be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

FEB 28 1968

Department of Reclamation

WELL OWNER:

Name City of Meridian

Address Meridian, Idaho.

Owner's Permit No. NONE

NATURE OF WORK (check): Replacement well ☐

New well ☒ Deepened ☐ Abandoned ☐

Water is to be used for: Drainage

METHOD OF CONSTRUCTION: Rotary ☐ Cable ☒

Dug ☐ Other ☐

(explain)

CASING SCHEDULE: Threaded ☐ Welded ☐

24" "Diam. from 0 ft. to 81.6 ft.

"Diam. from ft. to ft.

"Diam. from ft. to ft.

"Diam. from ft. to ft.

Thickness of casing: Material:

Steel ☒ concrete ☐ wood ☐ other ☐

(explain)

PERFORATED? Yes ☒ No ☐ Type of

perforator used: Torch

Size of perforations: 1/4 " by 5 "

1/4 perforations from 9 ft. to 72 ft.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

WAS SCREEN INSTALLED? Yes ☐ No ☒

Manufacturer's name

Type Model No.

Diam. Slot size Set from ft. to ft.

Diam. Slot size Set from ft. to ft.

CONSTRUCTION: Well gravel packed? Yes ☒

No. ☐ size of gravel 3/8 to 3/4 Gravel

placed from 0 ft. to 72 ft. Surface seal

provided? Yes ☐ No ☐ To what depth?

 ft. Material used in seal:

Did any strata contain unusable water? Yes ☐

No. ☒ Type of water:

Depth of strata ft. Method of sealing

strata off:

Surface casing used? Yes ☐ No. ☒

Cemented in place? Yes ☐ No ☐

Locate well in section

	Sec.	

LOCATION OF WELL: County

SW * SW * Sec. 7 T. 3 N. 4 E. 1 W

Use other side for additional remarks

Size of drilled hole: 24" Total

depth of well: 80' 6" Standing water

level below ground: 5" Temp.

Fahr. Test delivery: 913 gpm

or cfs Pump? ☐ Bail ☐

Size of pump and motor used to make test:

8" Turbine

Length of time of test: 16 Hrs. Min.

Drawdown: ft. Artesian pressure: ft.

above land surface Give flow cfs

or gpm. Shutoff pressure:

Controlled by: Valve ☐ Cap ☐ Plug ☐

No control ☐ Does well leak around casing?

Yes ☐ No ☐

31798

DEPTH MATERIAL WATER YES OR NO

FEET FEET

0 15 Gravel fill

15 39 Gravel

39 50 Clay, sand layer

50 55 clean sand

55 74 Sand and clay layer

74 77 Clay

77 80 Sandy clay

Work started: Nov. 17, 1967

Work finished: Dec. 27, 1967

Well Driller's Statement: This well was drilled under my supervision and this report is true to the best of my knowledge.

Name: Witt and Sons Drilling Co.

Address: Route 4, Caldwell, Idaho.

Signed by: Kenneth Witt

License No. 55 Date: Jan. 20, 1968

USGS

WRONG

ATTACHMENT D

SYSTEM CAPACITY FLOW CALCULATION

Permit: 63-34034
Owner: City of Meridian
Site Name: SWSW Well - Storey Park
POD Location: Gov't Lot 4, T3N R1E Section 7 SWSW
Tag No: unknown
Meter: GE TransPort PT878
Type: Portable Ultrasonic Time Flight Liquid Flow Meter
Serial Number: 7140
Calibration Date: 3/30/2015
Operator: Peter Cooper, P.E.

Date/Time	Volume (gal/m)	Velocity (ft/s)	(+)Total (gal)	Error #
10/8/2015 9:57	336.9	3.69	56559.4	0
10/8/2015 9:58	358.3	3.92	56906.8	0
10/8/2015 9:59	351.7	3.85	57241.6	0
10/8/2015 10:00	337.6	3.69	57600.1	0
10/8/2015 10:01	354.9	3.88	57935.5	0
10/8/2015 10:02	357.6	3.91	58292.1	0
10/8/2015 10:03	349.1	3.82	58632.9	0
10/8/2015 10:04	358.3	3.92	58990.3	0
10/8/2015 10:05	345.9	3.79	59349.5	0
10/8/2015 10:06	340.6	3.73	59681.8	0
10/8/2015 10:07	335.8	3.67	60016.0	0

Time: 10 minutes
Total Volume 3456.6 gallons
Average Flow Rate 345.7 gpm
Average Flow Rate 0.77 cfs

ATTACHMENT E

TOPOGRAPHICAL MAP & AERIAL MAP, and DOG PARK MAP

T3N R1E

Legend

- Well Location
- NMID delivery (buried pipe)
- Well delivery (buried pipe)
- Ninemile Drain (buried pipe)
- Pressure sprinkler delivery (6-inch)
- Vault & Booster Pump
- Industrial POU
- Recommended PPU
- Developed Irrigation

L4

07

L1

NENW

18

L2

SEnw

63-34034 BUFE
Irrigation-Industrial System



0 175 350
Feet



T3N R1E

L4

07

L1

18

L2

NENW

SENE

Legend



Well Location



NMID delivery (buried pipe)



Well delivery (buried pipe)



Ninemile Drain (buried pipe)



Pressure sprinkler delivery (6-inch)



Vault & Booster Pump



Industrial POU



Recommended PPU



Developed Irrigation

63-34034 BUFE
Irrigation-Industrial System



0

175

350

Feet



SPF WATER
ENGINEERING



SITE DATA:

TOTAL SITE AREA:	106,440 SF
PROPOSED PARKING SPACES:	64
PROPOSED NEW PARKING AREA:	
- ASPHALT	1,230 LF
- CONCRETE SIDEWALK	32,200 SF
- 6' OPEN METAL FENCING	130 LF
- (WEST PERIMETER SIDE)	
- PLANTING BEDS (PARKING/BUFFER)	5,830 SF
- BUFFER LAWN AREA	43,510 SF
- SHADE TREES:	34
- ORNAMENTAL TREES:	15
- EVERGREEN TREES:	3
TOTAL PARKING LOT/BUFFER TREES:	54
TOTAL DOG AREA:	2.22 AC. (87,100 SF)
- TOTAL ARTIFICIAL TURF	5,300 SF
- TOTAL ROCK MULCH	41,810 SF
- TOTAL TURF GRASSES	35,440 SF
- SHADE TREES:	14
- ORNAMENTAL TREES:	13
- EVERGREEN TREES:	17
TOTAL TREES:	44
LARGE (ACTIVE) DOG AREA:	1.75 AC. (76,200 SF)
- ARTIFICIAL TURF	2,830 SF
- ROCK MULCH	32,440 SF
- TURF GRASSES	20,460 SF
- SHADE TREES:	14
- ORNAMENTAL TREES:	10
- EVERGREEN TREES:	14
TOTAL TREES:	38
SMALL DOG AREA:	5 AC. (213,00 SF)
- ARTIFICIAL TURF	2,430 SF
- ROCK MULCH	6,810 SF
- TURF GRASSES	17,230 SF
- SHADE TREES:	5
- ORNAMENTAL TREES:	3
- EVERGREEN TREES:	2
TOTAL TREES:	10
RESTROOMS:	
- LARGE SHELTERS:	1
- WATER FOUNTAINS:	3
- BENCHES:	3
- DOGS WASTE STATIONS:	7
- TRASH RECEPTACLES:	6
- CONCRETE PLAZA & ENTRY PATHS:	5,060 SF
- DOGS PARK 6' ASPHALT PATHWAYS:	9,630 SF
- DOGS PARK 4' ASPHALT PATHWAYS:	1,240 SF
- 6' SOLID VINYL FENCING:	610 LF
- NORTH & EAST SIDES:	
- OPEN METAL FENCING:	1,060 LF
- WEST & SOUTH SIDES + INTERIOR:	
- LENGTH OF SOFTBALL NETTING:	200'
- (AT BACK FENCE LINE)	

OPTION C

WITHOUT EXISTING PARKING
RECONSTRUCTED AND EXTENDED
PARKING AREA



STOREY PARK DOG PARK MERIDIAN, IDAHO DESIGN DEVELOPMENT

Site Planning
Landscape Architecture
600 Main Street
Meridian, ID 83448
P: (208) 341-1175
F: (208) 341-1176
www.jensenberlin.com



Issue Description Date
3/26/14

Drawn Checked
KCS KCS
Scale AS SHOWN
Sheet Title
LANDSCAPE PLAN

Sheet Number
L10
Of Sheets

ATTACHMENT F
PHOTOS OF PLACE OF USE AND WELL



Photo 1: SWSW well located in a vault in East 2nd Street. The well discharges groundwater into a 6-inch pipe to deliver water to a vault at the booster station in Storey Park.



Photo 2: Looking west at the well vault in East 2nd Street.

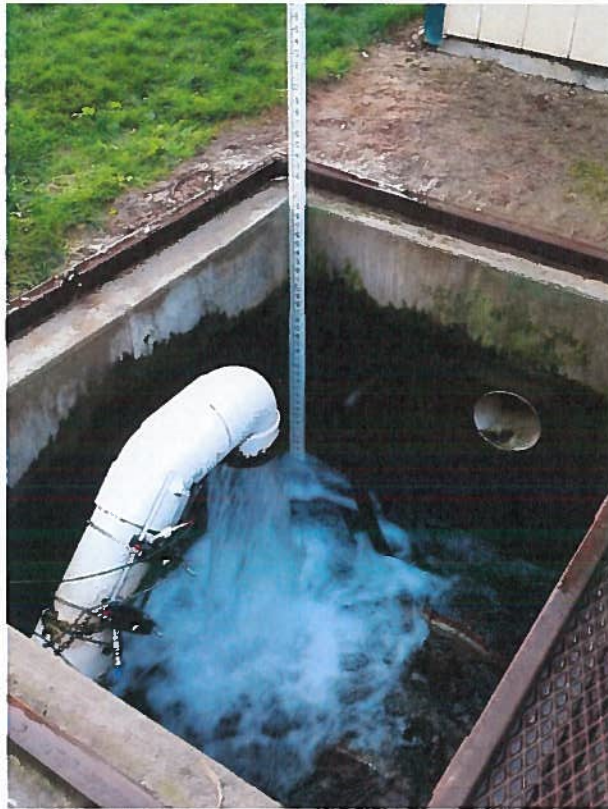


Photo 3: Looking southeast at the well discharge into the vault at the booster station in Storey Park. The 8-inch diameter overflow drain can be seen set into the south wall of the vault. The screened inlet to the booster station can be seen at the bottom of the vault just under the water surface.

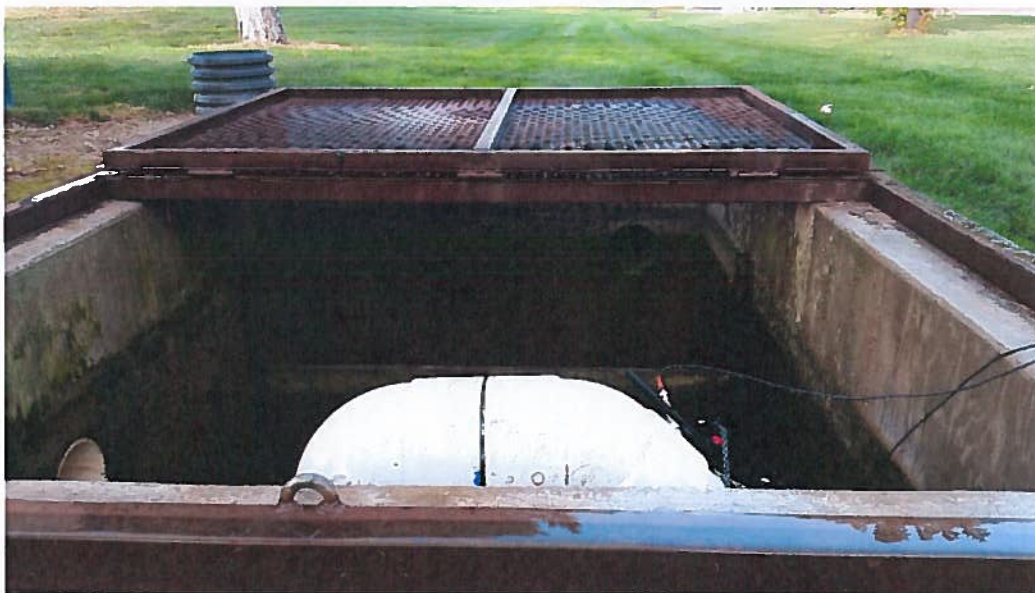


Photo 4: Looking west at the vault. The NMID 8-inch diameter delivery pipe can be seen set into the west wall of the vault.



Photo 5: Looking east from the NMID delivery box towards the booster station and vault.



Photo 6: Looking into the NMID delivery box. Notice the NMID supply pipe entering the delivery box on the right and no NMID surface water entering the booster vault delivery pipe on the left.



Photo 7: 25 hp VFD controlled vertical turbine pump inside booster station.



Photo 8: 25 hp submersible jockey pump inside booster station.



Photo 9: 6-inch steel discharge pipe exiting booster station and running underground to pressure sprinkler system.

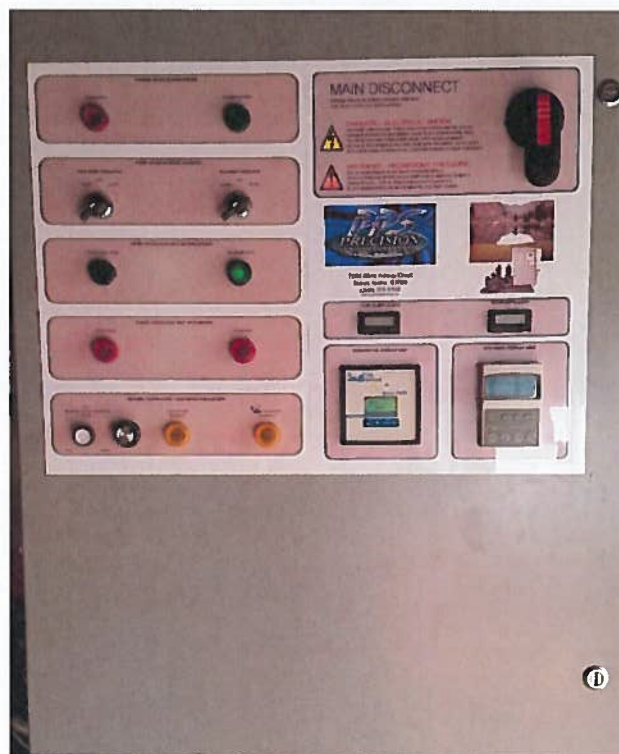


Photo 10: Booster pump VFD control panel



Photo 11: 6-inch Seametrics AG2000 flow meter showing instantaneous flow rate of 659.4 gpm.

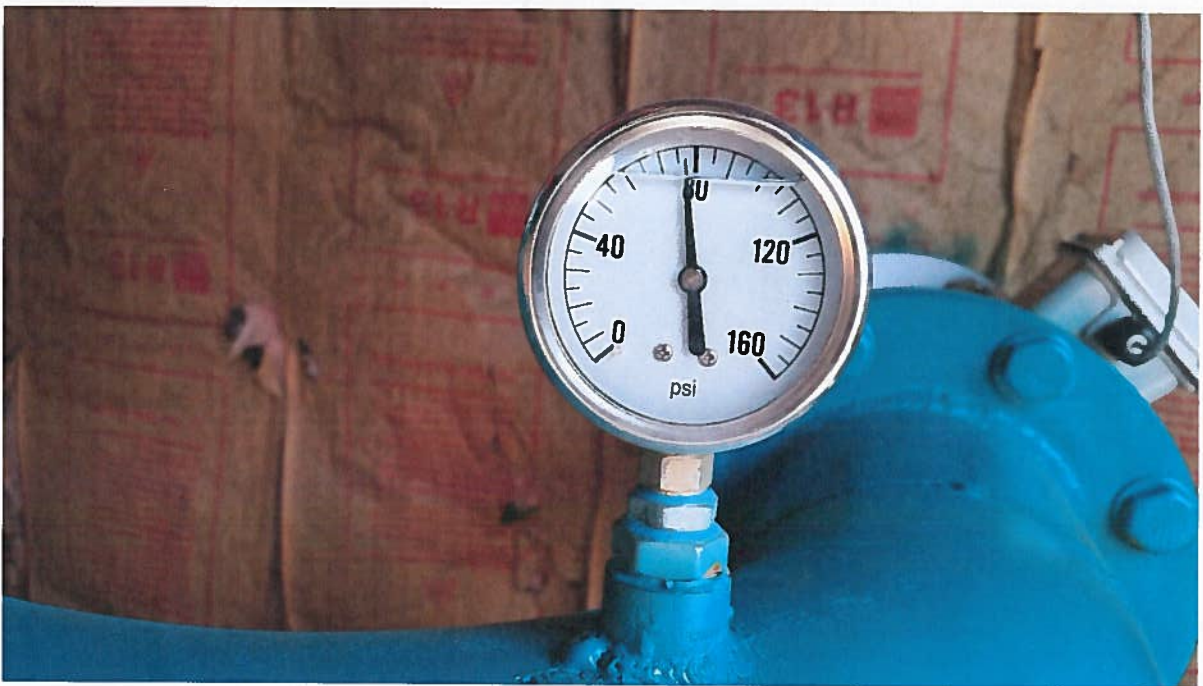


Photo 12: 77 psi discharge pressure at 659 gpm.



Photo 13: 53.8 Hz at 659 gpm and 77 psi discharge pressure. Set point for this system is 75 psi.



Photo 14: Sprinkler irrigation occurring at the northeast ball field during 659 gpm instantaneous flow measurement.



Photo 15: Additional irrigated area in the distance at the northwest corner of the park.



Photo 16: Additional irrigated at the southeast end of the park at the new dog park.



Photo 17: Additional irrigated at the southwest end of the park at the new dog park.



Photo 18: View of gravel and fake turf areas (in the background) within the dog park at the south end of the park. Industrial sanitation water is delivered to the gravel and fake turf areas for pet waste removal. Irrigated grass is also located within the dog park area and can be seen in the forefront of the picture.