

# **MEMO**

To:

Kristopher Byrd, Well Construction and Compliance Section Manager

From:

Joel Jeffery, Well Construction Program Coordinator,

**Subject:** 

Review of Water Right Application G-18802

Date:

April 9, 2019

The attached application was forwarded to the Well Construction and Compliance Section by Water Rights. Phil Marcy reviewed the application. Please see Phil's Groundwater Review and the Well Log.

Applicant's Well # 1 (MALH 54279): Based on a review of the Well Report, Applicant's Well # 1 appears to protect the groundwater resource.

The construction of Applicants Well # 1 may not satisfy hydraulic connection issues.

# **Groundwater Application Review Summary Form**

Application # G- 18802	
GW Reviewer Phil Marcy	Date Review Completed: 3/22/2019
Summary of GW Availability and Injury Review:	
[ ] Groundwater for the proposed use is either over amounts requested without injury to prior water rigl capacity of the groundwater resource per Section B	hts, OR will not likely be available within the
Summary of Potential for Substantial Interference F	Review:
[ ] There is the potential for substantial interference	per Section C of the attached review form.
Summary of Well Construction Assessment:	
[] The well does not appear to meet current well coreview form. Route through Well Construction and constru	

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations and for conditions that may be necessary for a permit (if one is issued).

## MALH 54279

STATE OF OREGON WATER SUPPLY WELL REPORT (as required by ORS 537.765 & OAR 690-205-0210)

WELL I.D. LABEL# L	114885	
START CARD#	1025754	
ORIGINAL LOG #		

(1) LAND OWNER Owner Well I.D.	1	
First Name Dale Last Name Berrett	(9) LOCATION OF WELL (legal descript	tion)
Company Berrett Ranches	County MALHEUR Twp 30 S N/S Ram	nge 44 E E/W WM
Address 3540 Highway 95	Sec 27 SE 1/4 of the NW 1/4 To	
City Jordan Valley State OR Zip 97910	Tax Map Number Lo	ot
(2) TYPE OF WORK New Well Deepening Conversion	r or 42,92339	DMS or DD
Alteration (complete 2a & 10)   Abandonment(complete 5a)	Long " or -117.3201	DMS or DD
(2a) PRE-ALTERATION Dia + From To Gauge Stl Plstc Wld Thrd	Street address of well • Nearest addr	ress
Casing:	Close to 2005 Danner Loop Rd., Jordan Valley OR 979	10
Material From To Amt sacks/lbs Seal:		
(3) DRILL METHOD	(10) STATIC WATER LEVEL	
X Rotary Air Rotary Mud Cable Auger Cable Mud		L(psi) + SWL(ft)
Reverse Rotary Other	Existing Well / Pre-Alteration  Completed Well 08-24-2015	298
		Hole?
(4) PROPOSED USE Domestic Irrigation Community		
Industrial/Commericial Livestock Dewatering	WATER BEARING ZONES Depth water was fi	
ThermalInjectionOther	SWL Date From To Est Flow S	SWL(psi) + SWL(ft)
(5) BORE HOLE CONSTRUCTION Special Standard (Attach copy	08-24-2015 328 450 300	298
Depth of Completed Well 450 ft.		
BORE HOLE SEAL sacks/		
Dia From To Material From To Amt lbs		
20 0 18 Bentonite Chips 0 200 360 S		
19 18 298 Calculated 355	1	
Calculated	(11) WELL LOG Ground Elevation 4,226	<u> </u>
	Gloding Elevation 1,225	
How was seal placed: Method A B C D E    Cother Slow pour from top	Material Topsoil	From To
Backfill placed from 200 ft. to 298 ft. Material 3/4 Bentonite Chips	Clayey Soil w/Some Rocks	1 5
Filter pack from ft. to ft. Material Size	Clayey Soil w/Some Rocks	5 18
	Conglomerate Clay & Pea Rocks	18 25
Explosives used: Yes Type Amount	Clay w/Pea Rocks	25 35
(5a) ABANDONMENT USING UNHYDRATED BENTONITE	Hard Clay w/Small Rocks	35 45
Proposed Amount Pounds Actual Amount Pounds	Hard Clay w/Small Rocks	45 80
(6) CASING/LINER	Hard Brown Clay	80 100 100 160
Casing Liner Dia + From To Gauge Stl Plstc Wld Thrd	Hard Brown Clay Hard Brown Clay	160 200
	177 179 01	200 220
	Fractured Lava Rock RECEIVED BY OM	VF29 450
	DEC. A MALE	
	UEC 0 4 2015	
Shoe X Inside Outside Other Location of shoe(s)		
Temp casing X Yes Dia 20 From 0 To 18	CALENCE	
(7) PERFORATIONS/SCREENS	SALEM, OR	
Perforations Method		
Screens Type Material	Date Started 03-11-2015 Completed C	08-24-2015
Perf/S Casing/ Screen Scrn/slot Slot # of Tele/ creen Liner Dia From To width length slots pipe size	(unbonded) Water Well Constructor Certification	
creen Liner Dia From To width length slots pipe size	I certify that the work I performed on the construction	on deepening alteration or
	abandonment of this well is in compliance with (	
	construction standards. Materials used and information	n reported above are true to
	the best of my knowledge and belief.	
	License Number Date	
(8) WELL TESTS: Minimum testing time is 1 hour		
Pump Bailer • Air Flowing Artesian	Signed	
Yield gal/min Drawdown Drill stem/Pump depth Duration (hr)	(bonded) Water Well Constructor Certification	
300 440 1	I accept responsibility for the construction, deepening	alteration, or abandonmen
	work performed on this well during the construction date	
	performed during this time is in compliance with (	
Temperature °F Lab analysis Yes By	construction standards. This report is true to the best of	
Water quality concerns? Yes (describe below) TDS amount	Signed Contact Info (optional)	<b>≻2015</b>
From To Description Amount Units	S. 91	
	Signed Dave Codamine	
	Contact Info (optional)	
ODICALA WATER RECOIDERS	DEDA DA ACATE	

### WATER RESOURCES DEPARTMENT

MEM	O							March	122	_,20_1	9
TO:		Applica	ation G	188	302		-				
FROM	1:	GW: _	Pla (Reviewe	Mer's Name	way		-				
SUBJI					ference		tion				
Ø	YES										
	NO	The sou	arce of a	appropri	ation is	within (	or above	e a Scen	ic Wate	rway	
	YES	TT .1	<b>G</b> .	XX		11.1		<b>51</b> 0			
	NO	Use the	Scenic	Waterv	vay con	dition (C	Conditio	on 7J)			
	interfe	rence w	vith sur	face wa	ndwater ater tha ributed b	t contri					
	interfe the De that t	rence w epartme he pro	ith surfacent is upposed	ace wat nable to use wi	dwater er that o o find t ll meas ee-flow	contributhat the surably	tes to a reduce	scenic prepone the s	waterwaderance	ay; then e of evi water	refore, idence
Calcula calcular	te the per	criteria in	of consum 1 390.83	iptive use 5, do noi	CE by mont fill in to is unable	he table	but checi	k the "ur	able" op	tion abo	ve, thus
Water	way by		owing an	mounts	o reduce express						Scenic use by
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

### PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO:			er Rights S					Da	te <u>03/22/2</u>	019	Date <u>03/22/2019</u>								
FROM	:	Grou	ındwater S	ection			I. Marcy ewer's Name												
SUBJE	CT:	Appl	lication G-	18802				review of			Date of Re	view(s)							
OAR 69 welfare, to determ the press	on-310-1: safety armine who umption	30 (1)  and head  ether the	The Departs Ith as descri ne presumpt a. This revie	ibed in ORS ion is establi ew is based	resume that 537.525. D shed. OAR <b>upon avail</b>	a propose epartment 690-310- able infor	ed ground staff revi 140 allow mation a	lwater use will ew groundwates the proposed and agency po	ter applicated use be milicies in p	tions u odified lace at	nder OAl d or condi t the time	R 690-31 tioned to of evalu	0-140 meet aation.						
A. GEI	NEKAL	INF	<u>ORMATIO</u>	<u> </u>	oplicant's N	lame:	Dale and	Tony Berret	t	(	county: _	Malheu	<u>r</u>						
A1.	Applica	nt(s) s	eek(s) <u>4.0</u>	cfs fror	n <u>1</u>	well(	s) in the	Owyhee					_ Basin,						
						subb	asin												
A2.	Propose	d use	Irri	gation (263.	7 acres)	Seas	onality:	March 1 <sup>st</sup> – N	<u>lovember</u>	1 <sup>st</sup> (24:	5 days)								
A3.	Well an	d aqui	fer data (att	ach and nui	mber logs f	or existin	g wells; ı	nark propose	d wells as	such	under log	gid):							
Well 1	Logic MALH 54		Applicant Well #	Proposi	ed Aquifer*	Prop Rate	(cfs)	Locatio (T/R-S Q0 30S/44E-27 S	Q-Q)	2250	tion, mete o' N, 1200' 69'E, 2302'	E fr NW	cor S 36						
2	MALII 3-	+219	1	Voic	anic Rock	4.	0	303/44L-27	JW-NL	25	0) L, 2302	51111111111	7 5 27						
3 4																			
5 * Alluvii	ım, CRB,	Bedroo	rk																
	Well	Firs			Well	Seal	Casing	Liner	Perfora	tions	Well	Draw							
Well	Elev ft msl	Wate ft bl:	er ft bls	SWL Date 08/24/2015	Depth (ft)	Interval (ft) 298	Interval (ft)		Or Scr (ft	reens	Yield (gpm)	Down (ft) NA	Test Type						
	1217	320	230.0	00/2 1/2010															
Use data	from app	lication	for proposed	l wells.															
A4.	Commo	ents: [	The propose	d POA well				to produce fro (0.67 cfs), mu					.0 cfs.						
A5. 🖾	manage (Not all	ment o	rules contai	ter hydraulion n such provi	sions.)	cted to sur	face wate	n rules relative er <b>are</b> , or <b>[</b>	⊠ are no	t, activ	ated by th	is applic	ation.						
A6. 🗌	Name o	f admi	inistrative ar	rea:				tap(s) an aqui											

Version: 05/07/2018

Date: 03/22/2019

### B. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

Bas	sed upon available data, I have determined that groundwater* for the proposed use:
a.	is over appropriated, is <b>not</b> over appropriated, <i>or</i> cannot be determined to be over appropriated during any period of the proposed use. * This finding is limited to the groundwater portion of the over-appropriation determination as prescribed in OAR 690-310-130;
b.	will not or will likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the groundwater portion of the injury determination as prescribed in OAR 690-310-130;
c.	$\square$ will not or $\square$ will likely to be available within the capacity of the groundwater resource; or
d.	will, if properly conditioned, avoid injury to existing groundwater rights or to the groundwater resource:  i.
a.	Condition to allow groundwater production from no deeper than ft. below land surface;
b.	Condition to allow groundwater production from no shallower than ft. below land surface;
c.	Condition to allow groundwater production only from the groundwater reservoir between approximately ft. and ft. below land surface;
d.	<ul> <li>Well reconstruction is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Groundwater Section.</li> <li>Describe injury —as related to water availability—that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc):</li> </ul>
aqu and	bundwater availability remarks: There is little data available for assessing the expected long-term impacts to the deeper ifer system at the proposed location. Measurements on nearby wells MALH 2394 and MALH 2389 are no longer current, are in a distinctly different elevation range from heads measured in this and nearby wells constructed to produce from the tured bedrock, which display much lower groundwater elevations.
wat	cial Condition: If a permit is issued, the permittee shall allow OWRD staff access to the POA well to conduct routine er level measurements to assess potential changes to groundwater elevation with increased use. This information will be zeed by the Department considering the issuance of further permits targeting this aquifer system in the surrounding area.
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Date: 03/22/2019

#### C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1.	690-09-040	<b>(1)</b> :	Evaluation	of aqu	uifer	confinement	t:
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Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	Fractured volcanic rock		$\boxtimes$
	v.		

Basis for aquifer confinement evaluation: The static water level reported on the driller's log is identical to the elevation of the productive aquifer, where water was first encountered.

C2. 690-09-040 (2) (3): Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than 1/4 mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Conne	lically cted? ASSUMED	Potentia Subst. In Assum YES	terfer.
1	1	Jordan Creek	3951	4232	2660	$\boxtimes$			$\boxtimes$

Basis for aquifer hydraulic connection evaluation: The elevation of surface waters within one mile and groundwater in the proposed POA well are vastly different. In addition, a thick succession of unsaturated, fine-grained material exists between the water-bearing zone in the POA well and the depth of water-bearing zones in shallower wells that exhibit heads similar to the elevation of local surface waters. These data suggest a perched aquifer system in the near-surface, utilizing the Quaternary alluvium, and likely in efficient communication with surface waters. The deeper system may reflect the existence of a regional aquifer system underlying the area, possibly incised many miles away by the Owyhee River drainage, but there is not sufficient evidence to support this at the present time.

Water Availability Basin the well(s) are located within: Owyhee R > Snake R - At Mouth (ID# 31111001)

C3a. 690-09-040 (4): Evaluation of stream impacts for each well that has been determined or assumed to be hydraulically connected and less than 1 mile from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% natural flow for the pertinent Water Availability Basin (WAB). If O is not distributed by well, use full rate for each well. Any checked \( \subseteq \) box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < 1/4 mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?

Application G-18802 Date: 03/22/2019

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells**. Otherwise same evaluation and limitations apply as in C3a above.

SV #	1	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
Comments	: This sectio	n does not	apply.						

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-Distributed		г.					7.1		C	0.	N	D
Well SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS												
Interference CFS												
Distributed Wel	ls											
Well SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	%	%	%	%	%	%	%	%	%	%	%	9
Well Q as CFS												
Interference CFS												
	%	%	%	%	%	%	%	%	%	%	%	9
Well Q as CFS												
Interference CFS												
	%	%	%	%	%	%	%	%	%	%	%	9
Well Q as CFS												
Interference CFS												
	%	%	%	%	%	%	%	%	%	%	%	9
Well Q as CFS												
Interference CFS	. У											
	%	%	%	%	%	%	%	%	%	%	%	9
Well Q as CFS												
Interference CFS												
	%	%	%	%	%	%	%	%	%	%	%	9
Well Q as CFS												
Interference CFS												
(A) = Total Interf.	T											
(B) = 80 %  Nat.  Q												
(C) = 1 % Nat. Q												
(D) = (A) > (C)		7	- V			7	,		1			- V
$(E) = (A / B) \times 100$	%	%	%	%	%	%	%	%	%	%	%	%

4

Page

Application G-18802 Date: 03/22/2019 Page 5

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	,
lb.	690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Wa Rights Section.
5.	under this permit can be regulated if it is found to substantially interfere with surface water:
	i. The permit should contain condition #(s)
	ii. The permit should contain special condition(s) as indicated in "Remarks" below;
S	W / GW Remarks and Conditions: NA.
	The state of the s
_	
_	
_	
_	
	oferences Used:
	eferences Used:  alker, G.W., Repenning, C.A., 1966. Reconnaissance geologic map of the west half of the Jordan Valley quadrangle. Malher
W	
<u>W</u> <u>C</u> c	alker, G.W., Repenning, C.A., 1966, Reconnaissance geologic map of the west half of the Jordan Valley quadrangle, Malher bunty, Oregon, Interpretive Map 457, U.S. Geological Survey, Washington, DC., map scale 1:250,000.
<u>W</u> <u>C</u> c	alker, G.W., Repenning, C.A., 1966, Reconnaissance geologic map of the west half of the Jordan Valley quadrangle, Malher punty, Oregon, Interpretive Map 457, U.S. Geological Survey, Washington, DC., map scale 1:250,000.
<u>W</u> <u>C</u> c	alker, G.W., Repenning, C.A., 1966, Reconnaissance geologic map of the west half of the Jordan Valley quadrangle, Malher bunty, Oregon, Interpretive Map 457, U.S. Geological Survey, Washington, DC., map scale 1:250,000.
<u>W</u> <u>C</u> c	alker, G.W., Repenning, C.A., 1966, Reconnaissance geologic map of the west half of the Jordan Valley quadrangle, Malhe bunty, Oregon, Interpretive Map 457, U.S. Geological Survey, Washington, DC., map scale 1:250,000.

Date: 03/22/2019

6

### D. WELL CONSTRUCTION, OAR 690-200

D1.	Well #:	Logid:
D2.	a.	ELL does not appear to meet current well construction standards based upon:  review of the well log; field inspection by
D3.	THE W	ELL construction deficiency or other comment is described as follows:
D4. [	Route t	to the Well Construction and Compliance Section for a review of existing well construction.
Water	Availabil	ity Tables
		DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION

		DETAILED REPORT	ON THE WATER AVAILA	BILITY CALCULATIO	N	
Watershed Time: 4:	d ID #: 31111001 51 PM	OWYHEE R > SNAKE R - AT MOUTH Basin: OWYHEE			Exceedance Level: 80 Date: 03/21/2019	
Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net Water Available
Monthly values are in cfs.  Storage is the annual amount at 50% exceedance in ac-ft.						
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV	264.00 636.00 736.00 1,360.00 1,190.00 518.00 298.00 230.00 170.00 156.00	714.00 1,090.00 1,440.00 1,750.00 2,210.00 1,890.00 1,500.00 1,310.00 875.00 460.00	-450.00 -453.00 -706.00 -389.00 -1,020.00 -1,370.00 -1,200.00 -1,080.00 -705.00 -304.00	0.00 79.40 380.00 459.00 79.20 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	-450.00 -532.00 -1,090.00 -848.00 -1,100.00 -1,370.00 -1,200.00 -1,080.00 -705.00 -304.00 -164.00
DEC ANN	303.00 694,000	569.00 857,000	-266.00 106,000	0.00 60,000	0.00	-266.00 45,900

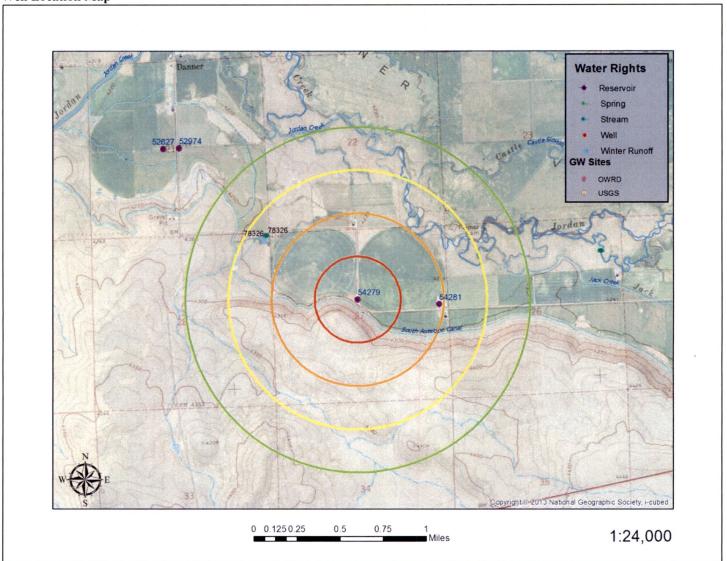
Application G-18802

Page

Date: 03/22/2019

7

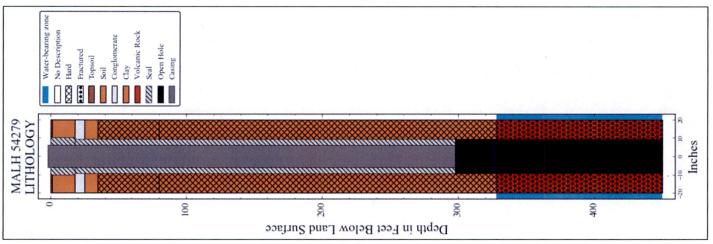
**Well Location Map** 



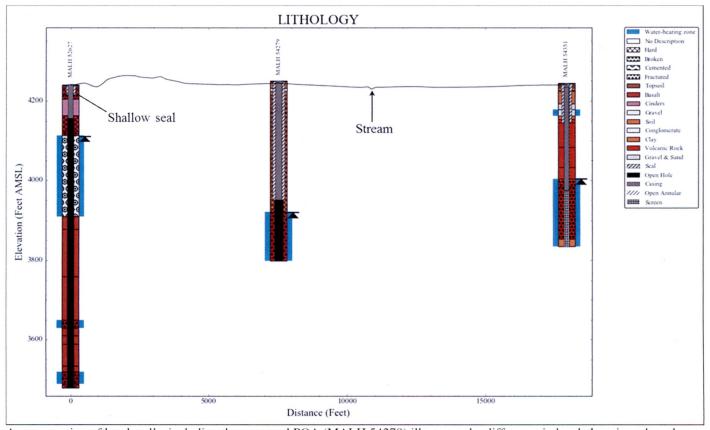
#### Water-Level Trends in Nearby Wells

No time series record exists for wells completed into the deeper aquifer system in this area.

Application G-18802 Date: 03/22/2019 Page 8



Construction/lithology diagram for the proposed POA well, displaying continuous case and seal depth of 298' BLS above the productive water-bearing zone in fractured volcanic rock.



A cross section of local wells, including the proposed POA (MALH 54279) illustrates the difference in head elevations, based upon the water-bearing zones utilized by each well. MALH 52627 produces from gravels between 126'-330' BLS, with a resulting head elevation of 4113' AMSL, whereas MALH 54351 and the proposed POA are constructed to produce solely from fractured volcanic rock at depth and report static elevations of 4003' and 3951' AMSL, respectively.