

1355 Capital Blvd. • P.O. Box 30013 • Reno, NV 89520-3013  
P 775.834.8080 • F 775.834.8003

## **Addendum No. 2**

### **INNOVATION WELL PH 1 – DRILLING AND CONSTRUCTION**

PWP Bid No. WA-2015-020  
January 23, 2015

The following information, clarifications, changes and modifications are by reference incorporated into the bid documents for the above referenced project. Any work item or contract provision not changed or modified will remain in full force and effect. The bid date and time and construction schedule remain the same.

#### **QUESTIONS AND RESPONSES**

**Question No. 1:** Work Hours – Can the contractor operate 24 hours/day and 7 days/week during drilling and well construction? 24 hour operation is preferred because it reduces the cost and duration of the project, and it reduces the risk of losing the borehole while drilling. If 24 hour operation isn't allowed, we may not be interested in bidding the project

**Response to Question No. 1:** The Contract Work hours are in the range of 7:00 a.m. to 5:30 p.m. Monday through Friday, holidays excluded per section 2.09 of the General Conditions. Work outside these hours, including regular work, overtime work, or night work shall be subject to the approval of the Project Representative, may require permitting through the City of Reno, noise abatement, lighting restrictions, or other additional measures.

**Question No. 2:** We would like some additional information on the formation we would be drilling into. Are there any drill logs from nearby wells available?

**Response to Question No. 2:** A test well was drilled in 2004 just to the north of the proposed Innovation well, and was subsequently abandoned. The location map and bore log are attached to this addendum as a reference only, and are not made a part of the Contract Documents for this project. The Contractor shall not rely on this reference information as a representation of what may or may not be expected when drilling the Innovation well. TMWA makes no representation as to the actual conditions the Contractor may encounter while drilling the Innovation well.

**Question No. 3:** Can you provide a description of the well site including dimensions?

**Response to Question No. 3:** A site map as well as a well material diagram are attached to this addendum and made a part of the Contract Documents.

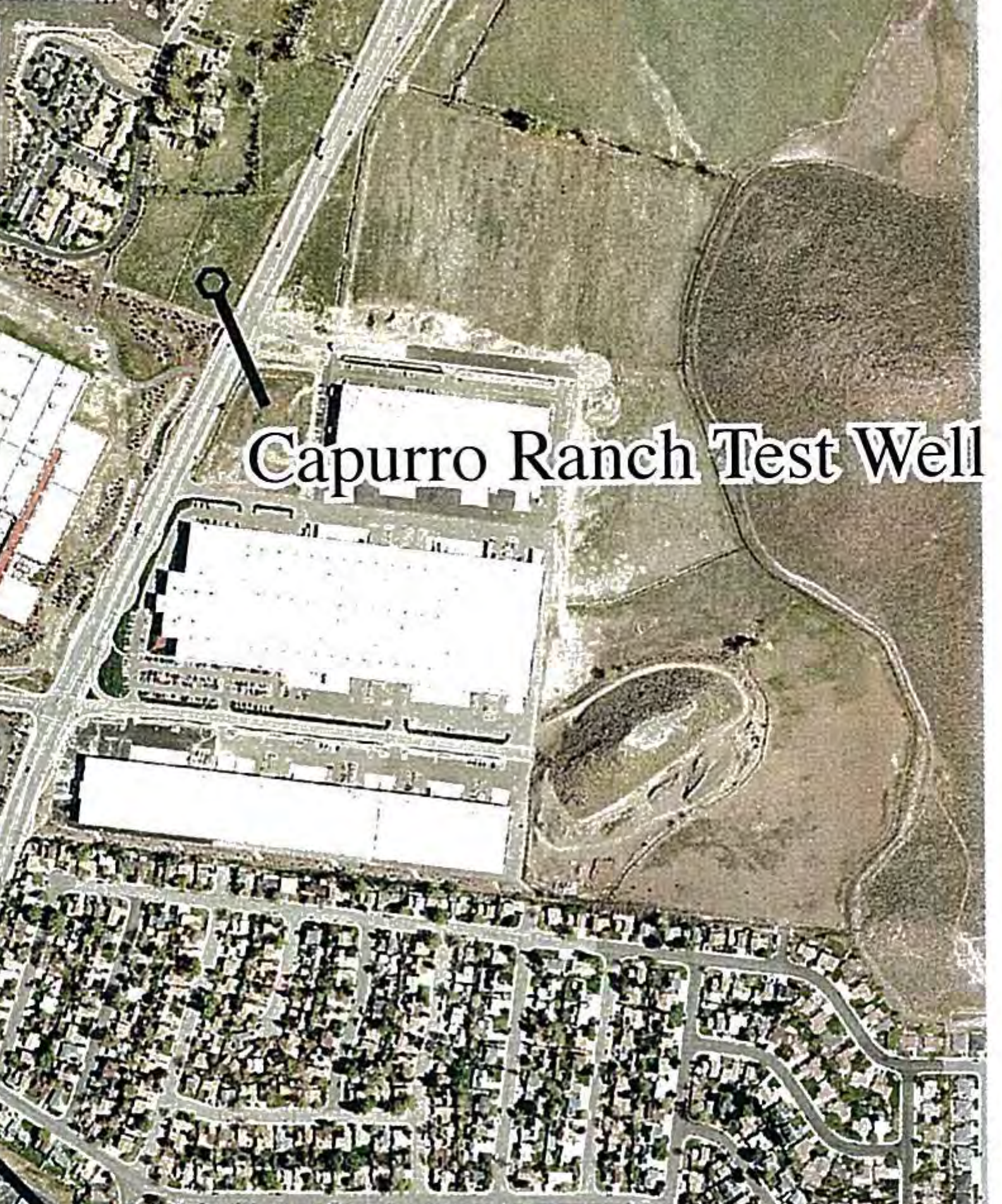
**Question No. 4:** From the specs, we will be allowed to discharge water as long as the turbidity is under 100 NTU. Is there any location to discharge water that is over 100 NTU, or will this water need to be hauled off site?

**Response to Question No. 4:** If the turbidity of the water does not meet specifications, it must either be treated to a higher level to meet specifications prior to being discharged, or hauled off site and disposed of properly.

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## Attachments



Capurro Ranch Test Well

<b>Borehole Log: Capurro Ranch</b>		<b>OWNER:</b> Truckee Meadows Water Authority (TMWA)	
<b>Project:</b> Capurro Test Well	<b>Driller:</b> Randy Criner	<b>DATE</b>	<b>TIME</b>
<b>Location:</b> Corner of Innovation and Longley Lane, Reno, Nevada		<b>Start:</b> 4/29/2004	17:00
<b>Type:</b> Test Well	<b>Rig:</b> GEFCO Star30KDH	<b>Finish:</b> 4/30/2004	12:40
<b>Coordinates:</b> N39.46498 E119.77052		<b>Drilling Method:</b> Direct Rotary	
<b>Elevation:</b> 4450' msl (appx.)		<b>Fluid:</b> Water with Bentonite Mud.	
<b>Total Depth:</b> 310'		<b>Geophysical Log:</b> Yes	
<b>Drilling Contractor:</b> WD Corp. Zamora, CA			
<b>Comments:</b>			



Depth in feet bgs	Penetration		Alteration	Rig Response (1 to 5)	Samples			Material	Circulation Mud Parameters	Fines		Clastics			Well Casing Graphic	Lithology Graphic	Description
	Start/Stop time	Penetration Rate, in feet/hr.			Sieve Sample Intervals	Water Quality Sample	Clay %			Silt %	Fine Sand %	Other Sand %	Gravel %				
4/29/04																	
10																	0 - 20' Gravelly Sand; subrounded to angular gravel of volcanic origin in fine to coarse sand.
20																	
4/30/04	7:39			2						55	10	5	30				20 - 32' Sandy Clay; fine to medium sand in reddish-brown to tan plastic clay.
30	7:46	86															
	7:46																
40	7:58	50		3						50	20	10	20				32 - 44' Gravelly Clay; angular to subrounded gravel in tan plastic clay.
	8:05																
50	8:10	120		2						40	30	20	10				44 - 58' Gravelly Sand and Clay; interbedded angular to subrounded volcanic derived gravel, fine to coarse sand and reddish-brown to tan plastic clay.
	8:10																
60	8:15	120		2						70	20	10					58 - 74' Sandy Clay; brown, tan, fine to medium sand in tan plastic clay.
	8:20																
70	8:30	60															
	8:30																
80	8:36	100		2						75	10	5	10				74 - 76' Sand; brown, fine to coarse sand.
	8:42																
90	8:51	67															76 - 98' Sandy Clay; brown, tan, fine to medium sand in tan plastic clay.
	8:51																
100	9:00	67															
	9:07																
110	9:15	75		2	1						60	35	5				98 - 116' Sand; tan, fine to coarse volcanic derived sand. Some angular to subrounded gravels.
	9:15				2												

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<b>Project:</b> Capurro Test Well	<b>Driller:</b> Randy Criner	<b>DATE</b>	<b>TIME</b>
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<b>Elevation:</b> 4450' msl (appx.)			
<b>Total Depth:</b> 310'		<b>Fluid:</b> Water with Bentonite Mud.	
<b>Drilling Contractor:</b> WD Corp. Zamora, CA		Geophysical Log: Yes	
<b>Comments:</b>			



Depth in feet bgs	Penetration		Alteration	Rig Response (1 to 5)	Samples				Fines		Clastics			Well Casing Graphic	Lithology Graphic	Description
	Start/Stop time	Penetration Rate, in feet/hr.			Sieve Sample Intervals	Water Quality Sample	Material	Circulation Mud Parameters	Clay %	Silt %	Fine Sand %	Other Sand %	Gravel %			
120	9:20 9:29	120		2	2				95	tr	tr	5			116 - 122' Gravelly Clay; subangular to subrounded volcanic derived gravel in tan plastic clay.	
130	9:35 9:35	100			3											
140	9:43 9:53	75		2	4			20	50	10	20				122 - 150' Gravelly Sand and Clay; interbedded angular to subrounded volcanic derived gravel, fine to coarse sand and reddish-brown to tan plastic clay.	
150	9:59 9:59	100			5											
160	10:07 10:13	75		4	4			15	30	25	30				150 - 158' Gravelly Sand; angular to subrounded gravel in fine to coarse sand.	
170	10:19 10:19	100		4	6			30	40	20	10				158 - 164' Clayey Sand; tan plastic clay in fine to medium sand.	
180	10:27 10:31	75		1	7				60	40					164 - 176' Sand; fine to coarse sand of volcanic origin. Medium sand is the predominant grain size.	
190	10:40 10:40	67		1	8			70	5	5	20				176 - 188' Gravelly Clay; subangular to subrounded volcanic derived gravel in tan plastic clay.	
200	10:44 10:50	150		1	9				60	20	20				188 - 198' Gravelly Sand; subangular to subrounded volcanic derived gravel in fine to coarse sand.	
210	10:56 10:56	100		1				60	15	10	15				198 - 222' Gravelly Clay; subangular to subrounded volcanic derived gravel in tan plastic clay.	
220	11:05 11:10	67		0	10			tr	60	20	20				222 - 230' Gravelly Sand; angular to subrounded gravel in fine to coarse sand.	
230	11:19	67														

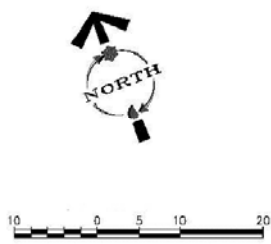
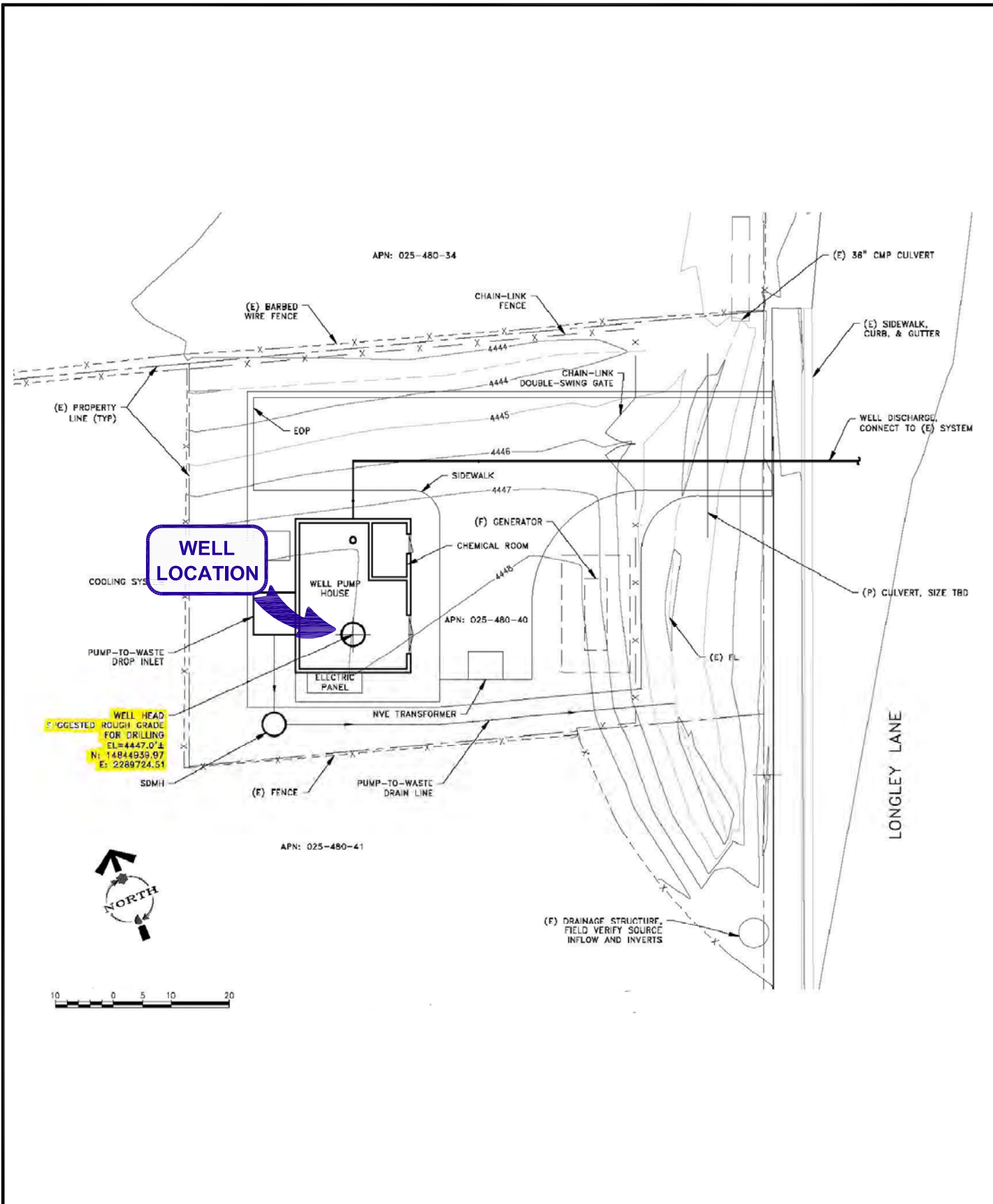
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Depth in feet bgs	Penetration		Alteration	Rig Response (1 to 5)	Samples		Material	Circulation Mud Parameters	Fines		Clastics		Well Casing Graphic	Lithology Graphic	Description
	Start/Stop time	Penetration Rate, in feet/hr.			Sieve Sample Intervals	Water Quality Sample			Clay %	Silt %	Fine Sand %	Other Sand %			
240	11:19			2	11				80	20	tr	tr			230 - 238' Silty Clay; tan silt in tan plastic clay. Rare subangular to subrounded gravels.
	11:28	67													
250	11:36			2	12						60	30	10		238 - 250' Sand; tan, fine to coarse volcanic derived sand. Rare angular to subrounded volcanic gravels.
	11:40	150								80	20	tr	tr	tr	
260	11:40				13										258 - 264' Sand; tan, fine to coarse volcanic derived sand. Rare angular to subrounded volcanic gravels.
	11:50	60		1								60	30	10	
270	11:54				13										264 - 280' Silty Clay; tan silt in tan plastic clay. Occasional angular to subrounded gravels.
	12:00	100		2						80	20	tr	tr	tr	
280	12:00				14										280 - 290' Sand; reddish-brown fine to coarse sand. Occasional angular to subrounded gravels of volcanic origin. Abundant reddish-brown oxide stain.
	12:08	75	oxide	2								60	30	10	
290	12:09				14										290 - 300' Silty Clay; tan silt in tan plastic clay.
	12:20	55		2						80	20				
300	12:20				14										300 - 304' Sand; tan to reddish-brown, fine to coarse sand.
	12:27	86		2											
310	12:34				14										304 - 310' Clay; charcoal grey to blue-grey plastic clay.
	12:40	100		2											

WELL CONSTRUCTION SUMMARY																																																																																																																																																																																																																																																																																																																																																	
<p>not to scale</p> <p>stickup = 3'</p>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2"><b>OWNER: TRUCKEE MEADOWS WATER AUTHORITY (TMWA)</b></td> <td rowspan="3" style="text-align: center; vertical-align: middle;"> </td> </tr> <tr> <td><b>PROJECT NUMBER:</b></td> <td><b>CONSULTANT:</b></td> </tr> <tr> <td><b>WELL NAME: Capurro Ranch Test Well</b></td> <td>Aqua Hydrogeologic Consulting Carson City, Nevada</td> </tr> <tr> <td><b>Project:</b> Capurro Ranch Test Well</td> <td><b>Drilling Contractor:</b></td> <td></td> </tr> <tr> <td><b>Location:</b> 6995 Longley Lane Reno, Nevada</td> <td>WD Corporation Zamora, California</td> <td></td> </tr> <tr> <td><b>Elevation:</b> 4450' msl</td> <td><b>Coordinates:</b> N 39.46498 E 119.77052</td> <td><b>Casing Stickup:</b> final 3'</td> </tr> <tr> <td colspan="3" style="text-align: center;"><b>DRILLING SUMMARY:</b></td> </tr> <tr> <td colspan="3">                 Total Depth-Borehole: <u>310'</u>                  Total Depth-Well: <u>295'</u>                  Borehole Diameter: <u>9-3/4", 0-310"; 11-7/8" 0-300'</u>                  Driller(s): Randy Criner             </td> </tr> <tr> <td colspan="3">                 Rig Type: <u>GEFCO Star 30KDH</u>                  Bit(s): <u>Tricone</u>                  Drilling Fluids: <u>Water and Bentonite Mud</u> </td> </tr> <tr> <td colspan="3">                 Conductor Casing: <u>None</u>                  Surface Seal: <u>None</u>                  Sanitary Seal: <u>None</u>                  Bentonite Seal: <u>medium chips 76-92'</u> </td> </tr> <tr> <td colspan="3" style="text-align: center;"><b>WELL DESIGN:</b></td> </tr> <tr> <td colspan="3">                 Basis: Geologic Log <span style="float: right;">YES</span>                  Geophysical Log <span style="float: right;">YES</span>                  Camera Survey <span style="float: right;">NO</span> </td> </tr> <tr> <td colspan="3">                 Casing Material: <u>6-5/8" O.D., 0.25" wall mild steel</u>                  Casing String(s): <u>C=Casing S=Screen</u> </td> </tr> <tr> <td colspan="3"> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>stick up</th> <th>- +3'</th> <th>- 0</th> <th>Length</th> </tr> </thead> <tbody> <tr> <td>C1</td> <td>+3</td> <td>97</td> <td>100'</td> </tr> <tr> <td>S1</td> <td>97</td> <td>147</td> <td>50'</td> </tr> <tr> <td>C1</td> <td>147</td> <td>158</td> <td>11'</td> </tr> <tr> <td>S1</td> <td>158</td> <td>198</td> <td>40'</td> </tr> <tr> <td>C1</td> <td>198</td> <td>219</td> <td>21'</td> </tr> <tr> <td>S1</td> <td>219</td> <td>249</td> <td>30'</td> </tr> <tr> <td>C1</td> <td>249</td> <td>260</td> <td>11'</td> </tr> <tr> <td>S1</td> <td>260</td> <td>270</td> <td>10'</td> </tr> <tr> <td>C1</td> <td>270</td> <td>280</td> <td>10'</td> </tr> <tr> <td>S1</td> <td>280</td> <td>290</td> <td>10'</td> </tr> <tr> <td>C1</td> <td>290</td> <td>295</td> <td>5'</td> </tr> </tbody> </table> </td> </tr> <tr> <td colspan="3">                 Screen: <u>S1 - .080 Slot, quad-perforated mill slotted, A53 Grade A Type E, 6-5/8" OD mild steel Spiral welded.</u> </td> </tr> <tr> <td colspan="3">                 Centralizers: <u>every 60' beginning 5' above well bottom</u> </td> </tr> <tr> <td colspan="3">                 Casing: <u>Unperforated A53 Grade A Type E, 6-5/8" OD mild steel</u> </td> </tr> <tr> <td colspan="3">                 Bentonite: <u>Medium bentonite chip seal in annulus from 76' to 92'.</u> </td> </tr> <tr> <td colspan="3">                 Filter Pack: <u>RMC Coarse Aquarium from from 300' to 92'</u> </td> </tr> <tr> <td colspan="3">                 Surface Casing: <u>No surface casing installed in this temporary test well.</u> </td> </tr> <tr> <td colspan="3">                 Cement: <u>No cement seal placed in this temporary well installation.</u> </td> </tr> <tr> <td colspan="3" style="text-align: center;"><b>CONSTRUCTION TIME LOG:</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>Task</b></td> <td colspan="2" style="text-align: center;"><b>Total Time</b></td> <td colspan="2" style="text-align: center;"><b>Start</b></td> <td colspan="2" style="text-align: center;"><b>Finish</b></td> </tr> <tr> <td colspan="2"></td> <td style="text-align: center;"><b>Date</b></td> <td style="text-align: center;"><b>Time</b></td> <td style="text-align: center;"><b>Date</b></td> <td style="text-align: center;"><b>Time</b></td> <td colspan="2"></td> </tr> <tr> <td colspan="8"><b>Site Operations:</b></td> </tr> <tr> <td colspan="2">Drilling Pilot Borehole</td> <td colspan="2">6.25 hrs.</td> <td>4/29/04</td> <td>17:00</td> <td>4/30/04</td> <td>12:40</td> </tr> <tr> <td colspan="2">Drilling Main Borehole</td> <td colspan="2">5.75 hrs.</td> <td>5/4/04</td> <td>9:00</td> <td>5/4/04</td> <td>14:45</td> </tr> <tr> <td colspan="2">Cleaning/Conditioning Borehole</td> <td colspan="2">2.5 hrs.</td> <td>5/4/04</td> <td>14:45</td> <td>5/5/04</td> <td>8:30</td> </tr> <tr> <td colspan="2">Geophysical Logging</td> <td colspan="2">2.3 hrs.</td> <td>4/30/04</td> <td>14:50</td> <td>4/30/04</td> <td>17:10</td> </tr> <tr> <td colspan="2">Installing 6" O.D. casing to 295'</td> <td colspan="2">6 hrs.</td> <td>5/5/04</td> <td>11:30</td> <td>5/5/04</td> <td>17:30</td> </tr> <tr> <td colspan="2">Filter Pack</td> <td colspan="2">4 hrs.</td> <td>5/6/04</td> <td>8:20</td> <td>5/6/04</td> <td>13:30</td> </tr> <tr> <td colspan="2">Bentonite Seal</td> <td colspan="2">0.5 hr.</td> <td>5/6/04</td> <td>14:00</td> <td>5/6/04</td> <td>14:30</td> </tr> <tr> <td colspan="2">Airlift Development</td> <td colspan="2">17.75 hrs.</td> <td>5/6/04</td> <td>13:30</td> <td>5/11/04</td> <td>13:30</td> </tr> <tr> <td colspan="2">Chemical Injection/Swabbing</td> <td colspan="2">2 hrs.</td> <td>5/11/04</td> <td>15:10</td> <td>5/11/04</td> <td>17:15</td> </tr> <tr> <td colspan="2">Pump Development</td> <td colspan="2">17.25 hrs.</td> <td>5/12/04</td> <td>9:00</td> <td>5/13/04</td> <td>15:45</td> </tr> <tr> <td colspan="2">Step-Drawdown Testing</td> <td colspan="2">8 hrs.</td> <td>5/14/04</td> <td>7:55</td> <td>5/14/04</td> <td>16:00</td> </tr> <tr> <td colspan="2">Constant Discharge Testing</td> <td colspan="2">48.75 hrs</td> <td>5/17/04</td> <td>8:00</td> <td>5/19/04</td> <td>8:45</td> </tr> <tr> <td colspan="8" style="text-align: center;"><b>WELL DEVELOPMENT:</b></td> </tr> <tr> <td colspan="8">                 Installed 2" pipe in the well casing to 294' bgs, started developing on 5/6/04 at 13:30 hrs. Airlifted from this depth until the development was less than 1 ppm (Imhoff Cone). Installed 3" pipe with an isolation tool on 5/10/04 and began airlifting 5' intervals. Airlifted and swabbed each screen interval until water clarity was visibly improved and sand production decreased to less than 1 ppm. On 5/11/04, after interval development was completed, swabbed Hydro-Thin mud dispersant into each screen section and left it overnight. On 5/12/04 installed a 15 hp development pump. Discharge rate with 15 hp pump was 270 gpm. On 5/13/04 installed a 25 hp pump with intake at 153' bgs and continued pump development. Pumped and surged well until discharge water was clear and sand production was 0.1 ppm after surges. On 5/14/04 conducted step-drawdown test at 200, 300, 400, and 500 gpm. Each step was two hours long. On 5/17/04 began 48-hour constant-discharge test. Pumping rate was held constant at 480 gpm. Pre-pumping water level was 13.85' bgs.             </td> </tr> <tr> <td colspan="8" style="text-align: center;"><b>COMMENTS:</b></td> </tr> <tr> <td colspan="8">                 Drilled driect rotary mud. Temporary well was designed to allow casing to be pulled out and borehole abandoned after aquifer testing. On May 26, 2004 well casing was pulled, the borehole cleaned to total depth, and then seven cubic yards of sand/cement slurry was pumped into the borehole. 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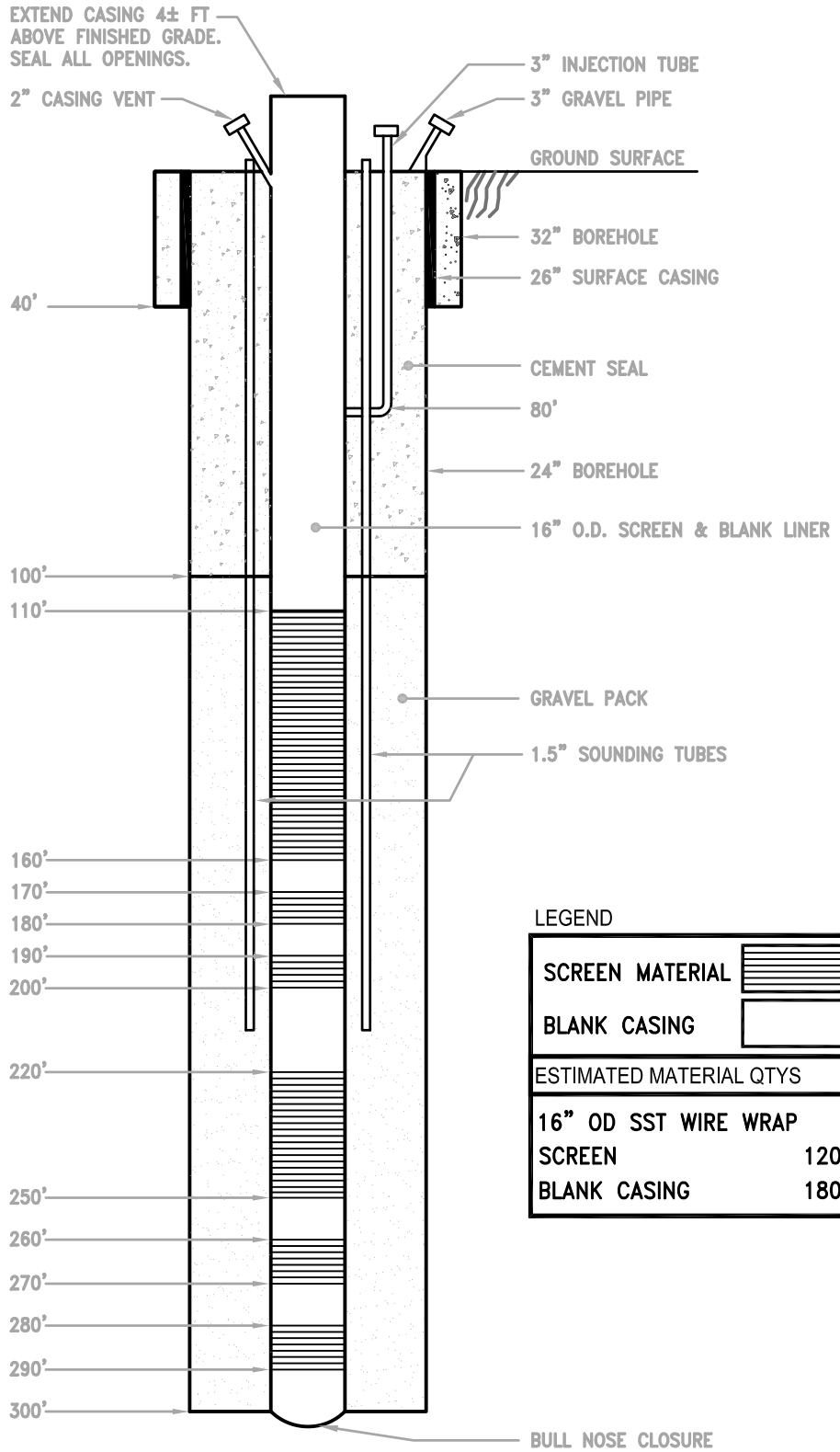
K:\2014-15 Capital Projects\15-0018 Innovation Well\Con Docs\15-0018 Well Location.dwg  
 Oct 07, 2014 - 1:56pm

DATE: OCTOBER 2014
DRAWN BY: HCS
WORK ORDER #5-0018
SCALE: AS SHOWN

FIGURE  
1

**TRUCKEE MEADOWS WATER AUTHORITY**  
 1355 CAPITAL BLVD. / PO BOX 30013  
 RENO, NEVADA 89520-3013  
 PH 775-834-8000 / FX 775-834-8003

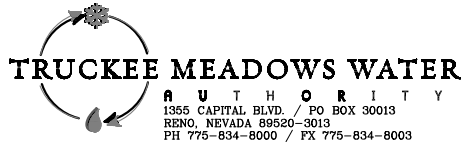
**INNOVATION WELL LOCATION MAP**



LEGEND

SCREEN MATERIAL	
BLANK CASING	
ESTIMATED MATERIAL QTYS	
16" OD SST WIRE WRAP	
SCREEN	120'
BLANK CASING	180'

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Sep 03, 2014 - 9:48am



**INNOVATION-LONGLEY WELL DETAIL  
CONSTRUCTION MATERIALS DIAGRAM**

DATE:	JULY 2014
DRAWN BY:	TK
WORK ORDER #:	
SCALE:	NTS

**FIGURE**  
**2**