

Application for a Permit to Use Ground Water



Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900
www.wrd.state.or.us

Water-Use Permit Application Processing

1. Completeness Determination

The Department evaluates whether the application and accompanying map contain all of the information required under OAR 690-310-0040 and OAR 690-310-0050 (www.oregon.gov/owrd/law). The Department also determines whether the proposed use is prohibited by statute. If the Department determines that the application is incomplete, all fees have not been paid, or the use is prohibited by statute, the application and all fees submitted are returned to the applicant.

2. Initial Review

The Department reviews the application to determine whether water is available during the period requested, whether the proposed use is restricted or limited by rule or statute, and whether other issues may preclude approval of or restrict the proposed use. An Initial Review (IR) containing preliminary determinations is mailed to the applicant. The applicant has 14 days from the mailing date to withdraw the application from further processing and receive a refund of all fees paid minus \$200. The applicant may put the application on hold for up to 180 days and may request additional time if necessary.

3. Public Notice

Within 7 days of the mailing of the initial review, the Department gives public notice of the application in the weekly notice published by the Department at www.oregon.gov/owrd. The public comment period is 30 days from publication in the weekly notice.

4. Proposed Final Order Issued

The Department reviews any comments received, including comments from other state agencies related to the protection of sensitive, threatened or endangered fish species. Within 60 days of completion of the IR, the Department issues a Proposed Final Order (PFO) explaining the proposed decision to deny or approve the application. A PFO proposing approval of an application will include a draft permit, and may request additional information or outstanding fees required prior to permit issuance.

5. Public Notice

Within 7 days of issuing the PFO, the Department gives public notice in the weekly notice. Notice includes information about the application and the PFO. Protest must be received by the Department within 45 days after publication of the PFO in the weekly notice. Anyone may file a protest. The protest filing fee is \$350.00 for the applicant and \$700.00 for non-applicants. Protests are filed on approximately 10% of Proposed Final Orders. If a protest is filed, the Department will attempt to settle the protest but will schedule a contested case hearing if necessary.

6. Final Order Issued

If no protests are filed, the Department issues a Final Order consistent with the PFO. If the application is approved, a permit is issued that specifies the details of the authorized use, any permit limitations or conditions that the Department deems appropriate.

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Minimum Requirements Checklist

Minimum Requirements (OAR 690-310-0040, OAR 690-310-0050 & ORS 537.615)

Include this checklist with the application

Check that each of the following items is included. The application will be returned if all required items are not included. If you have questions, please call the Water Rights Customer Service Group at (503) 986-0900.

- ☒ SECTION 1: applicant information and signature
- ☒ SECTION 2: property ownership
- ☒ SECTION 3: well development
- ☒ SECTION 4: water use
- ☒ SECTION 5: water management
- ☒ SECTION 6: storage of groundwater in a reservoir
- ☒ SECTION 7: use of stored groundwater from the reservoir
- ☒ SECTION 8: project schedule
- ☒ SECTION 9: within a district
- ☒ SECTION 10: remarks

Attachments:

- ☒ Land Use Information Form with approval and signature (*must be an original*) or signed receipt
- ☒ Provide the legal description of: (1) the property from which the water is to be diverted, (2) any property crossed by the proposed ditch, canal or other work, and (3) any property on which the water is to be used as depicted on the map. Example: A copy of the deed, land sales contract or title insurance policy.
- ☒ Fees - Amount enclosed: \$1,750 or \$2,200 if submitted with Recording Fee.
See the Department's Fee Schedule at www.oregon.gov/owrd or call (503) 986-0900.

Provide a map and check that each of the following items is included:

- ☒ Permanent quality and drawn in ink
- ☒ Even map scale not less than 4" = 1 mile (example: 1" = 400 ft, 1" = 1320 ft, etc.)
- ☒ North Directional Symbol
- ☒ Township, Range, Section, Quarter/Quarter, Tax Lots
- ☒ Reference corner on map
- ☒ Location of each well, and/or dam if applicable, by reference to a recognized public land survey corner (distances north/south and east/west). Each well must be identified by a unique name and/or number.
- ☒ Indicate the area of use by Quarter/Quarter and tax lot clearly identified
- ☒ Number of acres per Quarter/Quarter and hatching to indicate area of use if for primary irrigation, supplemental irrigation, or nursery
- ☐ Location of main canals, ditches, pipelines or flumes (if well is outside of the area of use)
- ☐ Other _____

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WATER RESOURCES DEPT
SALEM, OREGON

Application for a Permit to Use Ground Water



Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
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www.wrd.state.or.us

SECTION 1: APPLICANT INFORMATION AND SIGNATURE

Applicant Information

NAME KIPRIAN TIPIKIN AND ANNA TIPIKIN			PHONE (HM) 503-266-2661	
PHONE (WK)		CELL 503-504-5126		FAX
ADDRESS 31900 SOUTH DRYLAND ROAD				
CITY MOLALLA	STATE OR	ZIP 97038	E-MAIL* COUNTRYSIDEACRESLLC@GMAIL.COM	

Organization Information

NAME NA			PHONE		FAX
ADDRESS					CELL
CITY	STATE	ZIP	E-MAIL*		

Agent Information -- The agent is authorized to represent the applicant in all matters relating to this application.

AGENT / BUSINESS NAME GREG KUPILLAS/PACIFIC HYDRO-GEOLOGY INC			PHONE 503-632-5016		FAX
ADDRESS 18487 S VALLEY VISTA ROAD					CELL 503-939-3167
CITY MULINO	STATE OR	ZIP 97042-8741	E-MAIL* PHGGEK@BCTONLINE.COM		

Note: Attach multiple copies as needed

* By providing an e-mail address, consent is given to receive all correspondence from the department electronically. (paper copies of the final order documents will also be mailed.)

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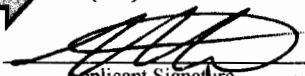
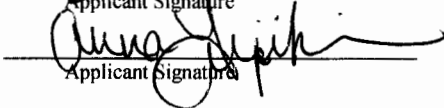
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By my signature below I confirm that I understand:

- I am asking to use water specifically as described in this application.
- Evaluation of this application will be based on information provided in the application.
- I cannot use water legally until the Water Resources Department issues a permit.
- Oregon law requires that a permit be issued before beginning construction of any proposed well, unless the use is exempt. Acceptance of this application does not guarantee a permit will be issued.
- If I get a permit, I must not waste water.
- If development of the water use is not according to the terms of the permit, the permit can be cancelled.
- The water use must be compatible with local comprehensive land-use plans.
- Even if the Department issues a permit, I may have to stop using water to allow senior water-right holders to get water to which they are entitled.

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 I (we) affirm that the information contained in this application is true and accurate.


Applicant Signature

Applicant Signature

Kiprian Tipikin
Print Name and title if applicable

Anna Tipikin
Print Name and title if applicable

5-3-16
Date

5-3-16
Date

For Department Use

App. No. G48299 Permit No. _____ Date _____

SECTION 2: PROPERTY OWNERSHIP

Please indicate if you own all the lands associated with the project from which the water is to be diverted, conveyed, and used.

☒ Yes

- ☐ There are no encumbrances.
- ☐ This land is encumbered by easements, rights of way, roads or other encumbrances.

☐ No

- ☐ I have a recorded easement or written authorization permitting access.
- ☐ I do not currently have written authorization or easement permitting access.
- ☐ Written authorization or an easement is not necessary, because the only affected lands I do not own are state-owned submersible lands, and this application is for irrigation and/or domestic use only (ORS 274.040).
- ☐ Water is to be diverted, conveyed, and/or used only on federal lands.

List the names and mailing addresses of all affected landowners (*attach additional sheets if necessary*).

NA

You must provide the legal description of : 1. The property from which the water is to be diverted, 2. Any property crossed by the proposed ditch, canal or other work, and 3. Any property on which the water is to be used as depicted on the map.

SECTION 3: WELL DEVELOPMENT

WELL NO.	NAME OF NEAREST SURFACE WATER	IF LESS THAN 1 MILE:	
		DISTANCE TO NEAREST SURFACE WATER	ELEVATION CHANGE BETWEEN NEAREST SURFACE WATER AND WELL HEAD
Proposed Well 1	Bear Creek	4,430 feet	25 feet
Proposed Well 2	Bear Creek	4,000 feet	15 feet

Please provide any information for your existing or proposed well(s) that you believe may be helpful in evaluating your application. For existing wells, describe any previous alteration(s) or repair(s) not documented in the attached well log or other materials (*attach additional sheets if necessary*).

Attached are well logs for well CLAC 64676 and CLAC 62624. Both wells are owned by the applicant and are within the same section as the proposed point(s) of appropriation. It is anticipated that the construction of proposed well(s) will be similar to CLAC 64676.

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SECTION 3: WELL DEVELOPMENT, CONTINUED

Total maximum rate requested: 1.66 CFS*(See Section 10: Remarks) (each well will be evaluated at the maximum rate unless you indicate well-specific rates and annual volumes in the table below).

The table below must be completed for each source to be evaluated or the application will be returned. If this is an existing well, the information may be found on the applicable well log. (If a well log is available, please submit it in addition to completing the table.) If this is a proposed well, or well-modification, consider consulting with a licensed well driller, geologist, or certified water right examiner to obtain the necessary information.

OWNER'S WELL NAME OR NO.	PROPOSED	EXISTING	WELL ID (WELL TAG) NO.* OR WELL LOG ID**	FLOWING ARTESIAN	CASING DIAMETER	CASING INTERVALS (IN FEET)	PERFORATED OR SCREENED INTERVALS (IN FEET)	SEAL INTERVALS (IN FEET)	MOST RECENT STATIC WATER LEVEL & DATE (IN FEET)	PROPOSED USE			
										SOURCE AQUIFER***	TOTAL WELL DEPTH	WELL- SPECIFIC RATE (GPM)	ANNUAL VOLUME (ACRE-FEET)
Proposed Well 1	☒	☐	TBD	☐	10" – 12"	0-170	170-470	0-135	NA	Alluvium	470'	TBD	2.5 AF/Acre
Proposed Well 2	☒	☐	TBD	☐	10" – 12"	0-170	170-470	0-135	NA	Alluvium	470'	TBD	2.5 AF/Acre

Note: The above table shows estimates based on existing well logs. Actual construction will be based on conditions encountered in the field upon well construction. The objective is to construct a well that develops water from the same water-bearing zones within the alluvial aquifer as encountered in CLAC 64676..

* Licensed drillers are required to attach a Department-supplied Well Tag, with a unique Well ID or Well Tag Number to all new or newly altered wells. Landowners can request a Well ID for existing wells that do not have one. The Well ID is intended to serve as a unique identification number for each well.

** A well log ID (e.g. MARI 1234) is assigned by the Department to each log in the agency's well log database. A separate well log is required for each subsequent alteration of the well.

*** Source aquifer examples: Troutdale Formation, gravel and sand, alluvium, basalt, bedrock, etc.

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SECTION 4: WATER USE

USE	PERIOD OF USE	ANNUAL VOLUME (ACRE-FEET)
Irrigation	March 1 through October 31	2.5 AF/Acre

Exempt Uses: Please note that 15,000 gallons per day for single or group **domestic** purposes and 5,000 gallons per day for a single **industrial or commercial** purpose are exempt from permitting requirements.

For irrigation use only:

Please indicate the number of primary and supplemental acres to be irrigated (*must match map*).

Primary: 37.4 Acres

Supplemental: NA Acres

List the Permit or Certificate number of the underlying primary water right(s): None

Indicate the maximum total number of acre-feet you expect to use in an irrigation season: 2.5 AF/Acre

- If the use is **municipal or quasi-municipal**, attach **Form M**

- If the use is **domestic**, indicate the number of households: n

If the use is **mining**, describe what is being mined and the method(s) of extraction: NA

SECTION 5: WATER MANAGEMENT

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A. Diversion and Conveyance

What equipment will you use to pump water from your well(s)?

☒ Pump (give horsepower and type): Once the Well(s) is fully developed an appropriate pump will be determined.

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SALEM, OREGON

☐ Other means (describe): _____

Provide a description of the proposed means of diversion, construction, and operation of the diversion works and conveyance of water. Once the well(s) is developed the appropriate length, size and type of mainlines and laterals will be determined.

B. Application Method

What equipment and method of application will be used? (e.g., drip, wheel line, high-pressure sprinkler)
The applicant will apply water using a Nelson 200 Series Big Gun with a 1.2 or 1.3 size nozzle.

C. Conservation

Please describe why the amount of water requested is needed and measures you propose to: prevent waste; measure the amount of water diverted; prevent damage to aquatic life and riparian habitat; prevent the discharge of contaminated water to a surface stream; prevent adverse impact to public uses of affected surface waters.

Water will be applied to crops when needed. The most water efficient method of irrigation will be used for the crop being irrigated.

SECTION 6: STORAGE OF GROUND WATER IN A RESERVOIR

If you would like to store ground water in a reservoir, complete this section (*if more than one reservoir, reproduce this section for each reservoir*).

Reservoir name: NA Acreage inundated by reservoir: NA

Use(s): NA

G-18279

Volume of Reservoir (acre-feet): NA Dam height (feet, if excavated, write "zero"): NA

*Note: If the dam height is greater than or equal to 10.0' above land surface **AND** the reservoir will store 9.2 acre feet or more, engineered plans and specifications must be approved prior to storage of water.*

SECTION 7: USE OF STORED GROUND WATER FROM THE RESERVOIR

If you would like to use stored ground water from the reservoir, complete this section (*if more than one reservoir, reproduce this section for each reservoir*).

Annual volume (acre-feet): NA

USE OF STORED GROUND WATER	PERIOD OF USE
NA	

SECTION 8: PROJECT SCHEDULE

Date construction will begin: Within five years from date of permit issuance.

Date construction will be completed: Within five years from date of permit issuance.

Date beneficial water use will begin: Within five years from date of permit issuance.

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SECTION 9: WITHIN A DISTRICT

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☐ Check here if the point of diversion or place of use are located within or served by an irrigation or other water district.

Irrigation District Name	Address	
City	State	Zip

SECTION 10: REMARKS

Use this space to clarify any information you have provided in the application (*attach additional sheets if necessary*).

The applicant understands the proposed rate of 1.66 CFS exceeds the standard 1/80 CFS/Acre. ORS 537.624 (4) states:

In establishing the flow rate and duty of water allowed, the department may consider a general basin-wide standard, but first shall evaluate information submitted by the applicant to demonstrate the need for a flow rate and duty higher than the general standard. If the applicant provides such information, the department shall authorize the requested rate and duty except upon specific findings related to the application to support a determination that a lesser amount is needed. If the applicant does not provide information to demonstrate the need for a flow rate and duty higher than the general basin-wide standard, the department may apply the general standards without specific findings related to the application.

Below is a description of the proposed application method which demonstrates the need for a flow rate higher than the general standard. This is based on the existing system used for water right Certificate 89195 located directly south of the proposed new use.

Proposed Application Method:

Water will be delivered to the proposed place of use with a Nelson 200 Series Big Gun which will have a nozzle size of 1.2-inch or 1.3-inch. Both will run at 130 PSI. The 1.2-inch nozzle will deliver 1.08 CFS and the 1.3-inch nozzle delivers 1.66 CFS.

Attached is Nelson's table that shows rate information at various pressures with different nozzle sizes that confirms the applicant's proposed system and need for the proposed rate rather than the standard rate. Please note, the standard duty of 2.5 AF/Acre will meet the applicant's needs, therefore this application does not request a greater duty.

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WATER RESOURCES DEPT
SALEM, OREGON

G-18289

Revised 3/4/2010

Ground Water/8

WR

Land Use Information Form



Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900
www.wrd.state.or.us

Applicant: Kip Tipikin
First Last

Mailing Address: 31900 South Dryland Road

Molalla Oregon 97038
City State Zip

Daytime Phone: 503-504-5126

A. Land and Location

Please include the following information for all tax lots where water will be diverted (taken from its source), conveyed (transported), and/or used or developed. Applicants for municipal use, or irrigation uses within irrigation districts may substitute existing and proposed service-area boundaries for the tax-lot information requested below.

Township	Range	Section	¼ ¼	Tax Lot #	Plan Designation (e.g., Rural Residential/RR-5)	Water to be:	Proposed Land Use:
5S	1E	11	NWSE	5 1E 11 1000	EFU	☒ Diverted ☒ Conveyed ☒ Used	Irrigation Use

List all counties and cities where water is proposed to be diverted, conveyed, and/or used or developed:

Clackamas County

B. Description of Proposed Use

Type of application to be filed with the Water Resources Department:

- ☒ Permit to Use or Store Water ☐ Water Right Transfer ☐ Permit Amendment or Ground Water Registration Modification
☐ Limited Water Use License ☐ Allocation of Conserved Water ☐ Exchange of Water

Source of water: ☐ Reservoir/Pond ☒ Ground Water ☐ Surface Water (name) _____

Estimated quantity of water needed: 0.47 ☒ cubic feet per second ☐ gallons per minute ☐ acre-feet

Intended use of water: ☒ Irrigation ☐ Commercial ☐ Industrial ☐ Domestic for _____ household(s)
☐ Municipal ☐ Quasi-Municipal ☐ Instream ☐ Other

Briefly describe:

The applicant proposes to appropriate up to 0.47 cfs of water from 2 proposed wells for irrigation use on 37.4 a

Note to applicant: If the Land Use Information Form cannot be completed while you wait, please have a local government representative sign the receipt at the bottom of the next page and include it with the application filed with the Water Resources Department.

See bottom of Page 3. →

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WATER RESOURCES DEPT
SALEM, OREGON

G-18299

Revised 3/4/2010

Ground Water/2

WR

For Local Government Use Only

The following section must be completed by a planning official from each county and city listed unless the project will be located entirely within the city limits. In that case, only the city planning agency must complete this form. This deals only with the local land-use plan. Do not include approval for activities such as building or grading permits.

Please check the appropriate box below and provide the requested information

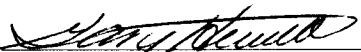
- ☒ Land uses to be served by the proposed water uses (including proposed construction) are allowed outright or are not regulated by your comprehensive plan. Cite applicable ordinance section(s): 401. OF ZDO.
- ☐ Land uses to be served by the proposed water uses (including proposed construction) involve discretionary land-use approvals as listed in the table below. (Please attach documentation of applicable land-use approvals which have already been obtained. Record of Action/land-use decision and accompanying findings are sufficient.) **If approvals have been obtained but all appeal periods have not ended, check "Being pursued."**

Type of Land-Use Approval Needed (e.g., plan amendments, rezones, conditional-use permits, etc.)	Cite Most Significant, Applicable Plan Policies & Ordinance Section References	Land-Use Approval:	
		☐ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued
		☐ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued
		☐ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued
		☐ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued
		☐ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued

Local governments are invited to express special land-use concerns or make recommendations to the Water Resources Department regarding this proposed use of water below, or on a separate sheet.

FOR KIP TIPIKIN - T. 5S, R. 1E, SECTION 11, TAX LOT 1000.

Name: GARY HEWITT, SR. PLANNER

Signature:  Phone: 503-742-4519 DATE: 4.20.16

Government Entity: CLACKAMAS COUNTY

Note to local government representative: Please complete this form or sign the receipt below and return it to the applicant. If you sign the receipt, you will have 30 days from the Water Resources Department's notice date to return the completed Land Use Information Form or WRD may presume the land use associated with the proposed use of water is compatible with local comprehensive plans.

Receipt for Request for Land Use Information

Applicant name: _____ **RECEIVED**

City or County: _____ Staff contact: _____

Signature: _____ Phone: _____ Date: MAY 18 2016

WATER RESOURCES DEPT
SALEM, OREGON

RECORDING REQUESTED BY:
 **Fidelity National Title**
 Company of Oregon

12817 SE 93rd Avenue
 Clackamas, OR 97016

Clackamas County Official Records
 Sherry Hall, County Clerk

2016-007842

02/10/2016 09:39:02 AM

D-D Cnt=1 Sln=4 JANIS
 \$20.00 \$16.00 \$10.00 \$22.00

\$68.00

Esrow No.: 45141600808

GRANTOR'S NAME:

Rosemarie Elze Revocable Living Trust dated February 14,
 2011 and Hans Elze Revocable Living Trust dated February
 14, 2011

GRANTEE'S NAME:

Kiprian Tipkin and Anna Tipkin

SEND TAX STATEMENTS TO:

Kiprian Tipkin and Anna Tipkin
 31900 S Dryland Rd.
 Molalla, OR 97038

AFTER RECORDING RETURN TO:

Kiprian Tipkin and Anna Tipkin
 31900 S Dryland Rd.
 Molalla, OR 97038

01072957 and 51E11/01000

51E11 01000 01072957, Molalla, OR 97038

SPACE ABOVE THIS LINE FOR RECORDER'S USE

STATUTORY WARRANTY DEED

Rosemarie Elze and Hans Elze, Trustees of the Rosemarie Elze Revocable Living Trust dated February 14, 2011
 and Hans Elze and Rosemarie Elze, Trustees of the Hans Elze Revocable Living Trust dated February 14, 2011,
 Grantor, conveys and warrants to

Kiprian Tipkin and Anna Tipkin, as tenants by the entirety, Grantee, the following described real property, free
 and clear of encumbrances except as specifically set forth below, situated in the County of Clackamas, State of
 Oregon:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

THE TRUE AND ACTUAL CONSIDERATION FOR THIS CONVEYANCE IS TWO HUNDRED FIFTY-FIVE
 THOUSAND AND NO/100 DOLLARS (\$255,000.00). (See ORS 93.030).

Subject to:

The Land has been classified as EFU Farmland, as disclosed by the tax roll. If the Land becomes disqualified,
 said Land may be subject to additional taxes and/or penalties.

Rights of the public to any portion of the Land lying within S Dryland Road and S Hwy 211.

Easement(s) for the purpose(s) shown below and rights incidental thereto as set forth in a document

Entitled: Easement, including the terms and provisions thereof,
 In favor of: Canby Telephone Association, an Oregon corporation
 Purpose: Communications site easement and reasonable access
 Recording Date: May 5, 2003
 Recording No: 2003-058307

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 SALEM, OREGON

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE
 SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305
 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17,
 CHAPTER 865, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010, THIS
 INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN
 VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING
 THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH
 THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND
 BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR
 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON
 LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.830, AND TO INQUIRE
 ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND
 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND
 17, CHAPTER 865, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

Fidelity National Title of Oregon 45141600808-07

G1-18299

STATUTORY WARRANTY DEED
(continued)

IN WITNESS WHEREOF, the undersigned have executed this document on the date(s) set forth below.

Dated: 1-27-16

Rosemarie Elze Revocable Living Trust dated February 14, 2011

BY: Rosemarie Elze
Rosemarie Elze, Trustee

BY: Hans Elze
Hans Elze, Trustee

Hans Elze Revocable Living Trust dated February 14, 2011

BY: Hans Elze
Hans Elze, Trustee

BY: Rosemarie Elze
Rosemarie Elze, Trustee

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WATER RESOURCES DEPT
SALEM, OREGON

G-10299

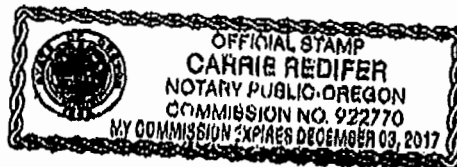
STATUTORY WARRANTY DEED
(continued)

State of OREGON
County of CLACKAMAS

This instrument was acknowledged before me on January 27, 2016 by Rosemarie Elze and Hans Elze, Trustees of the Rosemarie Elze Revocable Living Trust dated February 14, 2011 and Hans Elze and Rosemarie Elze, Trustees of the Hans Elze Revocable Living Trust dated February 14, 2011,

Carrie Redifer

Notary Public - State of Oregon
My Commission Expires: 12.3.17



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SALEM, OREGON

Q-10199

EXHIBIT "A"
Legal Description

The Northwest quarter of the Southeast quarter of Section 11, Township 5 South, Range 1 East of the Willamette Meridian, in the County of Clackamas and State of Oregon.

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WATER RESOURCES DEPT
SALEM, OREGON

G-10299

CLAC 64676

Westerberg Drilling, Inc.
36728 S. Kropf Rd.
Molalla, OR 97038

STATE OF OREGON
 WATER SUPPLY WELL REPORT
 (as required by ORS 537.765)

WELL ID. # L 93401

START CARD # 196281

Instructions for completing this report are on the last page of this form.

(1) LAND OWNER Well Number 2
 Name Stefan (Kip) Tipikin
 Address 31900 S. Dryland Rd.
 City Molalla State OR Zip 97038

(2) TYPE OF WORK ☒ New Well
☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment ☐ Conversion

(3) DRILL METHOD
☐ Rotary Air ☐ Rotary Mud ☒ Cable ☐ Auger ☐ Cable Mud
☐ Other

(4) PROPOSED USE
☐ Domestic ☐ Community ☐ Industrial ☒ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION Special Construction: ☐ Yes ☒ No
 Depth of Completed Well 476 ft.
 Explosives used: ☐ Yes ☒ No Type _____ Amount _____

BORE HOLE			SEAL			Sacks or Pounds
Diameter	From	To	Material	From	To	
24"	0	20	Bentonite	0	21	34 sacks
23"	20	74	Cement	21	135	144 sacks
20"	74	135				
16"	135	476				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☒ Other Bentonite placed dry

Backfill placed from _____ ft. to _____ ft. Material _____
 Gravel placed from 94 ft. to 476 ft. Size of gravel 6-9 css

(6) CASING/LINER

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing: 16"	+1	169	.375	☒	☐	☒	☐
*10"	+1	476	.250	☒	☐	☒	☐
*except screen (see #7)				☐	☐	☐	☐
Liner:				☐	☐	☐	☐

Drive Shoe used ☐ Inside ☒ Outside ☐ None
 Final location of shoe(s) 476' cut off

(7) PERFORATIONS/SCREENS
☐ Perforations Method _____
☒ Screens Type V-wire Material stainless

From	To	Slot Size	Number	Diameter	Tele/pipes size	Casing	Liner
171	194	.060		10"	PS	☐	☐
268	294	.060		10"	PS	☐	☐
340.6	352	.060		10"	PS	☐	☐
391	397.5	.065		10"	PS	☐	☐
412	443	.066		10"	PS	☐	☐
459.5	468	.065		10"	PS	☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
800	167'		1 hr.
800	185'		4 hr.
800	207'		8 hr.

Temperature of water 57 Depth Artesian Flow Found _____
 Was a water analysis done? ☐ Yes By whom No
 Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____
 Depth of strata: _____

(9) LOCATION OF WELL (legal description)

County Clackamas
 Tax Lot 1100 Lot _____
 Township 5 S Range 1 E WM
 Section 11 SW 1/4 SE 1/4
 Lat _____ " or _____ (degrees or decimal)
 Long _____ " or _____ (degrees or decimal)

Street Address of Well (or nearest address) adjacent to 31900 S. Dryland Rd
Molalla, OR 97038

(10) STATIC WATER LEVEL

93 ft. below land surface. Date 4-30-08
 _____ ft. below land surface. Date _____
 Artesian pressure _____ lb. per square inch Date _____

(11) WATER BEARING ZONES

Depth at which water was first found 21'

From	To	Estimated Flow Rate	SWL
174	467	800 gpm	93'

(12) WELL LOG

Material	From	To	SWL
Topsoil	0	1	
Clay brown	1	10	
Clay, cobbles & gravel	10	46	
Clay tan	46	49	
Clay brown sandy	49	52	
Gravel w/ clay brown	52	54	
Clay brown w/ occasional gravel	54	67	
Clay brown	67	102	
Clay grey	102	114	
Sand brown cemented	114	123	
Clay grey soft w/ streaks of sand	123	137	
Sand cemented grey	137	144	
Clay grey	144	156	
Clay green/blue	156	162	
Clay grey sandy	162	174	

continued on page 2
 Date Started 1-14-08 Completed 4-28-08

(unbonded) Water Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported are to the best of my knowledge and belief.

WWC Number _____ Date MAY 18 2016

Signed _____

(bonded) Water Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 688 Date 5-2-08

Signed Stefan M. Stahl

ORIGINAL - WATER RESOURCES DEPARTMENT MAY 07 2008 FIRST COPY - CONSTRUCTOR

SECOND COPY - CUSTOMER

06/16/2004

WATER RESOURCES DEPT
SALEM, OREGON

G-18299

WELL ADDRESS	COUNTY	TOWNSHIP	RANGE	SECTION	1/4	1/4	TAX LOT
adjacent to 31900 S. Dryland Rd.	Clackamas	5S	1E	11	SW	SE	1100

G-18299

STATE OF OREGON
WATER SUPPLY WELL REPORT
 (as required by ORS 537.765)

(1) OWNER:

Well Number: _____

Name: Tipikin Farms
 Address: 39100 S Dryland Rd
 City: Molalla State: OR Zip: 97038

(2) TYPE OF WORK: (repair/
☒ New Well ☐ Deepening ☐ Alteration/recondition ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☒ Rotary Mud ☐ Cable ☐ Auger
☐ Other: _____

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☒ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☒ Other test

(5) BORE HOLE CONSTRUCTION:
 Special Construction approval ☒ Yes ☐ No
 Depth of Completed Well 648
 Explosives Used ☐ Yes ☒ No Type _____ Amount _____

HOLE			SEAL			sacks or pounds
Diameter	From	To	Material	From	To	
18	0	651	cement	0	335	223 bags

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other _____

Backfill placed from _____ to _____ Material _____
 from _____ to _____ Material _____
 Gravel placed from _____ to _____ Size of gravel _____

(6) CASING/LINER:**CASING:**

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
12	1	335	.250	☒	☐	☒	☐
10	330	648	.250	☒	☐	☒	☐
				☐	☐	☐	☐
				☐	☐	☐	☐

LINER:

				☐	☐	☐	☐
				☐	☐	☐	☐

Final location of Shoe(s): _____

(7) PERFORATIONS/SCREENS:

☐ Perforations Method: _____
☒ Screen Type: _____ Material: _____

From	To	Slot Size	No.	Diameter	Tele/pipe size	Casing	Liner
335	350	55		10	p	☒	☐
380	410	55		10	p	☒	☐
425	445	55		10	p	☒	☐
580	595	55		10	p	☒	☐
633	648	55		10	p	☒	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian
 Yield gpm Drawdown Drill Stem at Time

150	460		1 hr.

Temperature of water 54 Depth Artesian Flow Found _____

Was a water analysis done? _____ By whom: _____

Did any strata contain water not suitable for intended use? (explain)

Depth of Strata: _____

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AUG 15 2006

WATER RESOURCES DEPT
 SALEM, OREGON

WELL ID # L 81978
 START CARD # 168714

(9) LOCATION OF WELL by legal description:

County: clackamas Latitude: _____ Longitude: _____
 Township: 5S Range: 1E
 Section: 11 SW $\frac{1}{4}$ SE $\frac{1}{4}$
 Tax Lot: 1300 Lot: _____ Block: _____ Subdivision: _____
 Street Address of Well (or nearest address) same as mailing

(10) STATIC WATER LEVEL:

119 Ft. below land surface Date 12-30-05
 Artesian pressure _____ lb. per sq. in. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found _____

From	To	Est. Flow Rate	SWL
335	648	150	119

(12) WELL LOG:

Ground Elevation: _____

Material	From	To	SWL
soil	0	3	
clay brn sticky	3	17	
cobbles large loose	17	42	
conglomt mix med brn	42	69	
conglomt small red brn	69	77	
clay yellow brn	77	96	
brn sandy	96	116	
grey blue silty	116	130	
clay brn soft	130	152	
clay sandy grey	152	170	
clay sticky	170	200	
clay sandy grey	200	220	
clay sticky grey	220	238	
clay sandy grey	238	260	
sticky grey blue	260	341	
sandy grey blue	341	350	
clay sticky blue grey	350	385	
sandy grey	385	390	
sandy blue silty	390	428	
conglomt sand med small	428	441	
clay gry blue sticky	441	580	
sandy cly grey	580	585	
clay sticky grey	585	640	
sandy conglomt med and wood mix	640	648	
clay grey sticky	648	651	
basalt hard blk	651	TD	

Date Started: 3-10-05Completed: 2-10-06**(unbonded) Water Well Constructor Certification:**

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

Signed _____

WWC Number 723Date 3-1-06**(bonded) Water Well Constructor Certification:**

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

Signed _____

WWC Number 723
MAY 1 2006

WATER RESOURCES DEPT
 SALEM, OREGON

G-18299

BIG GUN® PERFORMANCE (U.S. UNITS)

Flow and diameter (feet) information at various pressures with different nozzle sizes. (See information at bottom of page 11.)

75 TAPER RING NOZZLE — 24° TRAJECTORY

PSI	0.4"		0.45"		0.5"		0.55"		0.6"		0.65"		0.7"		0.75"		0.8"	
	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.
25*	—	—	—	—	—	—	42	146	50	155	59	161	69	167	80	174	91	182
30*	—	—	—	—	37	158	45	158	55	165	64	172	75	182	87	187	99	192
35	—	—	32	154	40	164	49	172	59	178	69	191	81	196	93	202	106	208
40	27	149	35	160	43	171	52	180	63	190	74	198	87	204	98	213	112	221
45	29	155	37	167	46	180	56	189	67	198	79	206	91	214	104	223	118	230
50	30	161	39	174	48	186	59	195	70	203	83	212	95	220	109	230	123	237
55	32	165	41	179	50	193	62	203	74	213	87	221	100	230	115	239	130	247
60	33	169	42	184	53	198	64	208	77	220	91	228	104	237	120	245	136	254
65	35	172	44	189	55	205	67	216	80	227	95	237	109	247	125	254	142	263
70	36	175	45	194	57	210	69	221	83	232	98	243	113	254	129	260	147	270
75	37	179	47	201	59	217	72	228	86	239	101	250	117	261	134	268	153	277
80	39	182	49	207	61	222	74	234	89	244	105	256	121	266	138	274	158	283

*Operating at pressures above 30 PSI provides better performance.

100 TAPER BORE NOZZLE — 24° TRAJECTORY

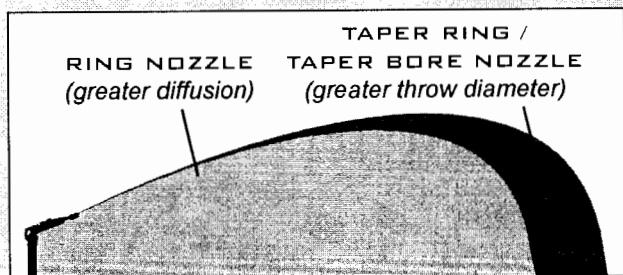
PSI	0.5"		0.55"		0.6"		0.65"		0.7"		0.75"		0.8"		0.85"		0.9"		1.0"	
	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.
40	47	191	57	202	66	213	78	222	91	230	103	240	118	250	134	256	152	262	—	—
50	50	205	64	215	74	225	87	235	100	245	115	256	130	265	150	273	165	280	204	300
60	55	215	69	227	81	240	96	250	110	260	126	270	143	280	164	288	182	295	224	316
70	60	225	75	238	88	250	103	263	120	275	136	283	155	295	177	302	197	310	243	338
80	64	235	79	248	94	260	110	273	128	285	146	295	165	305	189	314	210	325	258	354
90	68	245	83	258	100	270	117	283	135	295	155	306	175	315	201	326	223	335	274	362
100	72	255	87	268	106	280	123	293	143	305	163	316	185	325	212	336	235	345	289	372
110	76	265	92	278	111	290	129	303	150	315	171	324	195	335	222	344	247	355	304	380

150 TAPER BORE NOZZLE — 24° TRAJECTORY

PSI	0.7"		0.8"		0.9"		1.0"		1.1"		1.2"		1.3"		1.4"	
	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.
50	100	250	130	270	165	290	205	310	255	330	300	345	350	360	408	373
60	110	265	143	285	182	305	225	325	275	345	330	365	385	380	446	396
70	120	280	155	300	197	320	245	340	295	360	355	380	415	395	483	412
80	128	290	165	310	210	335	260	355	315	375	380	395	445	410	516	427
90	135	300	175	320	223	345	275	365	335	390	405	410	475	425	547	442
100	143	310	185	330	235	355	290	375	355	400	425	420	500	440	577	458
110	150	320	195	340	247	365	305	385	370	410	445	430	525	450	605	471
120	157	330	204	350	258	375	320	395	385	420	465	440	545	460	632	481

200 TAPER BORE NOZZLE — 27° TRAJECTORY

PSI	1.05"		1.1"		1.2"		1.3"		1.4"		1.5"		1.6"		1.75"		1.9"	
	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.	GPM	DIAM. FT.
60	250	345	285	355	330	375	385	390	445	410	515	430	585	445	695	470	825	495
70	270	360	310	380	355	395	415	410	480	430	555	450	630	465	755	495	890	515
80	290	375	330	395	380	410	445	430	515	450	590	470	675	485	805	515	950	535
90	310	390	350	410	405	425	475	445	545	465	625	485	715	505	855	535	1005	555
100	325	400	370	420	425	440	500	460	575	480	660	500	755	520	900	550	1060	575
110	340	410	390	430	445	450	525	470	605	495	695	515	790	535	945	565	1110	590
120	355	420	405	440	465	460	545	480	630	505	725	530	825	550	985	580	1160	605
130	370	425	425	445	485	465	565	485	655	515	755	540	860	560	1025	590	1210	620



See opposite page for nozzle descriptions.

RING
NOZZLE

TAPER BORE
NOZZLE

TAPER/RING
NOZZLE



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MAY 18 2016

BIG GUN® PERFORMANCE (METRIC)

Flow and diameter (meters) information at various pressures with different nozzle sizes. (See information at bottom of page.)

75 TAPER RING NOZZLE TR75 — 24° TRAJECTORY

Kg/cm²	10.2 mm			11.4 mm			12.7 mm			14.0 mm			15.2 mm			16.5 mm			17.8 mm			19.1 mm			20.3 mm		
	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M
1.75*	—	—	—	—	—	—	—	—	—	2.64	9.5	44	3.17	11.4	48	3.72	13.4	49	4.30	15.5	51	4.91	17.7	54	5.59	20.1	56
2.00*	—	—	—	—	—	—	2.33	8.4	48	2.82	10.2	48	3.39	12.2	51	3.98	14.3	52	4.59	16.5	56	5.25	18.9	58	5.97	21.5	59
2.50	—	—	—	2.11	7.6	47	2.61	9.4	50	3.16	11.4	53	3.79	13.6	55	4.45	16.0	58	5.14	18.5	60	5.87	21.1	62	6.68	24.0	64
3.00	1.83	6.6	47	2.32	8.3	50	2.86	10.3	53	3.46	12.4	57	4.15	14.9	59	4.88	17.6	61	5.63	20.3	63	6.43	23.1	66	7.32	26.3	69
3.50	1.98	7.1	49	2.50	9.0	52	3.09	11.1	57	3.74	13.4	60	4.48	16.1	62	5.27	19.0	64	6.08	21.9	67	6.95	25.0	70	7.90	28.4	73
4.00	2.11	7.6	50	2.67	9.6	54	3.30	11.9	59	3.99	14.4	62	4.79	17.2	65	5.63	20.3	67	6.50	23.4	71	7.43	26.7	73	8.45	30.4	76
4.50	2.24	8.1	52	2.84	10.2	57	3.50	12.6	62	4.24	15.2	66	5.08	18.3	68	5.97	21.5	71	6.89	24.8	75	7.88	28.4	78	8.96	32.3	80
5.00	2.36	8.5	53	2.99	10.8	60	3.69	13.3	64	4.46	16.1	68	5.35	19.3	70	6.30	22.7	74	7.26	26.1	78	8.30	29.9	80	9.45	34.0	84
5.50	2.48	8.9	55	3.13	11.3	62	3.87	13.9	66	4.68	16.9	70	5.61	20.2	73	6.60	23.8	77	7.62	27.4	81	8.71	31.3	83	9.90	35.7	86
6.00	2.59	9.3	56	3.27	11.8	63	4.04	14.6	68	4.89	17.6	72	5.86	21.1	74	6.90	24.8	79	7.96	28.6	84	9.09	32.7	85	10.3	37.2	87

*Operating at pressures above 2 Kg/cm² provides better performance.

100 TAPER BORE NOZZLE — 24° TRAJECTORY

Kg/cm²	12.7 mm			14.0 mm			15.2 mm			16.5 mm			17.8 mm			19.1 mm			20.3 mm			21.6 mm			22.9 mm			25.4 mm		
	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M
3.0	3.00	10.8	59.5	3.73	13.4	62.6	4.33	15.6	66.1	5.09	18.3	66.8	5.84	21.0	71.4	6.71	24.1	74.5	7.64	27.5	77.5	8.74	31.5	79.5	9.67	34.8	81.4	11.9	42.8	88.1
4.0	3.40	12.2	64.3	4.25	15.3	67.8	5.00	18.0	71.8	5.86	21.1	74.8	6.82	24.6	77.8	7.73	27.8	81.0	8.66	31.2	82.8	10.1	36.2	86.4	11.2	40.4	88.6	13.8	49.5	94.8
5.0	3.79	13.6	69.0	4.72	17.0	72.7	5.59	20.1	76.4	6.56	23.6	80.2	7.62	27.5	84.4	8.66	31.2	86.7	9.91	34.9	90.4	11.3	40.5	92.5	12.5	45.2	94.7	15.5	55.6	103
6.0	4.17	15.0	73.4	5.14	18.5	77.3	6.12	22.1	80.7	7.19	25.9	85.0	8.35	30.1	88.7	9.51	34.3	91.8	10.9	38.2	94.7	12.4	44.5	97.7	13.7	49.5	101	16.8	60.5	109
7.0	4.53	16.3	77.6	5.52	19.9	81.6	6.61	23.8	85.0	7.75	27.9	89.3	9.02	32.5	93.0	10.3	37.0	96.1	11.7	41.3	99.0	13.3	48.0	102.2	14.8	53.5	105	18.2	65.5	113
8.0	4.89	17.6	81.7	5.84	21.0	85.7	7.07	25.5	89.3	8.25	29.7	93.1	9.64	34.8	97.3	11.0	39.4	99.7	12.5	44.1	103	14.2	51.2	105.8	15.9	57.2	109	19.5	70.2	116

150 TAPER BORE NOZZLE — 24° TRAJECTORY

	17.8 mm				20.3 mm				22.9 mm				25.4 mm				27.9 mm				30.5 mm				33.0 mm				35.6 mm			
Kg/cm²	L/S	MPH	DIAM. M		L/S	MPH	DIAM. M		L/S	MPH	DIAM. M		L/S	MPH	DIAM. M		L/S	MPH	DIAM. M		L/S	MPH	DIAM. M		L/S	MPH	DIAM. M					
3.5	6.39	23.0	76.0		8.29	29.8	82.0		10.5	37.8	88.0		13.0	46.9	95.0		15.9	57.1	101		19.0	68.3	105		22.3	80.1	110		25.8	92.9	114	
4.0	6.83	24.6	79.6		8.86	31.9	85.6		11.2	40.4	91.6		13.9	50.1	97.8		16.9	61.0	104		20.3	73.0	109		23.8	85.7	114		27.4	98.6	118	
5.0	7.63	27.5	85.4		9.91	35.7	91.6		12.6	45.2	98.6		15.6	56.0	105		18.9	68.2	111		22.7	81.7	117		26.6	95.8	121		30.8	111	126	
6.0	8.36	30.1	89.7		10.9	39.1	96.7		13.8	49.5	104		17.0	61.3	110		20.8	74.7	117		24.9	89.5	123		29.1	105	128		33.6	121	133	
7.0	9.03	32.5	95.0		11.7	42.2	101		14.9	53.5	108		18.4	66.3	114		22.4	80.7	122		26.8	96.6	128		31.5	113	134		36.4	131	139	
8.0	9.66	34.8	99.3		12.5	45.1	105		15.9	57.2	112		19.7	70.8	118		24.0	86.3	126		28.7	103	132		33.7	121	138		38.9	140	145	
9.0	10.2	36.9	104		13.3	47.9	110		16.8	60.6	117		20.9	75.1	123		25.4	91.5	131		30.4	110	137		35.7	129	143		41.1	148	149	

200 TAPER BORE NOZZLE — 27° TRAJECTORY

Kg/cm²	26.7 mm			27.9 mm			30.5 mm			33.0 mm			35.6 mm			38.1 mm			40.6 mm			44.5 mm			48.3 mm		
	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M	L/S	MPH	DIAM. M
4.0	15.5	55.7	104	17.8	63.9	106	20.3	73.1	112	23.8	85.8	117	27.5	98.9	123	32.2	116	129	36.1	130	134	42.9	154	141	50.7	183	149
5.0	17.3	62.3	111	19.9	71.5	117	22.7	81.7	121	26.7	96.0	126	30.7	111	132	36.0	130	138	40.3	145	143	48.0	173	152	56.7	204	158
6.0	19.0	68.2	115	21.8	78.3	121	24.9	89.5	126	29.2	105	132	33.7	121	138	39.4	142	144	44.2	159	149	52.6	189	158	62.1	224	164
7.0	20.5	73.7	122	23.5	84.6	128	26.9	96.7	134	31.5	114	140	36.3	131	146	42.6	153	152	47.7	172	159	56.8	204	168	67.1	241	175
8.0	21.9	78.8	126	25.1	90.4	132	28.7	103	138	33.7	121	144	38.9	140	152	45.5	164	159	51.0	184	165	60.7	218	174	71.7	258	182
9.0	23.2	83.6	130	26.6	95.9	136	30.4	110	142	35.8	129	148	41.2	148	157	48.3	174	164	54.1	195	170	64.4	232	180	76.0	274	188

Diameters are based on a 24° trajectory for the 75, 100 and 150 Series and a 27° trajectory for the 200 Series. The lower trajectory angles result in better wind fighting ability, but reduced throw distances. Throw reduction depends upon nozzle flow rate. In general, the throw distance is reduced approximately 3% with each 3° drop in trajectory angle. Use of the wedge insert to modify trajectory will affect distance. Big Gun® performance data has been obtained under ideal test conditions and may be adversely affected by wind, poor hydraulic entrance conditions or other factors. Test riser height of 3 feet (0.91 meters) above measurement surface. No representation regarding droplet condition, uniformity, application rate, or suitability for a particular application is made herein.

Additional nozzle options and sizes available. Go to www.nelsonirrigation.com or contact the factory for nozzle performance.

TAPER BORE NOZZLE. Most common nozzle type. Used where the available water flow and pressure are consistent. A nozzle size must be specified when ordering a Big Gun with a Taper Bore Nozzle. *The Nozzle Valve End Gun requires a Taper Bore Nozzle.*

RING NOZZLE SET. The Ring Nozzle Set is an easy and economic way of changing nozzles to match the available water flow and pressure. These are commonly used where the available water flow and pressure are variable and or when the Big Gun is shifted between various water sources with different capacities. The abrupt orifice of the nozzle is less so the radius of throw is less than that achieved with an equivalent diameter Taper Bore nozzle. The abrupt orifice of the Ring Nozzle does break the stream of water up more, which can be an advantage in low pressure applications. The Ring Nozzle comes with a set of rings. *The Ring Nozzle should not be used with the Nozzle Valve End Gun.*

TAPER RING NOZZLE. This nozzle combines the changeability of a Ring Nozzle with some of the efficiency of a Taper Bore Nozzle. When ordering the Taper Ring Nozzle, specify the size as only one Taper Ring comes with the nozzle body and cap. Additional taper ring sizes can be purchased. *The Taper Ring Nozzle should not be used with the Nozzle Valve End Gun.*

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