# Groundwater Monitoring Well and Piezometer Decommissioning, RMC-Troutdale Facility, 2005

Technical Memorandum GW No. 32



Reynolds Metals Company TROUTDALE FACILITY

## CH2MHILL

December 2005

## Groundwater Monitoring Well and Piezometer Decommissioning, RMC-Troutdale Facility, 2005

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## Introduction

This technical memorandum provides a summary of well decommissioning activities accomplished at the Reynolds Metals Company (RMC)/Alcoa, Inc., aluminum reduction facility in Troutdale, Oregon, in December 2004 and January 2005. The well decommissioning work was conducted as part of the Troutdale facility closure and demolition program. Thirty-six monitoring wells and six piezometers were identified for decommissioning in RMC's *Memorandum WP No. 63: Work Plan for Decommissioning Groundwater Monitoring Wells at the RMC-Troutdale Facility* (CH2M HILL, November 2004). Well and piezometer locations included in *Memorandum WP No. 63* are shown in Figure 1.

## Well Decommissioning

With the exception of monitoring wells MW44-011 and MW44-027, which were removed in July 2004, decommissioning work was performed at the site between December 8, 2004, and January 19, 2005, by Geo-Tech Explorations, Inc., a division of Boart Longyear. Decommissioning procedures were in accordance with the methods and approaches described in the submitted work plan (*Memorandum WP No. 63*). Wells were decommissioned in compliance with the following guidelines:

- *Groundwater Monitoring Well Drilling, Construction, and Decommissioning,* Oregon Department of Environmental Quality (DEQ) Guidance (1992)
- Oregon Administrative Rule (OAR) 690-200 through 690-240

On the basis of well construction and depth, the wells were decommissioned either by overdrilling (OAR 690-240-0510(1)) or by grout and backfill with an approved sealant (OAR 690-240-510(2) and 690-240-0475). Oregon Water Resources Department (OWRD) decommissioning start cards, original well drilling logs, monitoring well construction

reports, and decommissioning monitoring well reports filed with OWRD are included in Attachments 1, 2, 3, and 4 (provided on compact disk [CD]). Table 1 provides a construction summary of the decommissioned wells.

## **Special Standards**

OWRD requires approval of a special standard for decommissioning wells in place by backfilling with sealant. OWRD issued a special standard in December 2004 that approved decommissioning in place for monitoring wells MW03-017, MW03-098, MW05-025, MW06-024, MW12-184, MW15-024, MW15-086, MW15-175, MW38-007, MW38-035, MW39-095, and MW48-055.

On the basis of field conditions, additional special standards were requested for MW06-94, MW06-176, and MW21-176 in January 2005. MW06-94 and MW06-176 were not decommissioned as originally planned because unsafe working conditions resulted from the installation of high-voltage overhead power lines after the wells were originally drilled. At MW21-176, borehole conditions encountered at 75 feet below ground surface (bgs) during overdrilling precluded drilling to a total depth of 176 feet bgs. OWRD approved a special standard for both these instances in January 2005. Copies of the approved special standard requests are presented in Attachment 5 (provided on compact disk [CD]).

Specific decommissioning activities performed in December 2004 and January 2005 are described below by decommissioning method.

## Overdrilling

The appropriate overdrilling method was selected for each well based on well construction and depth. Direct push, hollow stem auger, and air rotary drilling methods were used to decommission the wells as follows:

- Direct Push: piezometers
- Hollow Stem Auger: 2-inch-diameter wells shallower than 100 feet
- Air Rotary: 2-inch-diameter wells deeper than 100 feet

Heaving sand conditions, which are well documented at the Troutdale facility, were generally not observed or were minor during well decommissioning activities. Soil cuttings and well materials were collected at the surface and placed in drums or totes and then transported to the Building 97 concrete pad. The cuttings and material were then bulked with other contaminated soils for disposal by the demolition contractor.

#### **General Decommissioning Procedures**

Prior to overdrilling, the protective casing, bollards, and surface completion were removed. An attempt was then made to remove the well casing and screen by pulling prior to overdrilling. Drilling action, penetration rate, depth, and surface return of well materials were monitored during overdrilling. After reaching total depth, the well was backfilled with bentonite chips or pressure grouted with grout slurry, depending on total depth of the well and height of the standing water column per OAR 690-240-0475. For example, bentonite



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Well ID	OWRD ID	Install Start Card No.	Unit <sup>a</sup>	Installation Date	Total Depth <sup>°</sup>	Casing Diameter	Borehole Diameter	Screen Length (feet)	Screened Interval	Top of Filter Pack ິ	MPE "	GSE <sup>®</sup>	Screened Material <sup>'</sup>	Well Location	Abandonment Method	Drilling Technology
MW03-017	MULT 4283	67349	S	07/09/94	18	2-inch	10-inch	8	9 to 17	7	29.69	27.4	Sand (SP, SM)	Perimeter	Grout/Backfill	Hollow Stem Auger
MW05-025	MULT 4282	67348	S	07/08/94	25	2-inch	10-inch	10	15 to 25	12	33.99	31.6	Silt (ML), Sand (SM)	Background	Grout/Backfill	Hollow Stem Auger
MW06-024	MULT 5281	67347	S	07/08/94	25	2-inch	10-inch	10	14 to 24	11.5	26.81	24.1	Silt (ML), Sand (SP, SM)	Perimeter	Grout/Backfill	Hollow Stem Auger
MW15-024	MULT 4925	80229	S	07/13/95	24	2-inch	10-inch	10	14 to 24	11.5	22.75	20.9	Silt (ML) Sand/silt (SP, SM)	Perimeter	Grout/Backfill	Hollow Stem Auger
MW37-012	MULT 52266	93714	S	10/23/96	12.5	2-inch	9-inch	5	7 to 12	5	21.48	17.8	Silt (ML)	South wetlands	Overdrill	Hollow Stem Auger
MW38-007	MULT 52268	93752	S	11/01/96	7	2-inch	10-inch	4	3 to 7	2	22.56	20.6	Sand (SW)	Along Salmon Creek	Grout/Backfill	Hollow Stem Auger
MW41-020	MULT 53786	100165	S	06/13/97	20.3	2-inch	11-inch	5	15 to 20	12	28.63	29.1	Silt (ML)	Bakehouse	Overdrill	Hollow Stem Auger
MW43-015	MULT 53788	100167	S	06/13/97	15.3	2-inch	11-inch	5	10 to 15	8	30.91	29.7	Silt (ML)	Bakehouse	Overdrill	Hollow Stem Auger
MW45-017	MULT 53791	100170	S	06/17/97	17.8	2-inch	11-inch	5	12 to 17	10	30.61	28.7	Silt (ML)	Bakehouse	Overdrill	Hollow Stem Auger
MW08-027	MULT 4280	67346	UGS	07/07/94	28	2-inch	10-inch	10	17 to 27	14	25.32	22.8	Sand (SP)	Perimeter	Overdrill	Air Rotary
MW09-030	MULT 4302	70153	UGS	08/04/94	32	2-inch	10-inch	10	20 to 30	18	29.27	27.0	Sand (SP)	North landfill	Overdrill	Hollow Stem Auger
MW20-026	MULT 4998	81122	UGS	09/01/95	26.5	2-inch	10-inch	10	16 to 26	15	28.46	25.8	Sand (SP)	North landfill	Overdrill	Hollow Stem Auger
MW22-027	MULT 4997	81473	UGS	09/06/95	27	2-inch	10-inch	10	17 to 27	15	25.35	22.6	Sand (SP)	North landfill	Overdrill	Hollow Stem Auger
MW25-035	MULT 4919	80236	UGS	07/24/95	35.5	2-inch	10-inch	5	30 to 35	29	30.89	28.4	Sand (SW, SP)	Scrap yard	Overdrill	Hollow Stem Auger
MW37-030	MULT 52473	93803	UGS	12/09/96	30.5	2-inch	9-inch	5	25 to 30	23	21.32	17.8	Sand with silt (SW-SM)	South wetlands	Overdrill	Hollow Stem Auger
MW38-035	MULT 52476	93798	UGS	12/02/96	36	2-inch	10-inch	5	30 to 35	28.5	23.07	20.7	Sand (SW)	Along Salmon Creek	Grout/Backfill	Hollow Stem Auger
MW41-033	MULT 53785	100164	UGS	06/12/97	35	2-inch	11-inch	5	28 to 33	26	28.71	29.1	Sand (SM)	Bakehouse	Overdrill	Hollow Stem Auger
MW43-027	MULT 53787	100166	UGS	06/13/97	29	2-inch	11-inch	5	22 to 27	20	30.72	29.7	Sand (SW)	Bakehouse	Overdrill	Hollow Stem Auger
MW45-042	MULT 53792	100171	UGS	06/16/97	43	2-inch	11-inch	5	37 to 42	35	30.26	28.9	Sand (SW)	Bakehouse	Overdrill	Hollow Stem Auger
MW54-050	MULT 62323	132598	UGS	09/18/00	50	2-inch	6-inch	10	40 to 50	38	30.09	26.97	Sand (SW)	South landfill	Overdrill	Hollow Stem Auger
MW03-098	MULT 52876	85677	I	06/26/96	100	2-inch	6-inch	10	88 to 98	87	30.65	28.7 <sup>g</sup>	Sand (SP)	Perimeter	Grout/Backfill	Hollow Stem Auger
MW06-094	MULT 52873	79940	I	09/20/96	96	2-inch	6-inch	10	84 to 94	83.5	27.85	25.5	Sand (SW)	South of dike	Overdrill	Hollow Stem Auger
MW08-127	MULT 52872	85711	I	07/10/96	129	2-inch	6-inch	10	117 to 127	116.5	25.62	23.5 <sup>g</sup>	Sandy gravel (GW)	Perimeter	Overdrill	Air Rotary
MW15-086	MULT 52866	85672	I	09/23/96	87	2-inch	6-inch	10	76 to 86	75	23.88	21.5	Sand (SW)	Perimeter	Grout/Backfill	Hollow Stem Auger
MW21-063	MULT 52863	79938	1	10/01/96	65	2-inch	6-inch	10	53 to 63	51	26.76	23.8	Sand (SW)	North landfill	Overdrill	Hollow Stem Auger
MW31-095	MULT 52919	89222	I	12/09/96	96	2-inch	6-inch	10	85 to 95	82	25.00	22.8	Sand (SW)	Fairview Farms	Overdrill	Hollow Stem Auger
MW39-095	MULT 53990	95695	I	06/26/97	95	2-inch	6.5-inch	10	85 to 95	82	25.18	22.3	Sand (SW)	Fairview Farms	Grout/Backfill	Hollow Stem Auger
MW48-055	MULT 54142	104245	1	09/02/97	56	2-inch	6-inch	10	45 to 55	42	28.19	28.4	Sand	No. Side Casthouse	Grout/Backfill	Hollow Stem Auger
MW51-069	MULT 54610	100613	I	11/03/97	69	2-inch	6-inch	10	58 to 68	55	26.17	23.4	Sand	Adjacent to River	Overdrill	Hollow Stem Auger
MW06-176	MULT 52874	79941	D	05/03/96	178	2-inch	6-inch	10	166 to 176	165	27.74	25.4 <sup>g</sup>	Sand (SW-SP)	Perimeter	Overdrill	Air Rotary
MW08-169	MULT 52871	85712	D	05/23/96	170.5	2-inch	6-inch	10	159 to 169	158	25.88	23.7 <sup>g</sup>	Sand (SW) / Gravel (GW)	Perimeter	Overdrill	Air Rotary
MW12-184	MULT 52868	85676	D	05/21/96	184.5	2-inch	10-inch to 8.5 feet; 6-inch to 200 feet	10	174 to 184	171	23.04	20.7 <sup>g</sup>	Sand (SW)	Perimeter	Grout/Backfill	Hollow Stem Auger
MW15-175	MULT 52865	85678	D	06/04/96	175.8	2-inch	6-inch	10	165 to 175	164	23.88	21.8 <sup>g</sup>	Sand (SW)	Perimeter	Grout/Backfill	Hollow Stem Auger
MW21-176	MULT 52864	79939	D	08/14/96	177	2-inch	6-inch	10	166 to 176	165	26.01	23.3	Sand (SW)	North landfill	Overdrill	Air Rotary
MW27-176	MULT 52860	85715	D	08/26/96	176.5	2-inch	6-inch	10	164 to 174	163	31.94	29.5	Gravel (GW)	Adjacent to Company Lake	Overdrill	Air Rotary
Piezometers	1													1		
PZ17-019	MULT 54670	100606	S	10/29/97	19.3	1/2-inch	2-inch	3	16 to 19	14	28.73	NM	Silt	Bakehouse	Overdrill	Geoprobe
PZ18-023	MULT 54668	100604	S	10/31/97	23.3	1/2-inch	2-inch	3	20 to 23	18	27.87	NM	Silt	Bakehouse	Overdrill	Geoprobe
PZ19-014	MULT 54673	100609	S	10/31/97	14.3	1/2-inch	2-inch	3	11 to 14	9	29.30	NM	Silt	Bakehouse	Overdrill	Geoprobe
PZ17-039	MULT 54669	100605	UGS	10/29/97	40	1/2-inch	2-inch	3	36 to 39	34	28.69	NM	Sand	Bakehouse	Overdrill	Geoprobe
PZ18-040	MULT 54671	100607	UGS	10/30/97	42	1/2-inch	2-inch	3	37 to 40	35	27.81	NM	Sand	Bakehouse	Overdrill	Geoprobe
PZ19-040	MULT 54672	100608	UGS	10/31/97	40	1/2-inch	2-inch	3	37 to 40	35	29.43	NM	Sand	Bakehouse	Overdrill	Geoprobe

Notes:

<sup>a</sup> S = Shallow well screened in silt.

UGS = Shallow well screened in the upper gray sand.

I = Intermediate-depth well screened in sand.

D = Deep well screened in sand/gravel.

NA = Information not available.

<sup>b</sup> Feet below ground surface (ft bgs).

<sup>c</sup> Casing and screen constructed with flush-threaded Schedule 40 or 80 polyvinyl chloride with 0.010-inch machine-slotted screen.

<sup>d</sup> MPE = Measuring point elevation, feet 1929 National Geodetic Vertical Datum (NGVD).

<sup>e</sup> GSE = Ground surface elevation, feet 1929 NGVD.

<sup>f</sup> For explanation of soil classification codes, refer to ASTM D 2488, Standard Practice for Description and Identification of Soils (American Society for Testing and Materials, August 1990).

<sup>g</sup> Reference point is top of concrete pad (feet 1929 NGVD), not ground surface elevation.

chips were used if the depth to the bottom of the seal was less than 50 feet and the standing water column in the borehole was less than 25 feet deep at the time of seal placement.

Baroid Holeplug<sup>™</sup> 3/8-inch unhydrated sodium bentonite chips were poured into the borehole at locations backfilled with bentonite chips. Chips were poured slowly into the borehole to prevent bridging. Chips were hydrated during emplacement in approximately 2-foot lifts. The volume of chips used was compared with the amount calculated based on borehole dimensions.

Baroid Aquaguard<sup>™</sup> high-solids (by weight) grout slurry, mixed to the manufacturer's specifications, was used at locations backfilled by pressure grouting. Grout slurry was mixed in 55-gallon drums at a ratio of two 50-pound bags per 40 gallons of water. The grout slurry was pumped into the borehole through a bottom discharge tremie pipe installed near the bottom of the borehole. The grout level in the borehole was maintained above the bottom of the casing or auger flights during the grouting process. Boreholes were backfilled to ground surface with grout slurry. The boreholes were later inspected for grout settlement. Bentonite chips were used to backfill the borehole when settlement had occurred to bring the grout level to near ground surface.

Actual grout volumes observed were compared with estimated grout volumes based on borehole dimensions. The borehole was inspected after the grout was allowed to settle overnight. If settlement was observed, the borehole was backfilled with bentonite chips to a depth of approximately 1 foot bgs. The hole was then backfilled to grade with native soil.

A brief summary for each of the overdrilling methods is presented below.

#### **Direct Push**

Six piezometers (PZ17-019, PZ17-039, PZ18-023, PZ18-040, PZ19-014, and PZ19-040) were decommissioned using a GeoProbe direct push drill rig. Casing was removed prior to overdrilling the boreholes. The piezometers were redrilled to the original borehole total depth as required by OAR 690-240-0510 (1). Table 2 provides details of decommissioning activities for the six piezometers.

#### Hollow Stem Auger

Monitoring wells MW09-030, MW20-026, MW21-063, MW22-027, MW25-035, MW31-095, MW37-012, MW37-030, MW41-020, MW41-033, MW43-015, MW43-027, MW45-017, MW45-042, MW51-069, and MW54-050 were decommissioned by overdrilling using a Mobile B-59 hollow stem auger drill rig. The wells were redrilled to a minimum of the original borehole depth using auger flights of at least the original borehole diameter. Where possible, all polyvinyl chloride (PVC) casing and screen were removed prior to overdrilling. All casing, screen, annular seal, and filter pack were removed by overdrilling prior to sealing. Boreholes were backfilled with grout as described in the General Decommissioning Procedures section, above. Overdrilling depths and grout volumes are presented in Table 3.

	Table 2         Summary of Decommissioned Piezometers         Reynolds Metals Company/Alcoa, Inc Troutdale, Oregon										
Owner Well ID	OWRD ID	Install. Start Card No.	Decom. Start Card No.	Unit <sup>a</sup>	Installation Date	Decommission Date	Total Depth <sup>b</sup>	Over- Drilling Method	Depth Overdrilled	Estimated Grout Volume (gal)	Actual Volume of Grout (gal)
PZ17-019	MULT 54670	100606	167927	S	10/29/97	12/20/04	19.3	Geoprobe	20	3.1	5
PZ17-039	MULT 54669	100605	167930	UGS	10/29/97	12/21/04	40	Geoprobe	40	6.4	12
PZ18-023	MULT 54668	100604	167928	S	10/31/97	12/20/04	23.3	Geoprobe	24	3.7	8
PZ18-040	MULT 54671	100607	167931	UGS	10/30/97	12/20/04	42	Geoprobe	42	6.7	13
PZ19-014	MULT 54673	100609	167929	S	10/31/97	12/20/04	14.3	Geoprobe	15	2.3	4
PZ19-040	MULT 54672	100608	167932	UGS	10/31/97	12/20/04	40	Geoprobe	40	6.4	11

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Notes:

<sup>a</sup> S = Shallow well screened in silt.

UGS = Shallow well screened in the upper gray sand.

I = Intermediate-depth well screened in sand.

D = Deep well screened in sand/gravel.

Feet below ground surface (ft bgs).

	Table 3           Groundwater Wells Decommissioned by Overdrilling with Hollow Stem Auger Drilling           Reynolds Metals Company/Alcoa, Inc Troutdale, Oregon											
Owner Well ID	OWRD ID	Install. Start Card No.	Decom. Start Card No.	Unit <sup>a</sup>	Installation Date	Decommission Date	Total Depth <sup>b</sup>	Overdrilling Method	Depth Overdrilled	Calculated Grout Volume (bags) <sup>c</sup>	Actual Volume of Grout (gal)	No. of Bags of Bentonite Chips (50-lb bag)
MW00 020	MULT 4202	70152	167954		09/04/04	01/02/05	20	Overdrill/USA	22	49.0	140	NA
MW09-030	MULT 4302	91100	167054	003	00/04/94	12/07/04	32	Overdrill/HSA	32	40.0	140	17
MW20-028	MULT 52863	70038	167864	1	10/01/96	01/04/05	20.5	Overdrill/HSA	20.5	97.5	160	17
MW21-003	MULT 22003	81473	167856		09/06/95	01/03/05	27	Overdrill/HSA	27	40.5	140	NA
MW22-027	MULT 4997	90226	167957		03/00/95	12/07/04	25.5	Overdrill/HSA	25.5	10.1	NA	10
MW23-035	MULT 52010	80230	167042	1	12/09/06	07/01/05	05	Overdrill/HSA	05	27.1	140	35
MN/27 012	MULT 52919	09222	167950	r e	10/22/06	12/21/04	12.5	Overdrill/HSA	12	27.1	NA	3.5
MW37-012	MULT 52473	03903	167959		12/00/06	12/21/04	20.5	Overdrill/HSA	21.5	9.7		4.5
MW/41 020	MULT 52796	100165	167951	6000	06/13/07	12/21/04	20.3	Overdrill/HSA	20.5	5.9		14.5
MW41-033	MULT 53785	100164	167859		06/12/97	12/08/04	20.0	Overdrill/HSA	20.5	10.0	NA	14
MW41-000	MULT 53788	100167	167852	000 S	06/13/97	12/10/04	15.3	Overdrill/HSA	15.3	10.0	NA	13
MW43-077	MULT 53787	100166	167860		06/13/97	12/10/04	20	Overdrill/HSA	20	83	NA	20
MW/45-017	MULT 53701	100100	167853	6000	06/17/97	12/10/04	17.8	Overdrill/HSA	18	5.1	NA	15
MM/45 042	MULT 53791	100170	167961		06/16/07	12/09/04	17.0	Overdrill/USA	10	12.2		22
MNA/51.060	MULT 53792	100171	167965	000	11/02/07	12/00/04	40		40	102.5	200	22
MN/54 050	MULT 62222	122509	167962		00/19/00	01/02/05	09 50		50	75.0	200	NA NA
1010034-050	WUL1 02323	132598	10/802	065	09/18/00	01/03/05	50	Overuill/HSA	50	73.0	70	INA

Notes:

<sup>a</sup> S = Shallow well screened in silt.

UGS = Shallow well screened in the upper gray sand.

I = Intermediate-depth well screened in sand.

D = Deep well screened in sand/gravel.

<sup>b</sup> Feet below ground surface (ft bgs).

Shaded grout values are in gallons for wells pressure grouted with Baroid Aquaguard.

#### Air Rotary

Five deep monitoring wells (MW08-127, MW08-169, MW08-30, MW27-176, and MW21-176) were decommissioned using a direct air rotary drill rig for overdrilling. Air rotary was selected for overdrilling the deeper well locations because a hollow stem auger was unlikely to reach total depth before refusal. MW08-30 was originally identified to be overdrilled using a hollow stem auger, but because of limited work space at the MW08 well cluster, the method was changed to air rotary.

The overdrilling procedure for the deep wells was modified to include grouting of the monitoring well prior to overdrilling. This was done in the event that encountered borehole conditions prevented drilling to total depth. Grouting was not performed at MW21-176 prior to overdrilling because the monitoring well was blocked during site preparation for decommissioning. During removal of the surface monument, the PVC riser casing broke below the ground surface during drill site preparation. Sloughing of gravel installed for the drill pad prevented access of tremie pipe into the PVC. With the exception of MW21-176 (described below), all wells were overdrilled to the original depth at the original borehole diameter.

During initial overdrilling of MW21-176 using a 6-inch-diameter casing, PVC was not observed in drilling discharge between the depths of 20 and 40 feet bgs. The drive casing was advancing with only minor hammer force and grout was being returned at the surface, suggesting that the casing was following the borehole. Because of the lack of evidence of PVC in drill cuttings and the possibility of deviation from the borehole, the driller contacted Kristopher Byrd at OWRD. OWRD requested that the borehole continue to be overdrilled to the total depth of the monitoring well at a diameter of 10 inches. As a precaution, 14-inchdiameter surface casing was advanced to a depth of 10 feet. A visual check confirmed PVC riser casing near the base of the 14-inch-diameter surface casing at 10 feet. The driller advanced the casing while overdrilling the borehole at a 10-inch nominal diameter to 75 feet bgs after reestablishing the borehole. The PVC was observed in the surface discharge from 10 to 75 feet bgs.

At a depth of 75 feet bgs, partially cemented coarse sand and gravel material was encountered, penetration rates slowed, and PVC was no longer observed in the surface discharge. Drilling action and casing advancement rates indicated that the bit was no longer following the borehole at 75 feet bgs. To increase the drilling penetration rate, an air percussion hammer drill bit was installed and drilling continued to attempt to advance the borehole to depth per the request of OWRD staff. At a depth of 84 feet bgs, the driller determined that the bit was no longer following the borehole based on the drilling action and drive casing refusal. Kristopher Byrd at OWRD was contacted on January 18, 2005, to request a special standard to grout in place. After verbal approval was received from OWRD, approximately 82 feet (84 to 166 feet bgs) of 2-inch-diameter Schedule 40 PVC riser casing and 10 feet (166 to 176 feet bgs) of 0.010 slot screen were left in place. The overdrilled portion of the borehole at MW21-176 was grouted in place by pressure grouting from refusal (84 feet) to ground surface. Boreholes were backfilled with a high solids bentonite grout slurry, as described in the General Decommissioning Procedures section, above. Table 4 presents a summary of the overdrilling and grouting by air rotary methods.

## Table 4 Groundwater Wells Decommissioned By Overdrilling Using Air Rotary Drilling Reynolds Metals Company/Alcoa, Inc. - Troutdale, Oregon

Owner Well ID	OWRD ID	Install. Start Card No.	Decom. Start Card No.	Unit <sup>a</sup>	Installation Date	Decommission Date	Over- Drilling Method	Depth Overdrilled	Calculated Grout Volume (gal)	Actual Volume of Grout (gal)
MW08-027	MULT 4280	67346	167854	UGS	07/07/94	01/11/04	Air Rotary	30	45.0	180
MW08-127	MULT 52872	85711	167879	I	07/10/96	01/05/04	Air Rotary	129	193.5	325
MW08-169	MULT 52871	85712	167881	D	05/23/96	01/05/05	Air Rotary	172	258.0	625
MW21-176	MULT 52864	79939	167882	D	08/14/96	01/13/05	Air Rotary	83	124.5	500
MW27-176	MULT 52860	85715	167883	D	08/26/96	01/11/05	Air Rotary	176.5	264.8	565

Notes:

<sup>a</sup> S = Shallow well screened in silt.

UGS = Shallow well screened in the upper gray sand.

I = Intermediate-depth well screened in sand.

D = Deep well screened in sand/gravel.

Feet below ground surface (ft bgs).

## Grout and Backfill

OWRD approved a special standard for monitoring wells MW03-017, MW03-098, MW05-025, MW06-024, MW12-184, MW15-024, MW15-086, MW15-175, MW38-007, MW38-035, MW39-095, and MW48-055 to be decommissioned by backfilling in place with an approved sealant as specified in OAR 690-240-0510 (2) and 690-240-0475. During the decommissioning work, MW31-095 was mistakenly decommissioned by backfilling instead of the approved well MW39-095. The mistake was identified during semiannual groundwater monitoring performed in February 2005. Well MW31-095 was later decommissioned by overdrilling, as described in the Hollow Stem Auger section. Well MW31-095R was installed to replace MW31-095 and is described later in this document in the Well Replacement section.

The drilling contractor contacted OWRD to request that MW06-94 and MW06-176 also be decommissioned by grouting in place, rather than by overdrilling, because of the presence of high-voltage power lines. Verbal approval to grout in place was received on January 11, 2005. Written approval of the special standard received from OWRD is presented in Attachment 5.

#### **General Procedure**

The protective casing, bollards, and surface completion were removed at each well. The well casing was removed to a depth of approximately 2 feet bgs. Wells were then backfilled by one of the following approved sealants:

- Baroid Holeplug<sup>™</sup> 3/8-inch unhydrated sodium bentonite chips
- Baroid Aquaguard<sup>™</sup> high-solids (by weight) grout slurry

Wells were backfilled with bentonite chips or pressure grouted with grout slurry, depending on total depth of the well and height of the standing water column per OAR 690-240-0475. For example, bentonite chips were used if the depth to the bottom of the seal was less than 50 feet and the standing water column in the borehole was less than 25 feet deep at the time of seal placement.

Where bentonite chips were used to backfill the borehole, the chips were poured slowly to prevent bridging in approximately 2-foot lifts. The borehole was filled with bentonite chips until observed at the ground surface. Bentonite chips were hydrated as they were introduced into the borehole above the standing water column.

Grout slurry was mixed to the manufacturer's specifications in 55-gallon drums at a ratio of two 50-pound bags per 40 gallons of water. The grout slurry was pumped into the borehole through a bottom discharge tremie pipe installed near the bottom of the well. Pressure grouting was continued until grout was observed at the top of the well.

Grout volumes for monitoring wells decommissioned in place are presented in Table 5. Because of the overhead power lines, a modified method of pressure grouting was used at MW06-176 and MW06-94. A threaded PVC cap with a camlock fitting was installed on the top of well. The pressure grout discharge was attached to the PVC cap, and grout was introduced into the well via pressure grouting. Grouting continued until the estimated grout volume (based on the well depth and dimensions) was injected. Visual checks were

	Table 5         Groundwater Wells Decommissioned by Grout and Backfill in Place         Reynolds Metals Company/Alcoa, Inc Troutdale, Oregon										
Owner Well ID	OWRD ID	Install. Start Card No.	Decom. Start Card No.	Installation Date	Decommission Date	Total Depth <sup>b</sup>	Abandonment Method	Estimated Grout Volume (gal)	Actual Volume of Grout (gal)		
MW03-017	MULT 4283	67349	167835	07/09/94	12/22/04	18	Grout/Backfill	2.9	11		
MW03-098	MULT 52876	85677	167843	06/26/96	12/22/04	100	Grout/Backfill	16.0	30		
MW05-025	MULT 4282	67348	167834	07/08/94	12/22/04	25	Grout/Backfill	4.0	12		
MW06-024	MULT 5281	67347	167833	07/08/94	12/22/04	25	Grout/Backfill	4.0	15		
MW06-094	MULT 52873	79940	167863	09/20/96	01/13/05	96	Grout/Backfill	15.4	17.5		
MW06-176	MULT 52874	79941	167880	05/03/96	01/13/05	178	Grout/Backfill	28.5	30		
MW12-184	MULT 52868	85676	167840	05/21/96	12/09/04	184.5	Grout/Backfill	29.5	30		
MW15-024	MULT 4925	80229	167836	07/13/95	12/09/04	24	Grout/Backfill	3.8	5		
MW15-086	MULT 52866	85672	167839	09/23/96	12/09/04	87	Grout/Backfill	13.9	20		
MW15-175	MULT 52875	85678	167841	06/04/96	12/09/04	175.8	Grout/Backfill	28.1	30		
MW31-095 <sup>c</sup>	MULT 52919	89222	167943	12/09/96	12/09/04	96	Grout/Backfill	15.4	30		
MW38-007	MULT 52268	93752	167837	11/01/96	12/22/04	7	Grout/Backfill	1.1	5		
MW38-035	MULT 52476	93798	167838	12/02/96	12/22/04	36	Grout/Backfill	5.8	35		
MW39-095	MULT 53990	95695	167844	06/25/97	07/01/05	95	Grout/Backfill	15.2	60		
MW48-055	MULT 54142	104245	167866	09/02/97	12/08/04	56	Grout/Backfill	9.0	9.5		

Notes:

<sup>a</sup> S = Shallow well screened in silt.

UGS = Shallow well screened in the upper gray sand.

I = Intermediate-depth well screened in sand.

D = Deep well screened in sand/gravel.

Feet below ground surface (ft bgs).
 MW31-095 was later overdrilled (see Table 3).

made of the grout level, and grouting continued until the grout level reached the top of the PVC riser casing. After removal of the surface completion, the holes were backfilled from approximately 2 feet bgs to grade with native fill.

### Well Replacement

Well MW31-095R was installed using a hollow stem auger to a depth of 98 feet to replace well MW31-095, which was mistakenly decommissioned. The monitoring well report is provided in Attachment 3, and a summary of construction details is provided in Table 6.

	Table 6           Construction Summary of Groundwater Well MW31-095R           Reynolds Metals Company/Alcoa, Inc Troutdale, Oregon														
	Start         Installation         Total         Casing         Borehole         Screened         Top of Filter         Screened         Well         Driller														
Well ID	OWRD ID	Card No.	Unit "	Date	Depth <sup>5</sup>	Diameter °	Diameter	(feet)	Interval <sup>5</sup>	Pack <sup>®</sup>	MPE <sup>a</sup>	GSE °	Material '	Location	Technology
MW31-095R	MULT 78688	174054	I	07/22/05	98	2-inch	10-inch	10	88 to 98	85	NA	NA	Sand (SW)	Fairview Farms	Hollow Stem Auger
Notes: <sup>a</sup> I = Intermedia <sup>b</sup> Feet below g <sup>c</sup> Casing and s	Iotes:       a       I = Intermediate Well.         b       Feet below ground surface (ft bgs).         c       Casing and screen constructed with flush-threaded Schedule 40 or 80 polyvinyl chloride with 0.010-inch machine-slotted screen.														

<sup>d</sup> MPE = Measuring point elevation, feet 1929 National Geodetic Vertical Datum (NGVD).

<sup>e</sup> GSE = Ground surface elevation, feet 1929 NGVD.

<sup>f</sup> For explanation of soil classification codes, refer to ASTM D 2488, Standard Practice for Description and Identification of Soils (American Society for Testing and Materials, August 1990).

<sup>g</sup> Reference point is top of concrete pad (feet 1929 NGVD), not ground surface elevation.

NA = Not available

# ATTACHMENT 1 OWRD Start Cards

ON CD

Date Postmarked \_\_\_\_\_ Date Hand-Delivered \_\_\_\_\_ Date Region Office Rec'd FOR WATER RESOURCES DEPARTMENT USE ONLY W 167833 OWRD Receipt Date Fee Received Check No.

#### START CARD NOTICE OF BEGINNING OF WELL CONSTRUCTION (as required by ORS 537.762)

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address: <u>Keynolds Heles</u>			
Home Phone: ( ) 3502 Supplies R. f			
Work Phone: ( ) Trastitute, Ok. 97080		99. – 1999 – J. – Janes J. – Jane	
Type of work: Fee 🗌 New Construction	No Fee	Alteration (Rep	air/Recondition)
Required: 🗌 Conversion	<b>Required:</b>	🔀 Abandonment	Orig. Start
🗖 Deepening 🛛 Orig. Start		/	Card No. (0734)
Card No			
Proposed Commencement Date: 12/7/04			
Existing or Proposed Well Depth: $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$	Original W	/ell I.D. Label Numbe	er:
Use: Domestic Community (Public System) Industria	l 🗆 Ir	rigation	
Thermal Injection Monitor	ing 🗖 O	ther	
Proposed Well Location:			
County <u>Hultnomuh</u> Township <u>I</u> Range <u>3</u> (North or South <u>East or Wes</u>	Section	Tax Lot	100
1/4 <u>SE</u> Or Latitude		Longitude	
Street Address of well, if not assigned, nearest address;			
Same			
We have read the healt of this form and the information provided is as	events to the h		
we have read the back of this form and the information provided is ac		est of our knowledg	,c.
Oumer/Agent Nome Ponded Water Supply/Monitor	Wall Constructor N		ioonso No
Date Signed Comma	NTIMD	ر) ہوا	Date Signed
			5
OWNER PLEASE NOTE: This is not a water right application. The ow	ner is responsi	ble for obtaining a w	ater right through

ADDITIONAL IMPORTANT INFORMATION ON BACK.

to construction if the well is to be used as a public system.

FOR WATER RESOURCES DEPARTMENT USE ONLY

Date Postmarked \_\_\_\_\_ Date Hand-Delivered \_\_\_\_

LE;

Date Region Office Rec'd \_\_\_\_

W 167834 OWRD Receipt \_\_\_\_\_ Date Fee Received

Check No.

#### START CARD NOTICE OF BEGINNING OF WELL CONSTRUCTION (as required by ORS 537.762)

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Owner's name and mailing address: Reyro	oldo Michals			
Home Phone: ( ) 5100	Sonctial Rep			
Work Phone: () Typedz	luce 012 97082			
Type of work: Fee New Con Required: Conversion Deepenin	struction on g Orig. Start Card No	No Fee Required:	☐ Alteration (Repa ☑ Abandonment	nir/Recondition) Orig. Start Card No. <u>197348</u> 5-025
Proposed Commencement Date: 12/7/04				
Existing or Proposed Well Depth: $25^{\circ}$	Diameter: _ 2 ''	Original W	ell I.D. Label Numbe	r:
Use: Domestic Community (Pu	iblic System) 🛛 Industrial 🖾 Monitorin	g Do	igation	
Proposed Well Location:				
County Hultmonah Township	A or South Range Range Range Range	Section	Tax Lot	ROW
1/4 <u>SU</u> 1/4 <u>SE</u> OI	r Latitude	·	Longitude	
Street Address of well, if not assigned, nearest	address:			
Sume				
We have read the back of this form and the	information provided is acc	urate to the b	est of our knowledg	e.
	G. M. Innis		1001	(
Owner/Agent Name	Bonded Water Supply/Monitor W	ell Constructor N	ame L	icense No.
Date Signed	Ceoticul Explanal Company	tions	E	Date Signed
OWNER PLEASE NOTE: This is not a wat the Water Resources Department, if require to construction if the well is to be used as a p ADDITIO *****	er right application. The own ed. The Oregon Health Divisio public system. NAL IMPORTANT INFORM *****	er is responsi on requires pl AATION ON ***********	ble for obtaining a w ans to be submitted : BACK.	rater right through and approved prior *******

THE CODY TO THE BEGION OFFICE

Date Postmarked

Date Hand-Delivered

Date Region Office Rec'd \_

FOR WATER RESOURCES DEPARTMENT USE ONLY W 167835

OWRD Receipt \_\_\_\_\_ Date Fee Received

Check No.

#### START CARD NOTICE OF BEGINNING OF WELL CONSTRUCTION (as required by ORS 537.762)

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Owner's name and mailing address: $\frac{Rc_{abc}}{Rc_{abc}}$	olds Melds		···	
Home Phone: ( ) Stoo	Sundialed			
Work Phone: () Troot	duce OK 97080			
Type of work: Fee INew Cons Required: Conversion Deepening	struction on g Orig. Start Card No	No Fee Required:	☐ Alteration (Rep. ☆ Abandonment	air/Recondition) Orig. Start Card No. <u>( 734</u> 7
Proposed Commencement Date: December	-7,2004			
Existing or Proposed Well Depth: $1$	Diameter: 2	Original V	Vell I.D. Label Numbe	er:
Use: Domestic Community (Pu Thermal Injection	blic System) 🗖 Industrial 💭 Monitoria	ng 🗆 O	rigation ther	
Proposed Well Location:				
County Multnoman Township	h or South Range 3	Section	Tax Lot	100
1/4 <u>SC</u> Or	Latitude		Longitude	
Street Address of well, if not assigned, nearest	address:			
Same			·	
We have read the back of this form and the	information provided is acc	urate to the b	best of our knowledg	ge.
	G. MEINNIS		100	۵ ()
Owner/Agent Name	Bonded Water Supply/Monitor V	Vell Constructor N	lame I	License No.
	Geo-Tech Explorat	10.00	12/7	104
Date Signed	Compar	У	I	Date Signed
OWNER PLEASE NOTE: This is not a wate the Water Resources Department, if require to construction if the well is to be used as a p ADDITIO	er right application. The own d. The Oregon Health Divisi public system. NAL IMPORTANT INFOR	ner is respons on requires p MATION ON ********	ible for obtaining a v lans to be submitted BACK. *********	vater right through and approved prior

Date Postmarked

Date Hand-Delivered \_\_\_\_

Date Region Office Rec'd \_\_\_\_

FOR WATER RESOURCES DEPARTMENT USE ONLY W 167836

OWRD Receipt \_\_\_\_\_ Date Fee Received

Check No.

#### START CARD NOTICE OF BEGINNING OF WELL CONSTRUCTION (as required by ORS 537.762)

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Owner's name and mailing address:	-ynolds Mchals			
Home Phone: ()	100 Sondial Rep			
Work Phone: ()	notalle Ok 97080		- -	
Type of work: Fee 🗌 New 🤇	Construction	No Fee	Alteration (Rep	air/Recondition)
Required: 🗌 Conv	ersion	<b>Required:</b>	🕅 Abandonment	Orig. Start
Deepe	ening Orig. Start			Card No. 8022 9
Proposed Commencement Date: 12/7/	Card No ∽ イ			MW15-024
Existing or Proposed Well Depth:	3' Diameter: 🥏 ''	Original W	ell I.D. Label Numbe	er:
Use: Domestic Community Thermal Injection	(Public System) 口 Industrial 込 Monitorin	g □ In	rigation ther	
Proposed Well Location:				
County Multhomah Township	Range <u>3</u> North or South East or West	Section	Tax Lot	100
1/4 1/4 50	Or Latitude		Longitude	······
Street Address of well, if not assigned, near	rest address:			
Same				
We have read the back of this form and	the information provided is acc	urate to the b	est of our knowledg	ge.
	G. H. Innis		1004	
Owner/Agent Name	Bonded Water Supply/Monitor W	ell Constructor N	ame I	License No.
<u>.</u>	Geo. Tech Explorations	2	12/7/0	<del>کر</del>
Date Signed	Company	, ,	I	Date Signed
OWNER PLEASE NOTE: This is not a the Water Resources Department, if requ	water right application. The own uired. The Oregon Health Divisio	er is responsi on requires pl	ble for obtaining a w ans to be submitted	vater right through and approved prior
to construction if the well is to be used as ADDI	a public system. FIONAL IMPORTANT INFORM	1ATION ON	BACK.	

THE CODV TO THE REGION OFFICE

FOR WATER RESOURC	ES DEPARTMENT USE ONLY
Date Postmarked	w 167837
Dete Hand-Delivered	OWRD Receipt
Date Region Office Rec'd	Date Fee Received
<b>15</b>	Check No.

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address: <u>Reyn</u>	slib Matuls				
Home Phone: (	5. 0. 0.0				
Work	DUNCTICU RU				
Phone: () Trout	ule OK 97080				
Type of work: Fee 🗌 New Constru	ction	No Fee	Alteration (Repa	ir/Recondition	)
Required: 🗌 Conversion		Required:	Abandonment	Orig. Start	
□ Deepening	Drig. Start	- /		Card No. 93	752
	ard No.			38-	007
Proposed Commencement Date: 12/1/04					
Existing or Proposed Well Depth:7'	Diameter: 2 <sup>11</sup>	Original Wel	l I.D. Label Number	r:	
Use: Domestic Community (Public	System) Industrial	🗖 Irrig	ation		
☐ Thermal ☐ Injection	Monitorir	ng 🗌 Othe	er		
Proposed Well Location:		0			
	2		,	0.5	
County Multhoman Township 1	Range	Section	- <u>1</u> Tax Lot	00	
Worth of	South East of West				
1/4 <u>Sw</u> 1/4 <u>Sv</u> Or L	atitude	Lo	ongitude		
Street Address of well, if not assigned, nearest add	ress:				
Same					
				an particular and an	
We have read the back of this form and the int	ormation provided is acc	urate to the bes	t of our knowledge	е.	
	- M. Innis		10011		
· Owner/Agent Name	Bonded Water Supply/Monitor W	ell Constructor Nam	le Li	icense No.	
Ga.	. Tech Explorati	(M)	12-7.	- 67	
Date Signed	Company	y	D	ate Signed	
Owner/Agent Name	Bonded Water Supply/Monitor W - Tech Fx ployerti Company ight application. The own	Vell Constructor Nam	$\frac{1001}{12-7}$	icense No. - 67 ate Signed ater right th	nroi

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

FOR WATER RESOURCES DEPARTMENT USE ONLY

Date Postmarked \_\_\_\_\_ Date Hand-Delivered \_\_\_\_

Date Region Office Rec'd

W 167838 OWRD Receipt \_\_\_\_\_ Date Fee Received \_\_\_\_\_ Check No.

#### START CARD NOTICE OF BEGINNING OF WELL CONSTRUCTION (as required by ORS 537.762)

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Owner Home	's name and mailing add	ress: <u>Reynolds Metels</u>			
Work Phone:	· ()	Thurblace or 9-	1080		
Туре о	of work: Fee Required:	<ul> <li>New Construction</li> <li>Conversion</li> <li>Deepening Orig. Start</li> </ul>	No Fee Required:	□ Alteration (Rep ⊠ Abandonment	air/Recondition) Orig. Start Card No.93798
		Card No	_		-38 -035
Propos	ed Commencement Date	: 12/7/04	<b>_</b>		
Existin	ng or Proposed Well Dep	th: <u>36</u> Diameter:	2 <sup>11</sup> Original W	Vell I.D. Label Numbe	er:
Use:	Domestic Thermal	Community (Public System)	idustrial Ir Ionitoring O	rigation ther	
Propos	ed Well Location:				
County	Multnoman	Township <u>I</u> Range <u>Eas</u>	Section	14Tax Lot	100
1/4	SW 1/4 50	Z Or Latitude		Longitude	
Street 2	Address of well, if not as	signed, nearest address:			
	Sum				

We have read the back of this form and the information provided is accurate to the best of our knowledge.

	G. McInnis	10011
Owner/Agent Name	Bonded Water Supply/Monitor Well Constructor Name	License No.
	Geo-Tech Explorations	12/7/04
Date Signed	Company	Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

Date Postmarked \_\_\_\_

Date Hand-Delivered

Date Region Office Rec'd

W 167839 OWRD Receipt Date Fee Received \_

Check No.

#### START CARD NOTICE OF BEGINNING OF WELL CONSTRUCTION (as required by ORS 537.762)

FOR WATER RESOURCES DEPARTMENT USE ONLY

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Owner's name and mailing address:	Reynolds Motub			
Home Phone: ( )	5100 Sunction Ref			
Work Phone: ()	Thoutdule, OK 97080			
Type of work: Fee 🗌 N	ew Construction	No Fee	Alteration (Rep	air/Recondition)
Required: 🗌 C	onversion	<b>Required:</b>	Abandonment	Orig. Start
🗆 D	eepening Orig. Start			Card No. 85672
	Card No			15-086
Proposed Commencement Date:	cember 7,2004			
Existing or Proposed Well Depth:	92' Diameter: 2."	Original W	ell I.D. Label Numbe	er:
Use: Domestic Comm	unity (Public System) 🔲 Industrial	I Ir	rigation	
Thermal Injection	on 🖾 Monitoria	ng 🛛 O	ther	
Proposed Well Location:				
County Multhaman Towns	hip Range 3	Section	4Tax Lot	160
1/4 <u>56</u> 1/4 <u>5E</u>	Or Latitude		Longitude	
Street Address of well, if not assigned,	nearest address:			
Selme				
We have read the back of this form	and the information provided is acc	curate to the b	est of our knowledg	ge.
	G. M. Innis		1001	1
Owner/Agent Name	Bonded Water Supply/Monitor V	Well Constructor 1	lame	License No.
	Gro-Tech Explored	tions	12/7	107
Date Signed	Compar	ıy		Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

#### ADDITIONAL IMPORTANT INFORMATION ON BACK.

THE AGEV TO THE DECION OFFICE

Date Postmarked

Date Region Office Rec'd\_

FOR WATER RESOURCES DEPARTMENT USE ONLY W 167840

> OWRD Receipt \_\_\_\_\_ Date Fee Received

Check No.

#### START CARD NOTICE OF BEGINNING OF WELL CONSTRUCTION (as required by ORS 537.762)

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address: Reynolus Mckus	
Home () Stop Sonder Ref	
Work Phone: ( ) Two talkele or 67	08.0
Type of work: Fee I New Construction Required: Conversion Deepening Orig. Start Card No.	No Fee I Alteration (Repair/Recondition) Required: Abandonment Orig. Start Card No. <u>85で7</u> 〜 MW12-184
Proposed Commencement Date: 12/07/04	_
Existing or Proposed Well Depth: Diameter:	المعالم
Use: Domestic Community (Public System) In Thermal Injection	dustrial   Irrigation     Ionitoring   Other
Proposed Well Location:	
County Multhaman Township   Range	3 Section 14 Tax Lot <sup>100</sup>
1/4 <u>S(w)</u> 1/4 <u>SE</u> Or Latitude	Longitude
Street Address of well, if not assigned, nearest address:	
Same	
We have read the back of this form and the information provide	d is accurate to the best of our knowledge.
G-Mc Innis	10011
Owner/Agent Name Bonded Water Supply/	Monitor Well Constructor Name License No.
Geo-Tech Expl	lovention 12/7/04
Datc Signed	Company Date Signed
OWNER PLEASE NOTE: This is not a water right application. The Water Resources Department, if required. The Oregon Health to construction if the well is to be used as a public system.	The owner is responsible for obtaining a water right through h Division requires plans to be submitted and approved prior NFORMATION ON BACK.

THE CODY TO THE DECION OFFICE

Date Postmarked

Date Region Office Rec'd

FOR WATER RESOURCES DEPARTMENT USE ONLY W 167841

> OWRD Receipt \_\_\_\_\_ Date Fee Received \_

#### Check No.

#### START CARD NOTICE OF BEGINNING OF WELL CONSTRUCTION (as required by ORS 537.762)

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address:	Reynolds Mckub		
Home Phone: ( )	\$100 Sendial R.P		
Work Phone: ()	Trootale ok 97080		
Type of work: Fee Required:	New Construction No Conversion Re Deepening Orig. Start Card No	Fee Alteration ( equired: Abandonm	Repair/Recondition) ent Orig. Start Card No. <u>85079</u> Mw15-17.
Proposed Commencement Date: 12	17104		
Existing or Proposed Well Depth:	200' Diameter: $2'$	Original Well I.D. Label N	imber:
Use: Domestic Comr	ion Dunity (Public System) Industrial	□ Irrigation □ Other	
Proposed Well Location:			
County Multhamah Town	ship Range S	Section <u>19</u> Tax I	Lot 100
1/4 <u>SW</u> 1/4 <u>SE</u>	Or Latitude	Longitude	
Street Address of well, if not assigne	d. nearest address:		
Sume	,		
We have read the back of this for	n and the information provided is accurat	te to the best of our know	vledge.
	G. McInnis	107	>()
Owner/Agent Name	Bonded Water Supply/Monitor Well C	Constructor Name	License No.
	Geo-Tech Exploration	uns 1	217164

67842

Amended 10-24-05

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

1.1

wner's name and mailing address:	Reyndos Metals				
lome	5100 SUDVIUL ROD	• 			
Vork hone: ()	Troutzlace				-
ype of work: Fee 🔲 🛚	New Construction	No Fee	Alteration (Rep	pair/Recondit	ion)
Required: 🗌	Conversion	<b>Required:</b>	🗌 Abandonment	Orig. Start	
	Deepening Orig. Start			Card No.	3999
	Card No.			10	0167
roposed Commencement Date: 12	17164				1071
Existing or Proposed Well Depth:	29 Diameter: 2"	Original V	Well I.D. Label Numb	ber:	
Jse: Domestic Comm	ion Industria Monitor	ing DC	rrigation Dther		·
Proposed Well Location:				ί.	
Secondary of the second second		<b>D</b> e et eu	Tel Territor		
LOUDLY MOLENAMAN IOWE	Sarth or South East or Wes	Section		100	
14 SW 1/4 SE	Or Latitude		_ Longitude		
Street Address of well, if not assigned	d. nearest address:				•
~	-,				
Dame	internet in the second s			·	
We have read the back of this form	n and the information provided is ac	curate to the	best of our knowled	lge.	
	G. McImis		1001	.1	
Owner/Agent Name	Bonded Water Supply/Monitor	Well Constructor	Name	License No.	
	Geo-Tech Explant	iun	121	7104	
				Date Cine of	

-----

Date Postmarked

Date Region Office Rec'd

FOR WATER RESOURCES DEPARTMENT USE ONLY W 167843

> OWRD Receipt \_\_\_\_\_ Date Fee Received \_

Check No.

#### START CARD NOTICE OF BEGINNING OF WELL CONSTRUCTION (as required by ORS 537.762)

1

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's nar	ne and mailing add	ress: Reynolds Metal	15			
Home Phone: (	)	5100 Sundial	RI			
Work Phone: (	)	Trastelale OK	97050			
Type of wor	rk: Fee Required:	<ul> <li>New Construction</li> <li>Conversion</li> <li>Deepening Orig. Start Card No</li> </ul>	N F	No Fee Required:	☐ Alteration (Rep ☑ Abandonment	air/Recondition) Orig. Start Card No. <u>冬らんつ</u>
Proposed Co	ommencement Date	: Decembe = 7,2007	· · ·			
Existing or I	Proposed Well Dep	th: <u>100</u> <sup>+</sup> Diamete	er:	Original W	ell I.D. Label Numbe	er:
Use: 🗆 🛙	Domestic 🛛	Community (Public System)	🗖 Industrial	🗖 Irr	igation	
ГП	Thermal	Injection	X Monitoring	🗆 Ot	her	
Proposed W	ell Location:					
County _ P	Witnemah_	Township Rang	ge <u>3</u> Æast or West	Section	Tax Lot	106
1/4 <u> </u>	→ 1/4 <u>S</u>	Or Latitude			Longitude	
Street Addre	ess of well, if not as	signed, nearest address:				
Sa	m C-	• • •				

We have read the back of this form and the information provided is accurate to the best of our knowledge.

	G. HEIMIS	1001
Owner/Agent Name	Bonded Water Supply/Monitor Well Constructor Name	License No.
	Gro-Ten Exploration	12/7/04
Date Signed	Company	Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

167-844

Amend 10-24-05

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address: Reyn	old Metels			1.
Home Phone: () 350	o Sundial Ref			
Work Phone: () Two	black, OK 97080		•	·
Type of work: Fee 🗌 New Con	struction	No Fee	] Alteration (Repa	ir/Recondition)
Required: 🗌 Conversio	D <b>n</b>	Required:	Abandonment	Orig. Start
🗖 Deepenin	g Orig. Start	· · · · ·		Card No
· · · · · · · · · · · · · · · · · · ·	Card No.		M	ult 53990
Proposed Commencement Date: 12/7/09	ſ			39-095
Existing or Proposed Well Depth:	-95 Diameter:	Original Well	I.D. Label Number	:
Use: Domestic Community (Pu	iblic System) 🛛 Industrial	🗆 Irriga	tion	·
Thermal Injection	Monitoria	ng 🗌 Other	ſ	· · · · · · · · · · · · · · · · · · ·
Proposed Well Location:				
County Multnaman Township	Range 3	Section	۲Tax Lot	100
Nor	th or South (Eastfor West			· · · ·
1/4 SW 1/4 SE 0	r Latitude	Lo	ongitude	
	•			
Street Address of well, if not assigned, nearest	address:			
Sume				· · · · · · ·
	· · · · · · · · · · · · · · · · · · ·		Man (1997)	
We have read the back of this form and the	e information provided is acc	curate to the bes	t of our knowledg	e
	G. H. Innis		1001	
Owner/Agent Name	Bonded Water Supply/Monitor	Well Constructor Nam	e L	icense No.

 Owner/Agent Name
 Bonded Water Supply/Monitor Well Constructor Name
 License No.

 Cro-Tch
 Croplantics
 12/07/07

 Date Signed
 Company
 Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

Date Postmarked \_

Date Region Office Rec'd\_

FOR WATER RESOURCES DEPARTMENT USE ONLY W 167850 OWRD Receipt Date Fee Received

#### Check No.

#### START CARD NOTICE OF BEGINNING OF WELL CONSTRUCTION (as required by ORS 537.762)

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Owner's name and mailing address:ReynoHome5100Phone: ()5100WorkTrooted	Jo Metals Bunctical RJ alc Or 97080			
Type of work: Fee INew Constr Required: Conversion Deepening	uction Orig. Start Card No	No Fee Required:	□ Alteration (Rep Abandonment	air/Recondition) Orig. Start Card No. <u>973719</u> 37-012
Proposed Commencement Date: 1217104				
Existing or Proposed Well Depth: $21.5^{\circ}$ Use: $\Box$ Domestic $\Box$ Community (Publ	Diameter: २ " c System) □ Industrial	Original Wo	ell I.D. Label Numbe	r:
Proposed Well Location:	i Ai Montornie			ant
County Molthornah Township	Range <u>3</u> South East or West	Section	<u> </u>	60
1/4 <u>Sw</u> 1/4 <u>SE</u> Or	_atitude	· · · · · · · · · · · · · · · · · · ·	Longitude	
Street Address of well, if not assigned, nearest ad $Same$	lress:			

We have read the back of this form and the information provided is accurate to the best of our knowledge.

	G. McInnis	10011
Owner/Agent Name	Bonded Water Supply/Monitor Well Constructor Name	License No.
	Go-Trun Explorations	12/7/04
Date Signed	Company	Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

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Owner's name and mailing address:	Reynolds Metrus			
Home Phone: ( )	5100 Sundial RD			
Work Phone: ()	Troublak, OK 97080			
Type of work: Fee	v Construction	No Fee	Alteration (Rep	air/Recondition)
Required: 🗌 Cor	iversion	<b>Required:</b>	Abandonment	Orig. Start
Dee	pening Orig. Start			Card No. 10016
Proposed Commencement Date: 121-	Card No			41-020
Existing or Proposed Well Depth:	20.3 Diameter: <u>2</u> "	Original W	ell I.D. Label Numbe	r:
Use: Domestic Community Thermal Injection	ity (Public System) Industrial	g □ O	igation ther	
Proposed Well Location:				
County <u>Hultnomen</u> Township	P Range 3 Kopth or South East or West	Section	Tax Lot	00
1/4 56 1/4 55	Or Latitude		Longitude	
Street Address of well, if not assigned, no	earest address:			
Same				
We have read the back of this form an	nd the information provided is acc	urate to the b	est of our knowledg	e.
	G. M. Innis		1001	
Owner/Agent Name	Bonded Water Supply/Monitor W	ell Constructor N	ame L	icense No.
	Geor Ten Explore	tims	12/7	57
Date Signed	Company	/	I	Date Signed
OWNER PLEASE NOTE: This is not	a water right application. The own	er is responsi	ble for obtaining a w	ater right through

the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

FOR WATER RESUL	JRCES DEPARTMENT USE ONLY
Date Hand-Delivered	OWRD Receipt
Date Region Office Rec'd	Date Fee Received
	Check No.

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and maili	ng address: <u>Reynolds Metels</u>			
Home Phone: ( )	5100 NW Sunction	R_P		
Work Phone: ()	Troutdule OK 9702	30		
Type of work: Fee	New Construction	No Fee	Alteration (Rep	air/Recondition)
Requi	red: 🗌 Conversion	<b>Required:</b>	🔀 Abandonment	Orig. Start
	🗖 Deepening 🛛 Orig. Start			Card No.10016
	Card No			43-015
Proposed Commencemen	nt Date: 12/09/07			
Existing or Proposed We	ll Depth: <u>15.3</u> Diameter: <u>2</u>	Original W	ell I.D. Label Numbe	er:
Use: Domestic	Community (Public System)	strial 🛛 🗆 Irr	igation	
□ Thermal	Injection 🖾 Mon	itoring 🛛 🗆 Ot	her	
Proposed Well Location:				
County Multhame	Township Range North or South Range	West Section	<u></u> Tax Lot	100
1/4 50 1/4	<u>SE</u> Or Latitude		Longitude	
Street Address of well, if	not assigned, nearest address:			
Same				
We have read the back	of this form and the information provided is	s accurate to the b	est of our knowledg	ge.
F1000	G. M. Innis		10011	
Owner/Agent Nam	e Bonded Water Supply/Mor	hitor Well Constructor N	ime L	License No.
	Gro - Tran Explu	retions	12/7	107
Date Signer	d Co	mpany	Γ	Date Signed
OWNER PLEASE NO	TE. This is not a water right annlication. The	owner is responsi	ble for obtaining a w	vater right through
the Water Resources D	epartment, if required. The Oregon Health D	ivision requires pl	ans to be submitted	and approved prior

to construction if the well is to be used as a public system. ADDITIONAL IMPORTANT INFORMATION ON BACK.

\*\*\*\*\*

	FOR WATER RESOURCES	DEPARTMENT USE UNLT
Date Postmarked		w 16/853
Date Hand-Delivered		OWRD Receipt
ate Region Office Rec'd		Date Fee Received
		Check No.

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address: <u>Rey</u>	noldo Matub			
Home Phone: ( ) 5100	Sundial R.P.			
Work Phone: ()	state 012 97080			
Type of work: Fee INew Con Required: Conversi Deepenin	struction on ng Orig. Start Card No.	No Fee Required:	Alteration (Repairs)	air/Recondition) Orig. Start Card No. <u>10017</u> ムケンのフ
Proposed Commencement Date: December	-7,2007			U I
Existing or Proposed Well Depth:	Diameter:`	Original W	ell I.D. Label Numbe	r:
Use: Domestic Community (Pr	ublic System) 🗖 Industrial 🖾 Monitorin	g □ Irr	igation her	
Proposed Well Location:				
County Hultnoman Township	h or South Range 3	_ Section	<u>14</u> Tax Lot _	100
1/4 <u>Sw</u> 1/4 <u>BS</u> 0	r Latitude		Longitude	1
Street Address of well, if not assigned, nearest	address:			
Sume				
We have read the back of this form and the	e information provided is acc	urate to the b	est of our knowledg	ge.
	G. M. Innis		1001	
Owner/Agent Name	Bonded Water Supply/Monitor Well Constructor Name		ame I	license No.
	Gro-Ten Exploration	<u>ب</u>	12171	<u> </u>
Date Signed	Company	1	I	Date Signed
OWNER PLEASE NOTE: This is not a wat the Water Resources Department, if require to construction if the well is to be used as a	ter right application. The own ed. The Oregon Health Divisio public system.	er is responsi on requires pl	ble for obtaining a w ans to be submitted	vater right through and approved prior
Date Postmarked \_\_\_\_\_ Date Hand-Delivered\_

4

Bate Region Office Rec'd

FOR WATER RESOURCES DEPARTMENT USE ONLY

W **167854** OWRD Receipt \_\_\_\_

Date Fee Received Check No.

START CARD NOTICE OF BEGINNING OF WELL CONSTRUCTION (as required by ORS 537.762)

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Owner's name and mailing address: Gro-True Explorations			
Home			
Phone: (			
Phone: ( )			
Type of work: Fee	No Fee	] Alteration (Repa	ir/Recondition)
Required: Conversion	Required: 🙀	Abandonment	Orig. Start
🗖 Deepening 🛛 Orig. Start			Card No. (27344
Card No			MW08-027
Proposed Commencement Date: 12/7/07			
Existing or Proposed Well Depth: <u>28</u> Diameter: <u>2</u>	Original Well	I.D. Label Number	r:
Use: Domestic Community (Public System) Industrial	🗖 Irriga	tion	
Thermal Injection X Monitoring	□ Other	r	
Proposed Well Location:			-
County Mult nomine Township Range 3 East or West	Section	Tax Lot	100
$1/4 \underline{5} \underline{5} \underline{5} \underline{5} \underline{5} \underline{5} \underline{5} \underline{5}$	Lo	ngitude	
Street Address of well, if not assigned, nearest address:			
Sume			
We have read the back of this form and the information provided is accur	rate to the best	of our knowledge	e.

	(r. Vic Innis	10011
Owner/Agent Name	Bonded Water Supply/Monitor Well Constructor Name	License No.
· · · · · · · · · · · · · · · · · · ·	Go-Ton Explorations	1217107
Date Signed	Company	Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

	FOR WATER RESOURCES D	DEPARTMENT USE ONLY	
Date Postmarked		w <b>167855</b>	
Date Hand-Delivered		OWRD Receipt	
Date Region Office Rec'd	and the second	Date Fee Received	
		Check No.	
*	START	CARD	

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Home       Star Sun Start Rel         Work       Translature, or 17082         Phone: ()       Translature, or 17082         Type of work:       Fee       New Construction         Required:       Conversion       Required:       Alteration (Repair/Recondition)         Required:       Conversion       Required:       Abandonment       Orig. Start         Card No.	Owner's name and mailing address:	molds Matels			
None:	Home Phone: ( )	San from Q D			
Type of work:       Fee       New Construction       No Fee       Alteration (Repair/Recondition)         Required:       Conversion       Required:       Abandonment       Orig. Start         Deepening       Orig. Start       Card No.       Point       Card No.       Point         Proposed Commencement Date: $12171097$ Card No.       Point       Abandonment       Orig. Start         Existing or Proposed Well Depth: $32^\circ$ Diameter: $2^\circ$ Original Well I.D. Label Number:       Point         Use:       Domestic       Community (Public System)       Industrial       Irrigation         Proposed Well Location:       Output:       Section       14       Tax Lot       100         County       Tube       Industrial       Irrigation       Industrial       Irrigation         Proposed Well Location:       County       Township       Near       Section       14       Tax Lot       100         Street Address of well, if not assigned, nearest address:       Count       Longitude       Image:       Image:       Image:         Owner/Agent Name       Genter Supply/Monitor Well Constructor Name       Image:       Image:       Image:       Image:         Owner/Agent Name       Genther Supply/Moni	Work         You           Phone: ()         Type	statute on 97080			
Required:       Conversion       Required:       Abandonment       Orig. Start         Deepening Orig. Start       Card No.       Card No.       Card No.       70/53         Proposed Commencement Date:       12/71/04       MW9-030       MW9-030         Proposed Well Depth:       32'       Diameter:       2'       Original Well I.D. Label Number:         Use:       Domestic       Community (Public System)       Industrial       Irrigation         Proposed Well Location:       Community (Public System)       Industrial       Irrigation         County       Proposed Well Location:       Township       1       Range       3       Section       1/1       Tax Lot       1/00         County       Proposed Well Location:       Cont       Latitude       Longitude	Type of work: Fee 🗌 New Co	nstruction	No Fee	Alteration (Repa	ir/Recondition)
Deepening Orig. Start       Card No         Card No       M W 9-030         Proposed Commencement Date:       12/7104         Existing or Proposed Well Depth:       32'       Diameter:       2'       Original Well I.D. Label Number:          Use:       Domestic       Community (Public System)       Industrial       Irrigation         Thermal       Injection       M Monitoring       Other          Proposed Well Location:       County       Manage       3       Section       14'         County       Mainton       Range       3       Section       14'       I/2         I/4       Street Address of well, if not assigned, nearest address:       Counts       I/2       I/2       I/2       I/2         Owner/Agent Name       Generate Street Street Street Name       Generate Street Street Street Name       I/2       I/2       I/2       I/2         Owner/Agent Name       Generate Street Street Street Name       I/2       I/2 <thi 2<="" th=""> <thi 2<="" th="">       I/2       <thi 2<="" th=""></thi></thi></thi>	Required: 🗌 Convers	sion	<b>Required:</b>	Abandonment	Orig. Start
Card No.       MW9-030         Proposed Commencement Date: $1217104$ Existing or Proposed Well Depth: $32'$ Diameter: $2'$ Original Well LD. Label Number:	🗖 Deepeni	ng Orig. Start	-		Card No. 70153
Proposed Commencement Date: $1 \ge 1 \ge$	-	Card No.			MW9-030
Existing or Proposed Well Depth: $32'$ Diameter: $2^*$ Original Well I.D. Label Number:         Use:       Domestic       Community (Public System)       Industrial       Irrigation         Thermal       Injection       Monitoring       Other       Other         Proposed Well Location:       County       Township       I       Range       3       Section       141       Tax Lot       100         County       rts/remain       Township       I       Range       3       Section       141       Tax Lot       100         Monitoring       Or       Latitude       Longitude       Longitude	Proposed Commencement Date: 121710-	(			Υ.
Use:       Domestic       Community (Public System)       Industrial       Irrigation         Proposed Well Location:       Monitoring       Other       Other         County       Multimeman       Township       Image       3       Section       14       Tax Lot       100         1/4       Steet Address of well, if not assigned, nearest address:       Image       I	Existing or Proposed Well Depth: 32.	Diameter: <u>2</u>	_ Original We	ell I.D. Label Numbe	r:
Proposed Well Location:         Countyfit_nomum	Use: Domestic Community (I	Public System) 🗖 Industrial 🖾 Monitoring		gation	
County_rLibnamum_Township       Image       Range       Section       Tax Lot       100         1/4       SW       1/4       SW       Longitude       Longitude         1/4       SW       1/4       SW       Longitude         1/4       SW       0r Latitude       Longitude         Street Address of well, if not assigned, nearest address:	Proposed Well Location:				
1/4       SE       Or Latitude       Longitude         Street Address of well, if not assigned, nearest address:       Game         Sume       Game       Image: Second secon	County Mathaman Township	Range <u>3</u> Torth or South East or West	Section	<u>-1</u> Tax Lot	100
Street Address of well, if not assigned, nearest address: <u>Gume</u> We have read the back of this form and the information provided is accurate to the best of our knowledge. <u>Owner/Agent Name</u> <u>Gume</u> <u>Owner/Agent Name</u> <u>Date Signed</u> <u>Company</u> <u>Date Signed</u> <u>Gume</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Company</u> <u>Com</u>	1/4 <u>5</u> 01/4 <u>5</u> 2	Dr Latitude	1	Longitude	
Sume       G. M. Junis       10011         Owner/Agent Name       Bonded Water Supply/Monitor Well Constructor Name       License No.         Date Signed       Company       Date Signed	Street Address of well, if not assigned, neares	t address:			
We have read the back of this form and the information provided is accurate to the best of our knowledge.       I (Doit)         Owner/Agent Name       Bonded Water Supply/Monitor Well Constructor Name       I (Doit)         Date Signed       Company       I 217107         Date Signed       Company       Date Signed	Same		· · ·	,	
G. M-Jnnis     10011       Owner/Agent Name     Bonded Water Supply/Monitor Well Constructor Name     License No.       Con-Ton Explorations     12/7107       Date Signed     Company     Date Signed	We have read the back of this form and the	e information provided is accu	rate to the be	st of our knowledg	e.
Owner/Agent Name     Bonded Water Supply/Monitor Well Constructor Name     License No.       Cost     Cost     Explore     12/7107       Date Signed     Company     Date Signed		G. M-Innis		1000	
Date Signed Company Date Signed	Owner/Agent Name	Bonded Water Supply/Monitor We	ll Constructor Na	me L	icense No.
Date Signed Company Date Signed		Co-Tin Exploratio	<u>n</u> , ,	12/71	70
	Date Signed	Company		D	ate Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

ONLY
61826
Receipt
e Received
No
epartment, 725 Summer Street NE Suite A, donments. This original must be mailed or vell construction, conversion, and istructor shall provide a legible copy of this pened, or abandoned using one of the to commencement of work; (b) by hand is commenced. If method (c) is used, a an the day work is commenced. The Water
ee or rk th:

Owner's name and mailing addre	ess: Reyonales Michals			
Home Phone: ( )	5100 and Rd			
Work Phone: ()	Trootelace ok			
Type of work: Fee Required:	<ul> <li>New Construction</li> <li>Conversion</li> <li>Deepening Orig. Start Card No</li> </ul>	No Fee Required:	☐ Alteration (Rep ☐ Abandonment	air/Recondition) Orig. Start Card No. <u>31122</u> MW20-026
Proposed Commencement Date:	12/7/07			
Existing or Proposed Well Depth	: <u>26.5</u> Diameter: <u>2</u>	Original W	/ell I.D. Label Numbe	er:
Use: Domestic C DThermal	ommunity (Public System)IndustrialnjectionX Monitorir	ng 🗆 O	rigation ther	
Proposed Well Location:				
County 1-1214 noman 1	Township Range Ran	_ Section	<u>14</u> Tax Lot	100
1/4 <u>SW</u> 1/4 <u>SF</u>	Or Latitude		Longitude	
Street Address of well, if not assi	igned, nearest address:			
Sume				
We have read the back of this	form and the information provided is acc	urate to the b	est of our knowledg	ge.
	G. M. Innia		100	(1
Owner/Agent Name	Bonded Water Supply/Monitor V	ell Constructor N	lame L	License No.
	Cro-Tech Explore	tions	1217	107
Date Signed	Compan	y	Γ	Date Signed
OWNER PLEASE NOTE: Thi the Water Resources Departme to construction if the well is to	s is not a water right application. The own ent, if required. The Oregon Health Divisi be used as a public system. ADDITIONAL IMPORTANT INFORT	er is responsi on requires pl MATION ON	ble for obtaining a w lans to be submitted BACK.	vater right through and approved prior

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ate Postmarked	w <b>167857</b>
ate Hand-Delivered	OWRD Receipt
Tate Region Office Rec'd	Date Fee Received
	Check No.
P	START CARD
NOTICE OF BEG	GINNING OF WELL CONSTRUCTION
(95 m	equired by ORS 537 762)

delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner Home Phone: Work Phone:	's name a ()	nd mailing a	ddress:	Reyr 5100 Traul	Sundia Sundia	r G-	1080				
Туре о	f work:	Fee		New Cons	truction			No Fee	🗌 Alterat	ion (Rep	air/Recondition)
		<b>Required</b> :		Conversio	n			<b>Required</b> :	Aband	onment	Orig. Start
				Deepening	Orig. Sta	rt			•		Card No. 81473
					Card No.						- 22-027
Propos	ed Comm	nencement D	ate: 🖣 2	1704			•				
Existin	g or Prop	osed Well D	epth:	27'	Dia	meter:	2"	Original V	Well I.D. Lab	el Numbe	er:
Use:	Dome There	estic [ mal [	☐ Comn ☐ Injecti	nunity (Pul ion	olic System)	) [] [2]	] Industrial ] Monitorir		rrigation Other		
Propos	ed Well L	Location:									
County	MULH	nomuh	_ Town	ship	I or South	Range _	ے East or West	Section	<u>14</u>	Гах Lot _	100
1/4	362	1/4	<u>5</u> E	Or	Latitude _				_ Longitude _		
Street A	Address o	of well, if not	assigned	l, nearest a	ddress:						
<	Dame		C								
We ha	ve read t	he back of	this forr	n and the	informatio	n provi	ded is acc	urate to the	best of our k	mowledg	ge.

	G. M. Innis	10011
Owner/Agent Name	Bonded Water Supply/Monitor Well Constructor Name	License No.
	Gro-Ten Explorentions	12/7/07
Date Signed	Ċompany	Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

FOR WATER RESOURCES	DEPARTMENT USE ONLY
Date Postmarked	w 167858
Date Hand-Delivered	OWRD Receipt
Date Region Office Rec'd	Date Fee Received
	Check No.

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address: Reynolds Maker		
Home $()$ $()$ $()$ $()$ $()$ $()$ $()$ $()$		
Work Phone: () Troutdate Ore 9708	16	
Type of work: Fee 🗌 New Construction	No Fee 🛛 Alteration (Re	pair/Recondition)
Required: 🗌 Conversion	Required: 🕅 Abandonment	Orig. Start
🗖 Deepening 🛛 Orig. Start		Card No. <u> </u>
Card No		25-035
Proposed Commencement Date: 1217107		
Existing or Proposed Well Depth: 35.5 Diameter: 2	Original Well I.D. Label Num	oer:
Use: Domestic Community (Public System) Indus Thermal Injection Monit	trial Irrigation toring Other	
Proposed Well Location:		
County Multnuman Township 1 Range 3 North or South East or V	Section <u>14</u> Tax Lot West	100
1/4 <u>うい</u> 1/4 <u>うに</u> Or Latitude	Longitude	
Street Address of well, if not assigned, nearest address:		
Sume		
We have read the back of this form and the information provided is	accurate to the best of our knowled	lge.
G. McInnis	10	o y
Owner/Agent Name Bonded Water Supply/Moni	itor Well Constructor Name	License No.
bro-Tion Explore	tion 12	71.07 Det: 8 1
Date Signed Cor	mpany	Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

Date Region Office Rec'd	Date Fee Received	
	Check No.	

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address:	Reynolds Makuls			
Home Phone:	5			
Work				
Phone: ()	Tratelete 6k 97050			
Type of work: Fee 🗌 🛙	New Construction	No Fee	Alteration (Rep	air/Recondition)
Required: 🔲 🤇	Conversion	<b>Required:</b>	Abandonment	Orig. Start
- I []	Deepening Orig. Start			Card No. 93822
_	Card No.			37-030
Proposed Commencement Date: 12	1107			
Existing or Proposed Well Depth:	<u>30.5</u> Diameter: <u>2</u> "	Original V	Vell I.D. Label Numbe	er:
Use: Domestic Comm	unity (Public System) 🛛 Industrial	🗖 Ir	rigation	
Thermal Injecti	on 🖾 Monitorir	g □o	ther	
Proposed Well Location:		-		
County Haltnomen Town	ship Range North or South Eastor West	Section	Tax Lot	160
1/4 <u>SW</u> 1/4 <u>SE</u>	Or Latitude		Longitude	
Street Address of well, if not assigned	, nearest address:			
Sume				
We have read the back of this form	n and the information provided is acc	urate to the b	best of our knowledg	ge.
	G. M. Innin		1001	I
Owner/Agent Name	Bonded Water Supply/Monitor W	Vell Constructor N	Jame I	License No.
	Ges. Tem Exolur.	ticos	121	707

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

Date Signed

ADDITIONAL IMPORTANT INFORMATION ON BACK.

Company

Date Signed

FOR WATER RESOURC	ES DEPARTMENT USE ONLY
Date Postmarked	w <b>167860</b>
Date Hand-Delivered	OWRD Receipt
Date Region Office Rec'd	Date Fee Received
	Check No.
Å	

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner	r's name	e and mailing ad	dress: <u>Reyna</u>	1.12 Michal	Is			
Home Phone	: (	)	5100	Sundia	RP			
Work Phone	: (	)	Troote	hale or	97680			
Туре	of work	: Fee	□ New Cor	struction		No Fee	🗖 Alteration (Rep	air/Recondition)
		Required:	🗖 Conversi	on		<b>Required:</b>	🔀 Abandonment	Orig. Start
			🔲 Deepenir	ig Orig. Star	t			Card No. 100164
				Card No				41-033
Propos	sed Com	mencement Dat	e: 12/7/0	-1				
Existin	ng or Pro	oposed Well De	pth: <u>29</u>	Dian	neter: ''	Original V	Well I.D. Label Numb	er:
Use:	Do Do The	mestic 🗌 ermal 🗌	Community (P Injection	ublic System)	☐ Industrial )⊄ Monitorin		rrigation Other	
Propos	sed Well	l Location:						
Count	y_ <u>F1</u>	, Itnomah	Township	N Rath or South	ange <u>3</u> East or West	Section	Tax Lot	¥00
1/4	512	1/4	<u> 56</u> 0	r Latitude			_ Longitude	
Street	Address	s of well, if not a	ssigned, nearest	address:				
	Sam	$1 \subset $						
We ha	ave read	d the back of th	is form and the	e information	provided is acc	urate to the l	best of our knowled	ge.

	G. HLIMIN	Oply
Owner/Agent Name	Bonded Water Supply/Monitor Well Constructor Name	License No.
	Geo-Teur Explorations	12-1-67
Date Signed	Company	Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

Date Postmarked	w <b>167861</b>
Date Hand-Delivered	OWRD Receipt
Bate Region Office Rec'd	Date Fee Received
	Check No.
	START CARD
NOTICE OF BE	GINNING OF WELL CONSTRUCTION
(05 10	equired by ORS 537 762)

Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address:	Reynolds Metals			
Home Phone: ( )	Sius Andial R.P			
Work Phone: ()	Troutdate Ore 47000			
Type of work: Fee INe Required: Co	w Construction nversion	No Fee Required:	Alteration (Rep.	air/Recondition) Orig Start
	epening Orig. Start	requireur		Card No. $100171$
	Card No.			45.047
Proposed Commencement Date: 12	- 7-07			
Existing or Proposed Well Depth:	3' Diameter: 2"	Original W	ell I.D. Label Numbe	er:
Use: Domestic Commun Thermal Injection	nity (Public System) Industrial	g □ Ir	rigation ther	
Proposed Well Location:				
County Haltnameth Townsh	ip Range North or South Eastor West	_ Section	1 4Tax Lot	100
1/4 1/4 _ 52	Or Latitude		Longitude	
Street Address of well, if not assigned, r	nearest address:			
Same				
We have read the back of this form a	nd the information provided is acc	urate to the b	est of our knowledg	je.
	G. M-Innin		10011	
Owner/Agent Name	Bonded Water Supply/Monitor W	ell Constructor N	ame L	icense No.
	Geor Tech Explorat	iuns	12	· 7,64
Date Signed	' Company	/	I	Date Signed
OWNER PLEASE NOTE: This is not the Water Resources Department, if r to construction if the well is to be used AD	a water right application. The own equired. The Oregon Health Divisio l as a public system. DITIONAL IMPORTANT INFORM	er is responsi on requires p 1ATION ON	ble for obtaining a w lans to be submitted BACK.	vater right through and approved prior *******

FOR	WATER RESOURCES DEPART	MENT USE ONLY	\$2
Date Hand-Delivered		OWRD Receipt	
Date Region Office Rec'd		Date Fee Receiv	ed
3		Check No.	
Ċ	START CAR	D	
NOT	ICE OF BEGINNING OF WELL	CONSTRUCTION	
	(as required by OKS 5.	57.702)	
This form must be completed and the original Salem OR 97301-1271 for all new construct delivered before work is commenced. A state deepenings (make checks payable to the Notice to the region office within which the following methods: (a) by regular mail not delivery, during regular office hours before legible copy of the start card shall also be Resources Commission has authority to im to submit the \$125 fee in a timely manner,	inal mailed or delivered to the Water action, conversion, alteration, deeper 6125 fee shall accompany the origina Water Resources Department). In ad e well is being constructed, converte later than three (3) calendar days (72 work is commenced; or (c) by FA2 mailed or delivered to the region offi- pose civil penalties for failure to sub and for failure to timely submit start	Resources Department ning and abandonments l for all new well const dition, the constructor s d, altered, deepened, or 2 hours) prior to common K before work is common the no later than the day point the required \$125 t cards.	t, 725 Summer Street NE Suite A, s. This original must be mailed or ruction, conversion, and shall provide a legible copy of this r abandoned using one of the encement of work; (b) by hand enced. If method (c) is used, a y work is commenced. The Water fee with the start card, for failure
Owner's name and mailing address:	Reynolds Maters	•	
Home Phone: ()	5100 Suntial RD		
Work Phone: ( )	Footdale OR 97080		
Type of work: Fee	Construction	No Fee 🔲 Alte	ration (Repair/Recondition)
Required: 🗍 Conv	version	Required: 🖾 Aba	ndonment Orig. Start
🗖 Deep	ening Orig. Start		Card No. 182598
	Card No.		54-050
Proposed Commencement Date: 1210	7107		
Existing or Proposed Well Depth:	Diameter: 2"	Original Well I.D. I	abel Number:
Use: Domestic Communit	y (Public System) Industrial	☐ Irrigation	
Thermal Injection	🔀 Monitorin	g 🛛 Other	
Proposed Well Location:			
County Holtnoman Township	Range 3 North or South East or West	Section <u>14</u>	Tax Lot
1/4 50 1/4 55	Or Latitude	Longitud	le
Street Address of well if not assigned neg	arest address.		·
- Dame			
We have read the back of this form and	d the information provided is accu	urate to the best of ou	ir knowledge.
	G. HILINNIS		1004
Owner/Agent Name	Bonded Water Supply/Monitor W	ell Constructor Name	License No.
Date Signed	Company	1	Date Signed
OWNER PLEASE NOTE: This is not a the Water Resources Department, if rec to construction if the well is to be used a ADDI	water right application. The own quired. The Oregon Health Division as a public system. TIONAL IMPORTANT INFORM	er is responsible for o on requires plans to be 1ATION ON BACK.	btaining a water right through e submitted and approved prior

FOR WATER R	ESOURCES DEPARTMENT USE ONLY
Date Postmarked	w <b>167863</b>
Date Hand-Delivered	OWRD Receipt
Date Region Office Rec'd	Date Fee Received
	Check No.
	START CARD
NOTICE OF BE	GINNING OF WELL CONSTRUCTION

(as required by ORS 537.762)

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address: Reypolds Michael			
Home			
Phone: () 5100 Son d VC.P		-	
Phone: () Trustale OK 97057			
Type of work: Fee  New Construction	No Fee	Alteration (Rep	air/Recondition)
Required: 🗌 Conversion	<b>Required:</b>	Abandonment	Orig. Start
Deepening Orig. Start	•	77	Card No. 7 994.6
Card No.			Mula ogt
Caru 10.			MULTI 75515
Proposed Commencement Date: 12/10 Y			y-10101 / 521-
Existing or Proposed Well Depth: Diameter:	Original W	/ell I.D. Label Numbe	er:
Use: Domestic Community (Public System) Industria	1 🗆 In	rigation	
$\Box \text{ Thermal} \qquad \Box \text{ Injection} \qquad \blacksquare Monitorial$		ther	
Proposed well Location:			
County Hallen Mark Township I Range 3	Section	Tax Lot	100
1/4 1/4 Or Latitude		Longitude	
Street Address of well, if not assigned, nearest address:			
Sume			
		· · · · · · · · · · · · · · · · · · ·	
We have read the back of this form and the information provided is acc	curate to the b	est of our knowledg	re.
		Link	,
<u>(&gt;, 1/2 Inn')</u>			1. X7.

	6. MILIND	7000
Owner/Agent Name	Bonded Water Supply/Monitor Well Constructor Name	License No.
	Geotten Explorations	12/7/07
Date Signed	Company	Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

ADDITIONAL IMPORTANT INFORMATION ON BACK.

FOR WATER RESOURCES DEPARTMENT USE ONLY
Date Postmarked \_\_\_\_\_\_ W 167864
Date Hand-Delivered \_\_\_\_\_\_ OWRD Receipt \_\_\_\_\_
Date Region Office Rec'd \_\_\_\_\_\_ Date Fee Received \_\_\_\_\_\_
Check No. \_\_\_\_\_\_

## START CARD NOTICE OF BEGINNING OF WELL CONSTRUCTION (as required by ORS 537.762)

a

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address: $\underline{Rc}$	Inoldo Malabo			
Home Phone: ( )	22 Sankiel Ref			
Work Phone: ()	11telule, 04 97087			
Type of work: Fee 🗌 New Co	onstruction	No Fee	Alteration (Repa	ir/Recondition)
Required: 🛛 🗌 Conver	sion	<b>Required:</b>	🔀 Abandonment	Orig. Start
🗖 Deepen	ing Orig. Start			Card No. 79938
	Card No.			MWat 06
Proposed Commencement Date: 121710				ţ
Existing or Proposed Well Depth: $_{\ell \varphi \varsigma}$	Diameter: <sup>1</sup>	Original W	ell I.D. Label Numbe	r:
Use: Domestic Community (	Public System) 🛛 Industrial	🗖 Irr	igation	
Thermal Injection	🕅 Monitorin	g 🛛 Ot	her	
Proposed Well Location:				
County +1014 00 man Township	Range 3	_ Section	14Tax Lot/	60
1/4 500 1/4 SE	Or Latitude		Longitude	
Street Address of well, if not assigned, neare	st address:			
Sume				
We have read the back of this form and t	he information provided is acc	urate to the b	est of our knowledg	е.
	G. M. Innis		1 00 1	
Owner/Agent Name	Bonded Water Supply/Monitor W	ell Constructor N	ame L	icense No.
	G. Ten Explore to	000	1217	107
Date Signed	Company	1	D	ate Signed

de la

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

FOR WATER RE	SOURCES DEPARTMENT USE ONLY
Date Postmarked	w 167865
Date Hand-Delivered	OWRD Receipt
Date Region Office Rec'd	Date Fee Received
	Check No.
3	START CARD

NOTICE OF BEGINNING OF WELL CONSTRUCTION

(as required by ORS 537.762)

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address: Reynolds Mich	uls			
Home Sig. Sug. Sug.	0 0			
Work	19-t			······································
Phone: () Trastalucte ov	2 47080			
Type of work: Fee 🗌 New Construction		No Fee	Alteration (Rep	air/Recondition)
Required: Conversion		<b>Required:</b>	🔀 Abandonment	Orig. Start
Deepening Orig. Sta	art			Card No. 100613
Card No.				51-069
Proposed Commencement Date: 1210104				
Existing or Proposed Well Depth: $0.4$ Dia	meter: 2 '	_ Original W	ell I.D. Label Numbe	er:
Use: Domestic Community (Public System	) 🛛 Industrial	🗆 In	rigation	
☐ Thermal ☐ Injection	Monitoring		her	
Proposed Well Location:	, ,			
County Multnoman Township 1	Range <u>3</u> East or West	Section	<u> </u>	
1/4 <u>50</u> 1/4 <u>56</u> Or Latitude			Longitude	
Street Address of well, if not assigned, nearest address:				
Same				
We have read the back of this form and the information	n provided is accu	rate to the b	est of our knowledg	e.
C . M.	The set is		1004	,
Owner/Agent Name Bonded V	Vater Supply/Monitor We	Il Constructor N	ame L	license No.
Grovit	The Explore t	1000	121-	7107
Date Signed	Company		I	Date Signed
OWNER PLEASE NOTE: This is not a water right app the Water Pesources Department if required. The Ore	dication. The owne	r is responsi	ble for obtaining a w	vater right through
to construction if the well is to be used as a public system	gon neath Division n.	ii requires pi	ans to be submitted	and approved prior
ADDITIONAL IMPO	RTANT INFORM	ATION ON	BACK.	
*************	******	******	*****	*****

FOR WATER RESOURCE	CS DEPARTMENT USE ONLY W 167866 OWRD Receipt Date Fee Received
	Check No.
STAR NOTICE OF BEGINNING (as required	T CARD of well construction Amended by ORS 537.762) Amended
This form must be completed and the original mailed or delivered alem OR 97301-1271 for all new construction, conversion, alter elivered before work is commenced. A \$125 fee shall accompar- eepenings (make checks payable to the Water Resources Depar- otice to the region office within which the well is being construc- ollowing methods: (a) by regular mail no later than three (3) calc elivery, during regular office hours before work is commenced; egible copy of the start card shall also be mailed or delivered to the Resources Commission has authority to impose civil penalties for o submit the \$125 fee in a timely manner, and for failure to time	to the Water Resources Department, 725 Summer Street NE Suite A, ration, deepening and abandonments. This original must be mailed or by the original for all new well construction, conversion, and tment). In addition, the constructor shall provide a legible copy of this ted, converted, altered, deepened, or abandoned using one of the endar days (72 hours) prior to commencement of work; (b) by hand or (c) by FAX before work is commenced. If method (c) is used, a he region office no later than the day work is commenced. The Water failure to submit the required \$125 fee with the start card, for failure by submit start cards.
Owner's name and mailing address: Reynolds Make	
$\frac{1}{1000} = \frac{1}{1000} = 1$	2.0
Vork	G10872
ype of work:       Fee       Image: New Construction         Required:       Image: Conversion         Image: Deepening Orig.       Start         Cord No       Image: Cord No	No Fee Alteration (Repair/Recondition) Required: Abandonment Orig. Start Card No. <u>104</u> 2
Proposed Commencement Date: 1217107	
Existing or Proposed Well Depth: Zer 56 Diamete	2. V Original Well I.D. Label Number
Jse: Domestic Community (Public System) D Thermal Injection	□ Industrial □ Irrigation □ Monitoring □ Other
Proposed Well Location:	
County <u>Haltnaman</u> Township Range	Eastor West Section 14 Tax Lot 100
1/4 Sw $1/4$ SE Or Latitude	Longitude
Street Address of well if not assigned nearest address:	
3	
We have read the back of this form and the information pro-	ovided is accurate to the best of our knowledge.
Owner/Agent Name Bonded Water	کے کا حی ( ) Supply/Monitor Well Constructor Name License No.
Geo Tech	Explorations 12/11-7
Date Signed	* Company Date Signed
OWNER PLEASE NOTE: This is not a water right applicat the Water Resources Department, if required. The Oregon to construction if the well is to be used as a public system. ADDITIONAL IMPORT.	ion. The owner is responsible for obtaining a water right through Health Division requires plans to be submitted and approved prior ANT INFORMATION ON BACK.

Date Postmarked \_\_\_\_\_ Date Hand-Delivered \_\_\_\_

Date Region Office Rec'd \_\_\_\_

## Check No. START CARD NOTICE OF BEGINNING OF WELL CONSTRUCTION (as required by ORS 537.762)

w 167879

Date Fee Received

**OWRD** Receipt

FOR WATER RESOURCES DEPARTMENT USE ONLY

167879

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing add	ress: Reynolds	Metals		
Home Phone: ()	5100 544	idial Rd		
Work Phone: ()	Troutdale	OR 97080		
Type of work: Fee	New Construction	No Fee	Alteration (Repa	air/Recondition)
Required:	Conversion	Required:	Abandonment	Orig. Start
	🗌 Deepening 🛛 Orig. Start			Card No. $2771$
	Card No.	· .		WMORLY
- roposed Commencement Date	12-13-04			
Existing or Proposed Well Dept	h: 129 Diameter:	Z' Original V	Vell I.D. Label Numbe	r:
Use: Domestic Do	Community (Public System)	Industrial 🛛 🗆 Ir	rigation	
Thermal 1	njection	[Monitoring 🛛 🗆 O	ther	
Proposed Well Location:			_	
County Ma Hnome L	Township / N/ Range	$\frac{S}{E}$ Section	)	661
1/4 <u>5</u> <i>LJ</i> 1/4	SE Or Latitude		Longitude	
Street Address of well, if not as	signed, nearest address:			
Same				

We have read the back of this form and the information provided is accurate to the best of our knowledge.

	6. McInnis	10011
Owner/Agent Name	Bonded Water Supply/Monitor Well Constructor Name	License No.
	Geo- Tech Explorations	12-7-04
Date Signed	Company	Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through he Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior .o construction if the well is to be used as a public system.

ADDITIONAL IMPORTANT INFORMATION ON BACK.

FOR WATER RESOUR	CES DEPARTMENT USE ONLY
Date Postmarked	M T0/980
Date Hand-Delivered	Dete Receipt
	Check No.
STA	RT CARD 167-880
NOTICE OF BEGINNIN	NG OF WELL CONSTRUCTION

(as required by ORS 537.762)

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penaities for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address: Respondes Metals
Home Phone () (IDD Surlal P)
Work G7-02
Phone: () [foutdale, OK 74080
Type of work:         Fee         New Construction         No Fee         Alteration (Repair/Recondition)
Required: Conversion Required: Abandonment Orig. Start
Deepening Orig. Start Card No. <u>-4999</u>
Card No 6-17b
roposed Commencement Date: <u>21501</u>
Existing or Proposed Well Depth: 178' Diameter: 2' Original Well I.D. Label Number:
Use: Domestic Community (Public System) Industrial Irrigation Thermal Injection Monitoring Other
Proposed Well Location:
County Multnomeh Township IN Range 3 E Section 14 Tax Lot 100
$1/4 \underline{S} \ \omega 1/4 \underline{SE}$ Or Latitude Longitude
Street Address of well, if not assigned, nearest address:
Same
We have read the back of this form and the information provided is accurate to the best of our knowledge.
G- Matunis IDAI
Owner/Agent Name         Bonded Water Supply/Monitor Well Constructor Name         License No.
Gen-Trach Explorations 12-7-04
Date Signed Company U Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through 'he Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior ... o construction if the well is to be used as a public system.

FOR WATER RESOURCES DEPAR Date Postmarked Date Hand-Delivered Date Region Office Rec'd	TMENT USE W OWR Date I Check	ONLY 67881 D Receipt ce Received No.	
START CAR NOTICE OF BEGINNING OF WELL (as required by ORS 5	<b>ED</b> L CONSTRU 537.762)	CTION	16788
This form must be completed and the original mailed or delivered to the Wate Salem OR 97301-1271 for all new construction, conversion, alteration, deeped delivered before work is commenced. A \$125 fee shall accompany the original deepenings (make checks payable to the Water Resources Department). In a notice to the region office within which the well is being constructed, converte following methods: (a) by regular mail no later than three (3) calendar days (7 delivery, during regular office hours before work is commenced; or (c) by FA legible copy of the start card shall also be mailed or delivered to the region office Resources Commission has authority to impose civil penalties for failure to su to submit the \$125 fee in a timely manner, and for failure to timely submit start Owner's name and mailing address:	er Resources E ening and abar al for all new ddition, the co ed, altered, de 2 hours) prior X before work fice no later the ubmit the requirt cards. A = 4 a	Department, 725 Summadonments. This origination of the second structure of the	mer Street NE Suite A, inal must be mailed or nversion, and le a legible copy of this d using one of the f work; (b) by hand nethod (c) is used, a ommenced. The Water e start card, for failure
Home Phone: () 5100 Sun Work Phone: () 700 Sun Trout do b	dial OR	P7080	
Type of work: Fee Required: Conversion Deepening Orig. Start Card No. (2-13-04	No Fee Required:	☐ Alteration (Re ☐ Abandonment	pair/Recondition) Orig. Start Card No. <u>85715</u> MWB-169
Existing or Proposed Well Depth: <u>170.5</u> Diameter: <u>2'</u>	Original V	Vell I.D. Label Numb	er:
Use: Domestic Community (Public System) Industrial Thermal Injection		rigation ther	
Proposed Well Location: County Multhome Township I North or South Range <u>SE</u> East or West	Section	<u>//</u> Tax Lot	100
1/4 <u>SW</u> 1/4 <u>SE</u> Or Latitude		Longitude	
Street Address of well, if not assigned, nearest address: $5 \circ m e$			
We have read the back of this form and the information provided is acc	urate to the t	est of our knowled	ge.

	(T. Mc Inn.S	10011
Owner/Agent Name	Bonded Water Supply/Monitor Well Constructor Name	License No.
	Geo-Trich Explorations	12-7-04
Date Signed	Company	Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through we water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior construction if the well is to be used as a public system. ADDITIONAL IMPORTANT INFORMATION ON BACK.

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		THE PERMIT
신지 그는 가슴옷 물리가	12.4 사회원사항은 전문 가장이 있는 것은 것은 것은 것이 있는 것은 것이 있는 것이 있는 것이 있다. 생각 수 집 전문 것이 있는 것이 있다.	
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	START CARD	11.7000
NOTIC	CE OF BEGINNING OF WELL CONSTRUCTION	10100 2
	(as required by ORS 537.762)	· ·
his form must be completed and the origina	I mailed or delivered to the Water Resources Department, 7	25 Summer Street NE Suite A.
alem OR 97301-1271 for all new construct	tion, conversion, alteration, deepening and abandonments.	This original must be mailed or
elivered before work is commenced. A \$12	25 fee shall accompany the original for all new well constructed the provided provided the constructed of th	ction, conversion, and
otice to the region office within which the w	well is being constructed, converted, altered, deepened, or al	bandoned using one of the
ollowing methods: (a) by regular mail no lat	ter than three (3) calendar days (72 hours) prior to commend	cement of work; (b) by hand
elivery, during regular office hours before v	work is commenced; or (c) by FAX before work is commen-	ced. If method (c) is used, a
egible copy of the start card shall also be ma	alled or delivered to the region office no later than the day w	vork is commenced. The Water
submit the \$125 fee in a timely manner, and	ad for failure to timely submit start cards.	
	· P II- Malla MAN	21-11-
owner's name and mailing address:	Keynolds Vietris No	
hone: ()	5100 Sundial Kd	· · ·
Vork	Totale DP 97	080
	/ Jour dail, Oh	000
ype of work: Fee 🗌 New Co	onstruction No Fee 🖸 Altera	tion (Repair/Recondition)
Required: Conver	rsion Required: Aband	onment Orig. Start
	ling Orig. Start	Card No. 7 11 2
12-1	Card No	
oposed Commencement Date: 12-	15 01	•
Existing or Proposed Well Depth: 17	7 Diameter: 2" Original Well I.D. Lab	el Number:
	Public System) Industrial Irrigation	•
Thermal Disection	rubic System) C mouse in C ingaton	
roposed Well Location:		
County Maltroman Township	$N_{\text{Range}} \xrightarrow{3E} \text{Section} / U$	Tax Lot $100$
· · · · · · · · · · · · · · · · · · ·	North or South East or West	
SET IN SE		
	Or Latitude Longitude	
Street Address of well, if not assigned, neare	est address:	
C 0		
Jame		
We have read the back of this form and t	the information provided is accurate to the best of our	knowledge
we have read the back of this form and t		LIOWICIGE.
Oniner/Agent Nome	Bondert Water Sumily/Monitor Well Constructor Name	License No
Ownen/Agent Name	Bonned water supply within wen constructor water	1 - 7 - 3 4
Date Simed	Company Company	Date Signed
Paul Signer	Company	Date Signed
	vater right application. The owner is responsible for obt	aining a water right through
OWNER PLEASE NOTE: This is not a w		
OWNER PLEASE NOTE: This is not a w e Water Resources Department, if requ	ired. The Oregon Health Division requires plans to be s	ubmitted and approved prior
OWNER PLEASE NOTE: This is not a w e Water Resources Department, if requ construction if the well is to be used as	ired. The Oregon Health Division requires plans to be s a public system. TONAL IMPORTANT INFORMATION ON BACK	ubmitted and approved prior
OWNER PLEASE NOTE: This is not a w e Water Resources Department, if requ construction if the well is to be used as ADDIT	ired. The Oregon Health Division requires plans to be s a public system. IONAL IMPORTANT INFORMATION ON BACK.	ubmitted and approved prior



Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address:	Reynolds Me-	fals		
Home Phone: ( )	5100 Sund	ial P	.d.	
Work Phone: ()	Troutdale 0	k 9	7080	
Type of work: Fee INew Co Required: Convers	nstruction ion	No Fee Required:	Alteration (Re)	orig. Start
Deepeni	ng Orig. Start			Card No. 85713
poposed Commencement Date: / 2-1	Card No 3-04		•	<b>b:</b> • • •
Existing or Proposed Well Depth:	<u>5</u> Diameter: <u>2''</u>	Original V	Vell I.D. Label Numb	oer:
Use: Domestic Community (F	Public System) 🗖 Industria	l □lu ng □C	rigation	
Proposed Well Location: County Multaena Township No 1/4 SW 1/4 SE	$\frac{1}{10000000000000000000000000000000000$	Section	/4 Tax Lot	001
Street Address of well, if not assigned, neares $S = mC$	st address:	· · · · · · · · · · · · · · · · · · ·		
We have read the back of this form and the	ne information provided is ac	curate to the	best of our knowled	lge.
•	G. McIn	nis	/ / / / /	0011
Owner/Agent Name	Bonded Water Supply/Monitor	Well Constructor	Name	License No. 2 - 7 - 0 4
Date Signed	Сотра	ny. T		Date Signed
OWNER PLEASE NOTE: This is not a way e Water Resources Department, if require construction if the well is to be used as a ADDITH	ater right application. The ow red. The Oregon Health Divis a public system. ONAL IMPORTANT INFOR	ner is responsion requires p MATION OF	ible for obtaining a blans to be submitted N BACK.	water right through d and approved prior

V <sup>2</sup>	FOR WATER R	ESOURCES DEPARTM	IENT USE ONLY	
Date Postmarked			w 167927	
Date Hand-Delivered	an a subah magni baséh ki	m elleri generat ignizata .	OWRD Receipt	weather restriction of soll
Date Region Office Rec'd	ngiladhanan katar dar bara	ent will generate dure	Date Fee Received	nations are entered at the
		ar e santa sana ara a	Check No.	A MANAZAMATRIDA DI BULA
		CEADE CADE		

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address: $\frac{1}{10000000000000000000000000000000000$	distictels	· · · · · · · · · · · · · · · · · · ·		
Phone: () <u>Stars</u>	thank d			
Work Phone: ()	Marcia That	<u></u>		
Type of work: Fee INew Con Required: Conversi Deepenin	on on Corig. Start Card No	No Fee Required:	Alteration (Rep.	air/Recondition) Orig. Start Card No./ <u></u>
Proposed Commencement Date: 12120	(			P211-0
Existing or Proposed Well Depth: $19.3$	Diameter: "	Original V	Vell I.D. Label Numbe	r: 1000004
Use: Domestic Community (Program Domestic Injection	ublic System) 🔲 Industrial	g X C	rigation Other <u>F.c.2.5 m.l</u>	
Proposed Well Location:				
County Molthouse Township	th or South Range East or West	_ Section	14Tax Lot	165
1/4 1/4 O	r Latitude		Longitude	
Street Address of well, if not assigned, nearest	address:			
Signe				
We have read the back of this form and the	e information provided is acc	urate to the l	best of our knowledg	je.
:	S. SICIANS		Z 33 (	i
Owner/Agent Name	Bonded Water Supply/Monitor W	ell Constructor N	Name L	vicense No.
Date Signed	Company	/	E	Date Signed
OWNER PLEASE NOTE: This is not a wat the Water Resources Department. if require	er right application. The own	er is respons on requires n	ible for obtaining a w lans to be submitted	ater right through and approved prior

G.

to construction if the well is to be used as a public system. ADDITIONAL IMPORTANT INFORMATION ON BACK.

<b>.</b>	FOR WATER RESOURCE	ES DEPARTME	ENT USE ONLY
Date Postmarked			w 16/928
Date Hand-Delivered	<u>ni sinte minetinan ar</u> matike se	and and performance of	OWRD Receipt
Date Region Office Rec'd	solutions come provide particular and	piè de Gran défects	Date Fee Received
hvis otteste ha magne	and the second of the second		Check No.
	STAD	TCAPD	Q215.023

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address:	Keppinshill Eldiste		
Home Phone: ()	5100		
Work Phone: ()	Tradictic or 97570		<u>an anala ang ang ang ang ang ang ang ang ang an</u>
Type of work: Fee INew Required: Con Dee	V Construction No I version Req pening Orig. Start Card No	Fee 🔲 Alteration (Rep uired: 💢 Abandonment	oair/Recondition) Orig. Start Card No. <u>(ASKAN</u> /06604 p218-02
Proposed Commencement Date: $1 \ge 1$			<i>۳</i> .
Existing or Proposed Well Depth:	$\rightarrow$ Diameter: $2^{h}$ Or	riginal Well I.D. Label Numb	er:
Use: Domestic Communi	ty (Public System)	$\Box \text{ Irrigation} \\ \Box \text{ Other } \underline{-} F_{1 \leq 2} \leq \infty.$	
Proposed Well Location:			
County <u>Infollian a con</u> Township	North or South Range 3 Se	ection <u>  \</u> Tax Lot _	100
1/4 1/4	Or Latitude	Longitude	
Street Address of well, if not assigned, ne	arest address:		
We have read the back of this form at	nd the information provided is accurate	to the best of our knowled	ge.
	R. IL Ing.	1.) 51	1
Owner/Agent Name	Bonded Water Supply/Monitor Well Con	nstructor Name	License No.
	Car Thotal Labor	1212	010
	Company		Date Signed

* FOR WATER RESOURCES DEPARTM	ENT USE ONLY
Date Postmarked	w 167929
Date Hand-Delivered	OWRD Receipt
Date Region Office Rec'd	Date Fee Received
	Check No.

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address:	- particle a lakas	·		
Home Phone: ( )	$\pi \cos 4 \sin 6 \pm 2 6$			
Work Phone: ()	Tale and Marks	<u>с</u>		
Type of work: Fee Required: Deep	Construction version ening Orig. Start Card No	No Fee Required:	☐ Alteration (Rep ⊠ Abandonment	air/Recondition) Orig. Start Card No.1 <u>02707</u> 100609 P219-01
Proposed Commencement Date: 10101	- 101			2 <b>666</b> 1 • •
Existing or Proposed Well Depth:	Diameter:	Original V	Vell I.D. Label Numbe	er:
Use: Domestic Communit	y (Public System) Industrial	ng ∭ C	rigation ther_Piczumcle	·
Proposed Well Location:				
County <u>Flattmann</u> Township	North or South East or West	_ Section _	Tax Lot	1.05
1/4 1/4	Or Latitude		Longitude	
Street Address of well, if not assigned, nea	arest address:			
2 march 1				
We have read the back of this form and	d the information provided is acc	urate to the l	best of our knowledg	ge.
	LS. ILEMAS		(2)4	
Owner/Agent Name	Bonded Water Supply/Monitor W	ell Constructor 1	Jame	License No.
		<u>4. 10 _</u>	12-	2.2-67
Date Signed	Company	ý	]	Date Signed
OWNER PLEASE NOTE: This is not a the Water Resources Department, if rec to construction if the well is to be used a ADD	water right application. The own juired. The Oregon Health Divisi is a public system. ITIONAL IMPORTANT INFORM	ier is respons on requires p MATION ON	ible for obtaining a v lans to be submitted BACK.	vater right through and approved prior

, POR WATER RESOURCES DEPARTMI	ENT USE ONLY
Date Postmarked	w 167930
Date Hand-Delivered	OWRD Receipt
Date Region Office Rec'd	Date Fee Received
1. Life Objective Construction State of the State of t	Check No.
START CARD	P217-034

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address: Kanald Mala
Home
Phone: ()
Phone: ( Troublace ore 97050
Type of work: Fee I New Construction No Fee Alteration (Repair/Recondition)
Required: 🔲 Conversion Required: 🖄 Abandonment Orig. Start
Deepening Orig. Start Card No. / Chick of
Card No 100605
Proposed Commencement Date: 12120101
Existing or Proposed Well Depth: Diameter: Original Well I.D. Label Number:
Use: Domestic Community (Public System) Industrial Irrigation
Thermal Injection Monitoring Other Production
Proposed Well Location:
County <u>Morth or South</u> Range <u>Section</u> <u>Tax Lot</u> <u>County</u> <u>Tax Lot</u> <u>County</u> <u>North or South</u> <u>County</u> <u>Cast or West</u> <u>Section</u> <u>County</u> <u>Cast or West</u> <u>Section</u> <u>Cast or West</u> <u>Section</u> <u>Cast or West</u> <u>Cast or West</u> <u>Section</u>
1/4 1/4 Or Latitude Longitude
Street Address of well, if not assigned, nearest address:
We have read the back of this form and the information provided is accurate to the best of our knowledge

	12 MIE EARS	1.3.11
Owner/Agent Name	Bonded Water Supply/Monitor Well Constructor Name	License No.
	Mr. The Esployate	12-27
Date Signed	Ċompany	Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

FOR WATER RESOURCES DEPARTME	ENT USE ONLY
Date Postmarked	w 167931
Date Hand-Delivered	OWRD Receipt
Date Region Office Rec'd	Date Fee Received
a la la companya da companya da companya da company	Check No.

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address: <u></u>	s there is			
Phone: () 5100 3	and all is the			
Work Phone: () Troot (	Ca 12 470	\$ P		
Type of work: Fee I New Construction Required: Conversion Deepening Orig Card	n . Start No	No Fee Required:	Alteration (Rep.	air/Recondition) Orig. Start Card NoJ <u>(20)(40)</u> P218-040
Proposed Commencement Date: 12-20-07			)	
Existing or Proposed Well Depth:42	Diameter: <u>2</u> <sup>1</sup>	Original W	ell I.D. Label Numbe	r:
Use: Domestic Community (Public System) Thermal Injection	item) 🔲 Industrial	g Do	rigation ther	
Proposed Well Location:				
County Hultnomach Township	Range East of Mest	_ Section	Tax Lot_	100
1/4 1/4 Or Latitu	de		Longitude	
Street Address of well, if not assigned, nearest address				
We have read the back of this form and the inform	ation provided is accu	urate to the b	est of our knowledg	je.
<u> </u>	1-Inna	······································	1001	<u> </u>
Owner/Agent Name	ded Water Supply/Monitor W	ell Constructor N	ame L	icense No.
<u>رح)</u>	<u> </u>		12-45	7
Date Signed	Company	,	L	ate Signed
OWNER PLEASE NOTE: This is not a water right the Water Resources Department, if required. The to construction if the well is to be used as a public sy	application. The own Oregon Health Divisio /stem.	er is responsi on requires pl	ble for obtaining a w ans to be submitted :	ater right through and approved prior

ADDITIONAL IMPORTANT INFORMATION ON BACK.

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100 A 100		1	2014525493	1.00
	N. C. 2868	1252 556	300 C	
States - An		220225927		10.000

#### Date Postmarked

#### Date Hand-Delivered

Date Region Office Rec'd \_\_\_\_

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#### FOR WATER RESOURCES DEPARTMENT USE ONLY

# w 167932

OWRD Receipt \_\_\_\_\_\_ Date Fee Received \_\_\_\_\_\_

START CARD NOTICE OF BEGINNING OF WELL CONSTRUCTION (as required by ORS 537.762)

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address:	Reynolds	Michales		· · · · · · · · · · · · · · · · · · ·	
Home Phone: ( )	5100 540	1 1 2 4	<u> </u>		
Work Phone: ()	Trailel com	OIL CAL	180		
Type of work: Fee	ew Construction		No Fee	Alteration (Rep	air/Recondition)
Required: 🗌 Co	onversion		<b>Required:</b>	🕅 Abandonment	Orig. Start
	eepening Orig. Start				Card No. <u>Apple 17</u>
	Card No				P2 19-040
Proposed Commencement Date: 12	-20.07				
Existing or Proposed Well Depth:	Diame	eter:	Original W	ell I.D. Label Numbe	er:
Use: Domestic Commu	nity (Public System)	🗖 Industrial	🗖 Ir	rigation	
Thermal Injection	n	🗖 Monitorin	g □o	ther	
Proposed Well Location:					
County <u>Flatt</u> Townsh	North or South Ran	IgeEast or West	_ Section	Tax Lot	102
1/4 1/4	Or Latitude	/		Longitude	
Street Address of well, if not assigned,	nearest address:				
We have read the back of this form	and the information p	provided is accu	urate to the b	est of our knowledg	ge.
	GARS	<u>nni-2</u>		1.3511	

	V 201 1 200 - 2	·
Owner/Agent Name	Bonded Water Supply/Monitor Well Constructor Name	License No.
-	Cart - The Environmentions	12-60-64
Date Signed	Company	Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.



rended 10-24-05

This form must be completed and the original mailed or delivered to the Water Resources Department, 725 Summer Street NE Suite A, Salem OR 97301-1271 for all new construction, conversion, alteration, deepening and abandonments. This original must be mailed or delivered before work is commenced. A \$125 fee shall accompany the original for all new well construction, conversion, and deepenings (make checks payable to the Water Resources Department). In addition, the constructor shall provide a legible copy of this notice to the region office within which the well is being constructed, converted, altered, deepened, or abandoned using one of the following methods: (a) by regular mail no later than three (3) calendar days (72 hours) prior to commencement of work; (b) by hand delivery, during regular office hours before work is commenced; or (c) by FAX before work is commenced. If method (c) is used, a legible copy of the start card shall also be mailed or delivered to the region office no later than the day work is commenced. The Water Resources Commission has authority to impose civil penalties for failure to submit the required \$125 fee with the start card, for failure to submit the \$125 fee in a timely manner, and for failure to timely submit start cards.

Owner's name and mailing address: Keynolchs Mctub			
Home Phone: () Sido Sundial R	d		
Work Phone: () Trustelede, OR 9	ndeo	- 	
Type of work: Fee INew Construction	No Fee	Alteration (Rep	air/Recondition)
Required: Conversion	Required:	Abandonment	Orig. Start
Deepening Orig. Start			Card Not TT 190
Proposed Commencement Date: $\frac{11305}{12-9-04}$			89222
Existing or Proposed Well Depth: 96' Diameter:	U Original V	Well I.D. Label Numb	er:
Use: Domestic Community (Public System) Industria	al 🛛 I ring 🖓 🖓 🖓	rrigation Dther	
Proposed Well Location:			
County Huttoman Township Range 3	Section	14 Tax Lot	100
1/4 <u>Sw</u> 1/4 <u>SE</u> Or Latitude		_ Longitude	· · · · · · · · · · · · · · · · · · ·
Street Address of well, if not assigned, nearest address: 5100 Sunction RC			

We have read the back of this form and the information provided is accurate to the best of our knowledge.

	G. McLnnis	1001
Owner/Agent Name	Bonded Water Supply/Monitor Well Constructor Name	License No.
	GEO-Tech Exploration	1/13/05
Date Signed	Company	Date Signed

OWNER PLEASE NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required. The Oregon Health Division requires plans to be submitted and approved prior to construction if the well is to be used as a public system.

09/12/:	2005 13:13	5036924759		GEO TE	CH EXPLOR	ATION		PAGE	62
 17311-04	2.76949	$\sim$	PAULY	122105 1.	-2" tog	s'- Reyn	olds m	-ugs	<u>โ</u> ล <i>-</i> ไป R -
		TORW	STR. GRADNE DIS	OFFICIER	MIRARMUSIC	ON BASIS			
Date Post							1		
<b>Jaie Han</b>	Pipe wered				CW-	Recent			
Jate Reg	on G nee Rec d					ay Kabanhar		<b>展出的新闻社</b> 研究系统建筑	
	THE PARTY OF	「テーズ」「大学会に次の言語では認識				EN ALL CONTRACTOR OF AN	a yanan tuma na	84637700,5996919932448	
		NOTICE	OF BEGINNI	NG OF WELL	D CONSTRU	TION			
			(as require	ed by ORS 53	7.762)				
This form Salem Of delivered deepening notice to t following delivery, o legible cop Resources to submit Owner's n Home Phone: (	must be completed a R 97301-1271 for all befor a work is comm (make checks pay he region office with methods: (a) by regu- during; regular office py of the start card s Con mission has au the \$ .25 fee in a time name and mailing ad	and the original new construction nenced. A \$125 able to the Wate in which the we ular mail no later hours before we hall also be mail thority to impos- nely manner, and dress: <u>Ret</u>	mailed or deliver n, conversion, a fee shall accomp r Resources Dep Il is being const : than three (3) c ork is commence ed or delivered t e civil penalties for failure to tim enalties for failure to tim	red to the Water learning, deepen pany the original variant $(72)$ is a dot nucled, converted alendar days (72) is (7) by FAX to the region offic for failure to sub nely submit start $(1 + 172) + 172 + 1$	Resources D ing and aban for all new v lition, the cou- l, altered, dec hours) prior before work ce no later th mit the requi cards.	epartment, 7 donments. 1 well construct astructor sha epened, or alt to commence is commence an the day w red \$125 fee	25 Summer his origina tion, conve Il provide a andoned us ement of w wicd. If methor ork is comm with the st	Street NE I must be m rsion, and legible cop sing one of ork; (b) by nod (c) is us nenced. Th art card, for	Suite A, nailed or oy of this the hand sed, a ne Water r failure
Phone: (	)	100	stalley	62					
Type of w	vork: Fee Required:	X New Con Conversi Deepenir	struction on Ig Orig. Start		No Fee Required:	Alterat	ion (Repai onment	r/Recondit Orig. Start Card No	ion)
Proposed	Commencement Dat	e: 7/22	105						
Existing o	r Pro xosed Well De	pth: 95	Diame	ter:	_ Original W	ell I.D. Lab	el Number:		
Use:		Community (P	ublic System)	Industrial		rigation			
 • محمد معاد ا	l inc mai	Injection		Montoning	; <b>с</b> у	uter			•
Proposed	well Location:		1	2		171		1.0.0	
County		Township	Ran rill or South	East or West	Section	<u>[-+</u>	fax Lot	100	
1/4 <u>人</u>	<u>)(i)</u> 1/4	NW O	r Latitude			Longitude			
Street Ado	dress of well, if not a	assigned, nearest	address:						
$\leq$									
<u>_</u>	<u></u>				· · · · · · · · · · · · · · · · · · ·				
We have	read the back of th	is form and the	e information p	rovided is accu	rate to the b	est of our k	nowledge		
			Crole	Lonis		lama	100ļļ	man Nin	
(	Owner/Agent Name		Bonded Water	r Supply/Monitor We			<u>,</u> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
			- ロアカゴレ	CON PXO!	NULTICE	15	1-66	$-\omega_{S}$	
	Data Cimed			Company			Da	e Signod	

ADDITIONAL IMPORTANT INFORMATION ON BACK.

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# ATTACHMENT 2 Well Logs

ON CD

CHM HILL

#### WELL NUMBER PROJECT NUMBER OPE39293.BI.01 MW-03-17-SHEET I OF 1

# MONITORING WELL GEOLOGIC AND CONSTRUCTION LOC

PROJECT Reynolds Metals

LOCATION Graham Road

DRILLING CONTRACTOR GeoTech-Mickey MEASURING POINT ELEV (NGVD) \_\_\_\_ 29.69 DRILLING METHOD AND EQUIPMENT HSA 6 1/4" Augers Canterra 250 OT LOT 7-9-94 7 10

WATER	LEVEL	ELEV/	DATE	7.19	START9-94	FINISH	7-9-9	94LOG	GER Heidil	Hoffmann
зÊ	Ŀ	SAMPLE	Ξ	STANDARD	SOIL DESCRIPTION		Z	WELL CO	MPLETION	DIAGRAM
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	TEST RESULTS 6* -6* -6* (N)	SOIL NAME, USCS GROUP SYMBOL MOISTURE CONTENT, RELATIVE D OR CONSISTENCY, SOIL STRUCTU MINERALOGY	, COLOR, DENSITY IRE,	USCS DESCRIPTIC			
5.0	2.5 4.0 5.0 6.5 7.5	S-1 S-2 S-3	0.6	17-18-16 (34) 8-9-17 (26) 6-8-12	SILTY, ML, dk brown, dry. <u>SAND</u> , SP, strong brown, (7.5YR 4/6), wet, fine, dense. At 3.5': S ML, v. dk gray, (10YR 3/1), wet. OVM=0.0, HCN=0.0. <u>SAND</u> , SP, v. dk gray, (10YR 3/1) wet, medium, fine sand, OVM=0.0, HCN=0.0. <u>SAND</u> , SP, v. dk gray, (10YR 3/1) wet, medium, fine sand, -10% silt,	;ILT. ), m	ML - SP ML -	Centralizer Locking C PVC Stickup Volclay =2.5 ft Coarse Concrete Bentonite Pad		Blank PVC Casing
 10.0 	9.0 10.0 11.5 12.5	S-4	1.5	(20) 7-12-14 (26)	Fe-oxide in top of spoon. OVM= HCN=0.0. SAND, SP, v. dk gray, (10YR 3/1) wet, medium v. fine sand, well- sorted. OVM=0.0, HCN=0.0. SAND, SP, v. dk grayish brown, (10YR 3/2), wet, medium, v. fine sand well-sorted. OVM=0.0	0.0,	SP -	Stainless Steel		r 10 slot VC Screen
	14.0 15.0 16.5 17.5	S-5 S-6	0.6	6-12-6 (18) 1-2-3 (5)	HCN=0.0. SILTY SAND, SM, dk grayish brow (10YR 3/2), wet, loose, wood chunks. OVM=0.0, HCN=0.0.	in,	- - - SM _	Steel Centralizer		2" diamete Schedule 40 f Flush-thr
20.0	<u>19.0</u>	S-7	. 1.5	1-3-2 {5)	<u>SILIY SAND</u> , SM, v.dk grayish bro (10YR 3/2), wel, loose. OVM=0.0, HCN=0.0. BOH=18	)wn,		Stainless		2" Diameter End Cap Flush-threaded
- 25.0					•					

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ELEVATION .

PROJECT NUNBÉR

BORING NUMBER

SHEET I OF

4

#### SOIL BORING LOG

## PROJECT Reynolds Metals -- RMC-Troutdale

LOCATION Approximately 15 feet North of NW03 & NW03-

#### OBU I

DRILLING CONTRACTOR Tacoma Pump & Drilling Company

DRILLING NETHOD AND EQUIPMENT Cable Tool; 8" ID Steel Casing

START 8-25-98 FINISH 8-28-98 LOGGER Ivan Gall WATER LEVELS STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION COMMENTS DEPTH BELOW SURFACE (FT) SOIL NAME, USCS GROUP SYMBOL, COLOR, TYPE AND NUMBER RECOVERY FEET DEPTH OF CASING, DRILLING RATE, INTERVAL MOISTURE CONTENT, RELATIVE DENSITY DRILLING FLUID LOSS. 6' ~6' -6' OR CONSISTENCY, SOIL STRUCTURE, TESTS AND INSTRUMENTATION (N) MINERALOGY 0-2.0 feet: Crushed basalt fill for drill pad 5.0 Driller adds 10 gallons of water. 10.0 10.0 SAND, (SP), brownish gray (5 yr 4/1), wet, loose, fine-grained, 5 percent sill, trace of organic material, homogeneous, Drilling adds 10 gallons of water. 8-8-8 1.2 (18) 11.5 sub-angular to sub-rounded. 5.0 17.0 SILTY SAND with GRAVEL, (SM), dark yellowish brown (10 yr 4/2), wet, very Sediment very disturbed. 1-1-1 (2) 1.0 ioose, is percent gravel (to 0.5-inch maximum size), sand coarse-grained, 5 percent wood iragments (to 2-inch 18.5 maximum size). 20.0 23.5 SILT. (ML), dark greenish gray (5 gy 4/1), wet, soft, slightly plastic, homogeneous. 1-3-3 0.6 (8) 25.0 25.0

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#### PROJECT NUNBER 107493.08.02

BORING NUMBER 880-60WM

SHEET 2 OF 4

## SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

## LOCATION Approximately 15 feet North of MW03 & MW03-17!

ELEVATION \_\_

# DRILLING CONTRACTOR Tacoma Pump & Drilling Company DRILLING NETHOD AND EQUIPMENT Cable Tool; 8" ID Steel Casing

WATER	R LEVEL	.s		- W	STARTFINISHFINISH	-98 LOGGER Ivan Gall
зF		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY	8' -8" -8" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, NOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
					-	Driller adds 10 gallons of water.
35.0 ~	35.0	-			<u>SILI</u> , (ML), as above. —	Driller adds 5 gallons of water.
	30.5		1.5	(7)	-	
- 40.0 —	39.0		1.2	.13-18-18 (35)	SAND, (SW), dark greenish gray (5 gy 4/1), wet, medium dense, thin silt laminae (less than 0.5 lnch), fine-to-medium grained sand, coarsens downward.	
- - 45.0 — -	48.0					- - - - - - -
- 60.0	49.5		1.1	15-23-24 (47)	SAND, (SP), dark greenish gray (5 gy 4/1), wet, medium dense, fine-grakned, 5 percent slit, trace organic material, sand moderately well rounded to sub-angular, homogeneous.	48 feet bgs water sample collected: T=18 degrees C pH=7.25 cond=300 F-∝0.23 -
	58.0				SAND, (SW), dark gray (N3), wet, medium dense, fine to medium-grained, sand	
-	59.5		1.4	18-19-20 (39)	sub-angular, homogeneous.	Driller reports 10 feet sand heaved into casing. Driller add 15 gallons of water.



PROJECT NUNBER 107493.D8.02 BORING NUMBER

SHEET 3 OF 4

## SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

# LOCATION Approximately 15 feet North of NWO3 & NWO3-1

ELEVATION \_

DRILLING CONTRACTOR Tacoma Pump & Drilling Company

DRILLING NETHOD AND EQUIPMENT Cable Tool; 6" ID Steel Casing

WATER	R LEVEL	S			START90	FINISH	8-28-	88LOGGER_Ivan Gall
₹F		SAMPLE	Ξ	STANDARD	SOIL DESCRIPTION			COMMENTS
	F		ΓRΥ	RESULTS	SOIL NAME, USCS GROUP SYMBOL,	COLOR,		DEPTH OF CASING, DRILLING RATE.
DEPTH	INTERV	TYPE A NUMBEF	RECOVE	6* -6* -6* (N)	OR CONSISTENCY, SOIL STRUCTUR	E,		DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	1						1	
	1						-	· ·
.	1						1	
	1						1	· .
86.0	1						1	· · · ·
-	1						1	
-	88.0						1	•
-			1.4	12-17-17	SAND, (SW), dark gray (N3), wet, dense, fine-to-medium grained, sa	nedium nd	1	68 feet bgs water sample collected:
	89.5			(34)	subangular, nomogeneous, trace w tragments.	000	1	1=13.5 degrees C pH=7.81 cond=320 F-=0.35
1000 -							-	Driller reports 25 feet of sand heaved into casing.
-					•		4	· .
-							-	
-	4						4	
75.0 -	ł						-	Driller add 25 gallons of water.
- 1							-	
-							-	<del>.</del>
-	78.0				SAND, (SW), dark gray (N3), wet, i	medium	4	
-	78.5		1.4	13-20-28 (48)	dense, fine-grained, sand subangu homogeneous, trace wood fragmen	lar, ts.	· -	-
80.0 -								-
· -							4	-
-							4	ر -
-							-	. –
-							4	
85.0							_	
-								-
_	87.0				SANU, 1527, as above except dens	ie.	-	Driller add 25 gallons of water
	89.5		1.5	13-30-50 (80)			-	Dimor and Eo gamora of Rater.
-	00.0						_	-



PROJECT NUMBER 107 493.08.02

BORING NUMBER NMO3-088

SHEET 4 OF 4

## SOIL BORING LOG

# PROJECT Reynolds Metals -- RNC-Troutdale

## LOCATION Approximately 15 feet North of MW03 & MW03-1

ELEVATION \_

DRILLING CONTRACTOR Tacona Pump & Drilling Company

# DRILLING NETHOD AND EQUIPMENT Cable Tool, 8" ID Steel Casing

WATER	LEVEL	S			STARTFINISHFINISH	LOGGER Ivan Gall
3F		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-						
960 - - - -					-	
1000 -	100.0		0.8	2-2-2	SAND, (SP), as above except very loose.	100 feet bgs water sample collected: —
-	101.5			(4)		T=12.9 degrees C pH=7.80 cond=250 F-=.50
-   - - -		-			-	100 teet total depth.
- 1100 - -						
- 1160 - - -						

жм ніц.		PR0	AND	BORING NUMBER MW03-098	SHEET 1 OF 1
				WELL COMPLETIO	ON LOG
OJECT Reynolds	Metals RNC	-Troutdale	_ DRILLING CONTRA	LOCATION Approximat	tely 15 feet North of NWO3 & MWO3 ompany
ULLING NETHOD	AND EQUIPMEN	Cable Toot; 8"	ID Steel Casing	EDJTCU 8-28-88	Lorgen Ivan Gall
			_31AN1		LUBOCA
0	ROUND SURFACE	Expanding Locking Concrete		6" ID Protective Steel Cosing	,
EPTH (FEET) 30 & & & & & & & & & & & & & & & & & & &		Bentonite Surry Seal		2" demeter Schedule 40 flush threaded PVC Casing	
		20X40 Centralizer		4 diameter Schedule 40 /C Prepack Screen 0.010 hch soll with 10X20 Silica Sand	
	·	20X40 Silica Sand 10 X 21		An PVC sump	See Boring Log For Dritting Details

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PROJECT NUMBER OPE39293.B1.01

WELL	NUMBER	
MW-0	5-025	

SHEET 1 OF 1

#### MONITORING WELL GEOLOGIC AND CONSTRUCTION LOG

PROJECT Reynolds Metals

#### LOCATION Near Sandy River

MEASURING POINT ELEV (NGVD) 33.99 DRILLING CONTRACTOR GeoTech-Mickey

DRILLING METHOD AND EQUIPMENT HSA 6 1/4" Augers Canterra 250

START 7-8-94 FINISH \_\_\_\_\_94 LOGGER Heidi Hoffmann WATER LEVEL ELEV/DATE 12.65 7-18-94 STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION WELL COMPLETION DIAGRAM USCS DESCRIPTION 원 문 SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, DEPTH BEL TYPE AND NUMBER RECOVERY FEET INTERVAL 6" -6" -6" MINERALOGY (N) с В Locking ( 6" Diameter Locking Mild Steel Protective Casing w/3 Bullards PVC Stickup =2.32 ft-Concrete Pad 2.5 SAND, SP, dk grayish brown, (10YR 4/2), dry, medium, medium- coarse, sandy, loose. 0VM=0.0, HCN=0.0. SP 7-8-14 1.5 S-1 (22) 4.0 PVC Casing 5.0 SAND, SP, dk grayish brown, (IOYR 4/2), v. sl. moist, loose. OVM=0.0, HCN=0.0, At 6 SILT, ML, gray and 5.0 7-10-9 1.5 S-2 (19) 6.5 Fe-stained, mottled, v. moist. Volclay Coarse Bentonit Blank I 7.5 SILT. ML, gray and Fe-oxided staining, mottled, v. moist to wet, plastic, stiff. OVM=0.0, HCN=0.0. 5-6-5 S-3 1.5 (11) 9.0 10.0 10.0 SILTY CLAY, ML/CL, dk brown w/gray and Fe-oxide staining, mottled, plastic, wet, stiff. 0VM=0.0, 3-9-3 S-4 15 (12) 11.5 HCN=0.0. ML Centralize 12.5 SILT. ML. dk grayish brown, wet, soft, Fe-oxide and gray mottled vertical streaks. OVM=0.0, 2-1-2 S-5 1.5 (3) 14.0 HCN=0.0. Steel 15.0 15.0 SILT. ML, dk grayish brown, wet, stiff, 10-20% fine sand, less Stainless 3-4-7 S-6 1.5 Sand (1) Fe-oxide, OVM=0.0, HCN=0.0. 16.5 20x40 Colorado Silica ameter 10 stot e 40 PVC Screen -h-threaded 17.5 SILT, ML, dk grayish brown, wet, stiff, plastic, stringers of <u>SILTY</u> <u>SAND</u>, SM, fine-medium sand. 7-2-8 S-7 1.5 SM (10) 19.0 ML 2" diamete Schedule 40 PV Flush-11-20.0 20.0 SANDY SILT. SM. dk grayish brown, orange, Fe-oxide and gray reduction 4-5-4 1.5 S~8 (9) staining, wet. 21.5 Centralizer SM 22.5 <u>SILTY SAND</u>, SM, dk grayish brown, wet, medium, fine-medium sand. End Cap, Schedule 40 PVC 2" Diameter Flush-threaded 5-6-6 S-9 1.5 (12) 24.0 BOH=25.2' ee) 25.0 ົດ lainless ົວ



#### PROJECT NUMBER OPE39293.B1.01

#### WELL NUMBER MW-06-024

SHEET I OF I

## MONITORING WELL GEOLOGIC AND CONSTRUCTION LOG

PROJECT Reynolds Metals

## LOCATION Field on NE corner of Sundial & Reynolds Pla

MEASURING POINT ELEV (NGVD) \_\_\_\_\_\_\_ DRILLING CONTRACTOR GeoTech-Mickey

DRILLING METHOD AND EQUIPMENT HSA 6 1/4" Augers Conterra 250

WATE	RLEVE	ELEV/	DATE	11.79 7-13-94	START94	FINISH	7-8-	94	LO	GGER Hei	di Hoffmann
жF		SAMPL	E	STANDARD	SOIL DESCRIPTION		Z		WELL C	OMPLETIO	N DIAGRAM
	AL	모	R	TEST RESULTS	SOIL NAME, USCS GROUP SYMB	OL, COLOR,	PTIO		<del>,</del>		
DEPTH E	INTERV	T YPE AI NUMBER	RECOVE	.6*-6*-6* (N)	MOISTURE CONTENT, RELATIVE OR CONSISTENCY, SOIL STRUC MINERALOGY	E DENSITY TURE,	USCS	Cap			
	<b>-</b> .					•	SP	Locking	rete Pad		nd Ste
	<u>2.5</u> 4.0	S-1	1.5	5-7-8 (15)	SAND, SP. dk grayish brown, ( 4/2), dry, medium, fine-medium lenses of <u>SILTY SAND</u> , SM.	2.5Y I sand,	SM-	PVC	Conc		Locking
	5.0	1			UVM=0.0, HLN=0.0		- SP -	1			ising atar
5.0 -	6.5	S-2	1.5	1-4-2 (6)	SILTY SAND, SM, dk brown, (1 3/3), wet. At 6':SILT, ML, dk g brown, (10YR 4/2), v. moist, Exercide staining, stiff, OVM=	OYR grayish =0.0	SM		e e		. PVC Ca A" Diam
	7.5				HCN=0.0.	0.0,	· -		iclay arse tonit		Blan
	9.0	S-3	1.5	3-4-5 (9)	SILT. ML. dk grayish brown, (1 4/2), v. moist, Fe-staining, ro casts, plastic, stiff. OVM=0.0, HCN=0.0.	OYR ol	-	,			
	10.0										
. 10.0 -	11.5	S-4	1.5	3-3-3 (6)	<ul> <li><u>SILT</u> ML, dk grayish brown, we 5-10% fine sand in stringers, Fe-oxide staining. OVM=0.0, HCN=0.0.</li> </ul>	et, firm,	-	alizer			v.
-	12.5						-	entr	Î		
	14.0	S-5	1.5	2-5-6 (1)	<u>SILT</u> ML same as above.		ML _	SteelC		$\Delta$	
150	15.0							less		Ē	_
, U.G.	16.5	\$- <u></u> 6	<u>1</u> .5	4-4-5 (9)	<u>SILT</u> , ML, same as above.	-		Stain	Sand		eeu -
-	17.5						-		ilica	E	Scried
	19.0	S-7	. 1.5	3-3-4 (7)	SILT, ML, same as above.		-		orado S		thread - thread
	20.0						-		Col		dian Jule Iush
20.0	21.5	S-8	1.5	4-4-9 (13)	<u>SAND</u> , SP, v. dk gravish brown, (2.5YR 3/2), wet, medium sand.		SM_	alizer	- 20x40		Schec
-	22.5				SILTY SAND, SM, center of spo	ion.		entre		Ē	der 40
-	24.0	S-9	1.5	2-3-3 (6)	SAND, SP, v. dk grayish brown, (2.5YR 3/2), wet, medium sand, 10~15% silt.	loose,	SP -	Steel Ce			Schedul Diametul
25.0 —				. I	B0H=25'			Stainless			End Cap. PVC 2" Flush-
-					·						-
									•		


PROJECT NUMBER

BORING NUMBER

NW08-094

SHEET I OF 4

## SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

# LOCATION NWOO Along Sundial Road

ELEVATION \_\_

- DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

# DRILLING NETHOD AND EQUIPMENT Cable Tool Drilling 8-Inch I.D. Steel Casing

WATER		.s			STARTFINISHFINISH	-90 LOGGER Ivan Gall
×F		SAMPLE	<u> </u>	STANDARD	SOIL DESCRIPTION	COMMENTS
depth Belo Surface (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-			-			
- 5.0 -						-
- - 0.01	10.0		1.5	2-2-5	SILT. (MH), moderately yellow brown (10 yr 5/4), with orange motiling, damp, soit,	-
- - - 16.0 -	11.5				20-30 percent clay fraction, trace of very fine sand.	
-	19.0		1.5	2-3-8	<u>SILI</u> , (NH), as above, to 20.3 teet.	
	20.5				Sharp contact with <u>SAND</u> . (SW), dark gray (N3), wet, loose, fine to medium grained, trace red grains.	
-	30.0					

CHM HILL

PROJECT NUNBER 107483.08.02

BORING NUMBER NW08-084

SHEET 2 OF 4

### SOIL BORING LOG

# PROJECT Reynolds Metals -- RMC-Troutdale

# LOCATION NWO8 Along Sundial Road

ELEVATION .

# DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

# DRILLING METHOD AND EQUIPMENT Cable Tool; Drilling 8-inch I.D. Steel Casing

WATER	LEVEL	s			STARTFIN	ISH 9-20-	96 LOGGER Ivan Gall
TF		SAMPLE	[	STANDARD	SOIL DESCRIPTION		COMMENTS
DEPTH BELOI SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY	PENE TRATION TEST RESULTS 0'-0'-0' (N)	SOIL NAME, USCS GROUP SYMBOL, CON MOISTURE CONTENT, RELATIVE DENS OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	LOR, SITY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-	30.0 31.5		1.3	19-23-23 (48)	SAND, (SW), moderate yellowish brow yr 5/4) wet, medium dense, tine to m grained, trace of silt.	edium -	30 leet bgs water sample: T=18,5 degrees C pH=8.57 cond=188 F-=NA
-						-	
350 — -						-	
-						-	
40.0 -	40.0						_
	41.5		1.4	15-9-23 (32)	SANL, (SW), as above, to 41 teet bgs Sharp contact with <u>SAND</u> , (SW), medi dark gray (N4), wet, loose to medium dense, the to medium grained, with si organic-rich layers (0.1 teet thick).	s. lum _ lltand _	-
- 46.0 -			-		· · · · · · · · · · · · · · · · · · ·	-	
50.0 -	-				SAND, (SW), medium dark gray (N4), y loose, very fine to fine grained, with s layers (to 0.1 feet thick), trace mica red grains.	wet, - silt and -	- 50 teet bgs water sample: T=13.7 degrees C pH=8.85 cond=180 F-≈0.19
- - - 55.0					•		-
1 1 1	80.0						- - - -



PROJECT NUNBER 107493.08.02

BORING NUMBER MW08-094

SHEET 3 OF 4

## SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

## LOCATION NWOB Along Sundial Road

ELEVATION .

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# DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

# DRILLING METHOD AND EQUIPMENT Cable Tool; Drilling 8-inch LD. Steel Casing

WATER	LEVEL	S			START _9-18-96 FINISH _9-2	0-98 LOGGER Ivan Gall
TE		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELOV SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS 8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-	80.0 81.5		0.1	1-1-1 (2)	SAND, (SW), as above except very loose.	Driller adds 20 gallons of water to control heaving sand.
-						
850						
-						
_	70.0				•	
- 100	71.5		0.7	3-8-8 (12)	SAND, (SW), as above except loose, mica flakes larger, trace of organics.	70 teet bgs water sample: - T=14.2 degrees C pH=7.15 cond≠190 F-=0.39
- - 75.0 -					· · ·	
- 800 –	80.0 81.5		0.8	8-9-4 (13)	SAND, (SW), as above.	
- - 0.28				-	. · · .	
-	90.0					

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PROJECT NUMBER 107493:D8.02 BORING NUMBER

SHEET 4 OF 4

#### SOIL BORING LOG

## PROJECT Reynolds Metals -- RMC-Troutdale

#### LOCATION MWOB Along Sundial Road

ELEVATION .

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING NETHOD AND EQUIPMENT Cable Tool; Drilling 8-Inch I.D. Steel Casing

START 9-18-98 FINISH 8-20-88 LOGGER Ivan Gall WATER LEVELS STANDARD PENETRATION TEST RESULTS SANPLE SOIL DESCRIPTION COMMENTS DEPTH BELON SURFACE (FT) SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY TYPE AND NUMBER RECOVERY FEET DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION 8' -8' -8' (N) SAML, (SW), as above, except medium 8-18-18 (35) 1.0 dense. 81.5 95.0 SAND, (SW), as above. 95 feet bgs water sample: T=14.2 degrees C pH=7.30 cond=220 F-=1.3 98 feet total depth. Soil sample from baller. 100.0 0.201 110.0 115.0





PROJECT NUMBER

BORING NUMBER

SHEET 1 OF 7

#### SOIL BORING LOG

#### PROJECT Reynolds Metals -- RMC-Troutdale

LOCATION NWOB Along Sundial Road

ELEVATION .

DRILLING CONTRACTOR Tacona Pump & Drilling Co.

## DRILLING NETHOD AND EQUIPMENT Foremost Drill DR24 Air Rotary

START 4-29-88 LOGGER K. Gehweller FINISH 5-3-88 WATER LEVELS STANDARD PENETRATION TEST SAMPLE SOIL DESCRIPTION COMMENTS DEPTH BELON SURFACE (FT) SOIL NAME, USCS GROUP SYMBOL, COLOR. RECOVERY FEET TYPE AND NUMBER RESULTS DEPTH OF CASING, DRILLING RATE, INTERVAL NOISTURE CONTENT, RELATIVE DENSITY DRILLING FLUID LOSS. 8'-8'-8' OR CONSISTENCY, SOIL STRUCTURE, TESTS AND INSTRUMENTATION (N) MINERALOGY 0-1.5 feet SILTY SANDY GRAVEL, (GM), gray, moist, loose, fill placed for drilling pad. 5.0 6.0 SAND, (SP), brown, moist, loose, tine grained, well-sorted, SILT, (NH), brown from 8.67-7.0 feet bgs, firm, slighty plastic, 20 to 30% clay. 2-2-5 (7) 1.5 8.5 10.0 10.0 SILT. (MH), light brown, moist to wet, firm to stiff plastic, 20 to 30% clay, 10% fine to 2-4-13 1.5 (17) 11.5 medium sand. 15.0 15.0 SILT, (MH), as above, except soft. 2-3-4 1.5 18.5 20.0 20.0 SAND with SILT, (SW-SM), gray brown, wet, medium dense, tine to medium-grained 5-20-25 1.5 (45) 21.5 (15% silt), sand subangular to subrounded. 25.0 26.0 SAND, (SW), gray brown, wet, very loose, line to medium grained, subangular, trace 3-3-8 (9) 1.3 of silt. 28.5 30.0



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PROJECT NUNBER 107493.08.02

BORING NUMBER MW08-178

SHEET 2 OF 7

#### SOIL BORING LOG

# PROJECT \_\_\_\_\_ Reynolds Metals -- RMC-Troutdale

# LOCATION NWO8 Along Sundial Road

ELEVATION ....

#### BRILLING CONTRACTOR Tacoma Pump & Drilling Co. • DRILLING NETHOD AND EQUIPMENT Foremost Drill DR24 Air Rotary

#### HATED I EVELC

WATER	LEVEL	s			START 4-28-86	-FINISH 5-3	-96	LOGGER K. Gehweller
TF		SAMPLE		STANDARD	SOIL DESCRIPTION	I		COMMENTS
DEPTH BELOV SURFACE (F	INTĘRVAL	TYPE AND NUMBER.	RECOVERY FEET	PENE TRATION TEST RESULTS 8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBO MOISTURE CONTENT, RELATIVE OR CONSISTENCY, SOIL STRUCT MINERALOGY	., COLOR, DENSITY URE,	DE DF TE	PTH OF CASING, DRILLING RATE, ULLING FLUID LOSS, ESTS AND INSTRUMENTATION
	30.0 31.5		1.5	25-50-25/I" (75)	SAND, (SW), as above, except r dense to dense.	nedkm	-	
-								-
350	35.0							-
	38.5		1.5	9-20-25 (45)	SANU, (SW), as above, except n dense, no silt.	1edium	-	_
-								
-								
40.0	40.0				SAND. (SW), gray wet dense, fin	ie to .	- 0	iller reports sand heaving into casing —
-	41.5		LI ·	25-35-40 (75)	medium-grained, subrounded to subangular. Becomes medium to grained from 41.7-42 feet bos.	fine- Some red	- wi 4(	40 feet bgs. water sample collected th s.s. bailer after blowing out hole at - ) feet.
-					sand grains observed.		- 40 - T= - F-	=11 degrees C pH=8.38 cond=130
-	45.0						-	
45.0	48.5		<b>1.4</b>	3-3-9 (12)	SAND, (SW), gray, wet, very loos loose, medium to fine- grained, s to subangular, with some red sar	se to subrounded id grains.		-
_							- ·	
-								- -
50.0	50.0				AND (SW) as above events			_
-	51.5		0.75	5-10-12 (22)			-	
								4
-	EE Ó						-	-
<b>65.0</b>	59.6	<u> </u>	0.8	2-3-5 (8)	SAND, (SW), as above except ve	ry loose. –		- -
-	50.5			,				-
							-	
	80.0							



PROJECT NUMBER

BORING NUMBER NW08-178

SHEET 3 OF 7

## SOIL BORING LOG

## PROJECT Reynolds Netals -- RMC-Troutdale

## LOCATION MWOB Along Sundial Road

ELEVATION .

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# DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

## DRILLING NETHOD AND EQUIPMENT Foremost Drill DR24 Air Rotary

WATER	ER LEVELS				STARTFINISH	5-3-8	B LOGGER K. Gehweller	
3F		SAMPLE		STANDARD	SOIL DESCRIPTION		COMMENTS	7
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8'-8"-8"	SOIL NAME, USCS GROUP SYMBOL, COLOR MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	;	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION	
-	80.0 81.5		0.25	- -  (2)	SAND, (SW), as above, except greater percentage of tine-grained sand.	-	Driller reports sand heaving at 80 feet bgs.	-
- 86.0 -	85.0 88.5		1.5	2-2-2 (4)	SAND, (SW), as above.		Driller reports significant volume of sand heaving into casing each time soil samples are collected. 	
- 70.0 	70.0 71.5		0.2	2-2-2 (4)	SAND, (SW), as above.		-	
 0.07 	75.0		0.0	l 1or>8"	No Sample		- Samples sand-locked in casing. - -	
- - - - -	80.0 81.5		0.4	3-3-8 (9)	SAND, (SW), as above at 70 feet.		80 leet bgs water sample: T≖13 degrees C pH=7.35 cond≃420 F-=0.30.	
- - - -	85.0 88.5		1.5	10-25-25 (50)	<u>SAND.</u> (SW), dark gray to black, wet, medium dense, medium to fine- grained, subrounded to subangular, trace mica flakes.		· · ·	
1	80.0					1		



PROJECT NUNBER 107493.00.02

BORING NUMBER NW08-178

SHEET 4 OF 7

### SOIL BORING LOG

# PROJECT Reynolds Metals -- RMC-Troutdale

# LOCATION NWOB Along Sundial Road

ELEVATION \_

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

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# DRILLING METHOD AND EQUIPMENT Foremost Drill DR24 Air Rotary

WATER	LEVEL	S			START98	FINISH	B LOGGER K. Gehweller
зF		SAMPLE			SOIL DESCRIPTION	N	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	PENE TRATION TEST RESULTS 0' -0' -0' (N)	SOIL NAME, USCS GROUP SYMBO MOISTURE CONTENT, RELATIVE OR CONSISTENCY, SOIL STRUCT MINERALOGY	UL, COLOR, DENSITY IURE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-	90.0 91.5		1.5	1-3-3 (8)	SAND, (SW), black, wet, very lo to line grained, subrounded.	iose, coarse	Driller reports continuing difficulty with heaving sands.
-	05.0					-	- 
<b>950</b> -	95.0		1.5	10-13-18 (31)	<u>SAND</u> , (SW), as above except r dense.	nedium -	
-						-	
-	100.0					-	
-	101.5		1.3	5-12-12 (24)	SAND. (SW), as above.	-	100 feet bgs water sample: T=13 degrees C pH=8.58 cond=440 - F-=4.89
-						4	
- 0.201	105.0				No Sample	-	-
	108.5		0.0	8-8-7 (13)		1 1 1	· -
_						1	. 4
110.0	110.0				No Sample	-	-
-	111.5		0.0				-
-						-	. <b>.</b>
- 115.0	115.0				SAND, (SW), as above at 100 fe	et	
-	118.5		1.5	4-4-8 (10)		-	118 feet bgs water sample:
-						4	T=10 degrees C pH=8.73 cond=500 F-=0.36
-	120.0					-	

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PROJECT NUNBER 107493.08.02

BORING NUMBER NW08-178

SHEET 5 OF 7

#### SOIL BORING LOG

# PROJECT Reynolds Metals -- RNC-Troutdale

# LOCATION MWO8 Along Sundial Road

ELEVATION \_

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

# DRILLING NETHOD AND EQUIPMENT Foremost Drill DR24 Air Rotary

WATE	R LEVEL	.s			START FINISH	86 LOGGER K. Gehweller
<b>∓</b> F		SAMPLE	Ę	STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS 8" -8" -8" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, NINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	120.0 121.5		1.5	3-8-8 (12)	SAND, (SW), dark gray to black, wet. loose, with some small (less then 0.25-Inch) rounded to subangular gravel.	
125.0 -	125.0	-				-
	128.5		1.5	3-8-12 (18)	SANLI, (SW), dark gray to black, wet, loose to medium dense, medium to fine-grained, subangular to subrounded, no gravel.	
130.0	130.0		1.5	6-8-12 (20)	SAND, (SW), as above with trace small (less than 0.25 inch), subrounded gravel.	
	131.5					
- 136.0	135.0					- - -
	138.5		1.2	1-1-9 (10)		137 feet her weter complex
-						T=13.5 degrees C pH=7.01 cond=502 - F-=0.28
140 n	140.0					
-	141.5		0.75	50/5"	SANI, (SW), as above.	Partiai retrieval.
_						
	145.0				· 1	1
	148.5		1.5	14-50/3"	SAND, (SW), as above.	-
-					-	-
-	150.0				· · · ·	-



PROJECT NUNBER 107493.08.02

BORING NUMBER NW08-178

SHEET 8 OF 7

## SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

# LOCATION NWOB Along Sundial Road

ELEVATION \_

## DRILLING CONTRACTOR Tacoma Pump & Drilling Co. DRILLING NETHOD AND EQUIPMENT Foremost Drill DR24 Air Rotary

WATE	R LEVEL	S			STARTFINISH _5	5-3-8	LOGGER K. Gehweller	
×F		SAMPLE		STANDARD	SOIL DESCRIPTION		COMMENTS	-
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION	
	150.0 151.5		1.5	2-2-5 (7)	SAND, (SW), as above except no gravel.	-	·	1
							· ·	
106.0 -	158.5		1.5	1550/2"	<u>SAND</u> . (SW), as above except coarser grain.		Gravel present in material being pumped trom borehole. Fine rounded gravel. 157 feet bgs water sample:	
	-					-	T=1L3 degrees C pH=8.5 cond=550 F-≕0.18	
160.0	180.0				SAND with GRAVEL (SW) grav brown wet		·	
	181.5		1.5	15-25-50/8"	Redum dense, coarse sand, small gravel (less than 0.25-inch), gravel subrounded, primarily black and green.	-		
	-				``		-	
0.301	185.0				SAND with GRAVEL (SW) as above		-	
-	188.5		1.0	50/8"		-	-	
-					• •	-		
- 170.0	170.0				SAND with GRAVEL (SW) as above			
-	171.5		0.5	50/5"		-	-	
_						-	-	
175.0	175.0				No Samolo		-	
_	178.5		0.0	50/3"	nu Sdikpie	-	-	
_							177 feet bgs water sample: T≖12.1 degrees C pH=7.8 cond=850 -	
_	180.0					-	F-≖0.27 -	

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PROJECT NUMBER 107493.08.02 BORING NUMBER

SHEET 7 OF 7

#### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

#### \_LOCATION\_NWO8 Along Sundial Road

ELEVATION .

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

## DRILLING NETHOD AND EQUIPMENT Foremost Drill DR24 Air Rotary

START 4-29-98 FINISH 5-3-90 LOGGER K. Gehweller WATER LEVELS . STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION COMMENTS SE SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY DEPTH BEL SURFACE ( TYPE AND NUMBER RECOVERY FEET DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, INTERVAL 8' -8' -8' TESTS AND INSTRUMENTATION (N) 180.0 SAND with GRAVEL, (SW), gray brown, wet, very dense, higher percentage of fine to medium grained sand, slightly larger gravel than sample at 170 feet. 50/4" 1.2 181.5 185.0 195.0 SAND with GRAVEL, (SW), as above. 20-50/4" 1.5 188.5 190.0 100.0 SILT, (ML), medium gray, wet, very stiff, homogeneous, with trace fine grained 25-25-25 0.8 (50) sand. 191.5 0.201 197.0 SAND, (SP), medium gray, wet, medium dense, 197.0-197.5 teet fine grained. Bottom of barehale 197 feet. 12-25-25 (50) Split-spooned to 198.5 feet. 197 feet bgs water sample: 1.5 198.5 SILI, (ML) as above at 189 feet, from 197.5-198.5. T=13.3 degrees C pH=7.4 cand=700 F-=0.25 200.0 205.0





#### PROJECT NUMBER OPE39293.B1.01

WELL NUMBER MW-08-027

SHEET 1 0F 1

Stee

Diameter ! ocking wild

و"

PVC Casing

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Ceo,

diameter 10 slot dule 40 PVC Scre flush-threaded

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#### MONITORING WELL GEOLOGIC AND CONSTRUCTION LOG

PROJECT Reynolds Metals LOCATION Near Columbia River by Outlet of Company Law DRILLING CONTRACTOR GeoTech-Mickey MEASURING POINT ELEV (NGVD) \_\_\_\_\_25.32 DRILLING METHOD AND EQUIPMENT HSA 6 1/4" Augers Canterra 250 FINISH 7-7-94 17.24 7-12-94 WATER LEVEL ELEV/DATE ... START 7-7-94 LOGGER Heidi Hoffmann STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION WELL COMPLETION DIAGRAM USCS DESCRIPTION 됀 SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, RÉCOVERY FEET DEPTH BEL TYPE AND NUMBER INTERVAL 6" - 6" - 6" MINERALOGY (N) Locking Cap Stickup =2.4 ft oncrete Pad PVC 2.5 SILTY SAND, SM, dk brown, (10YR 3/3), v. sl. moist. OVM=0.0. Spoon broke SM 1.5 S-1 4.0 5.0 5.0 SILTY SAND, SM, dk brown, (IOYR 7-8-12 3/3), sl. moist, medium. S-2 1.5 (20) 6.5 At 6.2: SAND, SP, salt & pepper, sl. moist, medium-coarse sand. 7.5 OVM=0.0. tonite SAND, SP, sait & pepper, v. sl. olclay 7-6-9 Chips S-3 1.2 moist, medium-coarse, medium. (15) 9.0 OVM=0.0. Be SP 10.0 10.0 SAND, SP, salt & pepper w/red, v. sl. moist, loose. OVM=0.0. 4-5-5 S-4 1.3 (10) 11.5 Sand 20x40 12.5 SAND, SP. salt & pepper, moist-wet, medium, 6" of SM/ML, dk brown, (10YR 4/3), wet. OVM=0.0. 5-7-8 S-5 1.3 SM/ML (15) 14.0 15.0 Supreme 15.0 SAND, SP, salt & pepper, wet, medium, ~5% silt. OVM=0.0. 6-6-14 S-6 t.3 (20)16.5 17.5 SAND, SP, salt & pepper, wet. 5-6-6 medium, medium-coarse, loose. S-7 1.2 Silica Sand (12) 0VM=0.0. 19.0 20.0 20.0 SAND, SP, same as above. 4-6-5 OVM=0.0. S-8 1.2 SP Colorado (11) 21.5 22.5 SAND, SP, same as above. OVM=1.1. 20×40 5-5-6 S-9 1.2 (11) 24.0 25.0 25.0 SAND, SP, salt & pepper, wet. medium, ~5% subrounded pebbles. 7-7-14 5-10 1.1 (21) OVM=0.0. 26.5

BOH=28



#### PROJECT NUNBER 107493.08.02

BORING NUMBER MW08-127

SHEET I OF 5

#### SOIL BORING LOG

# PROJECT Reynolds Metals -- RMC-Troutdale

LOCATION NWOB

ELEVATION \_

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING NETHOD AND EQUIPMENT Cable Tool

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WATER	LEVEL	S			START 8-27-98 FINISH 7-10-	96 LOGGER K. Gehweller
жF		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO	INTERVAL	TYPE AND NUMBER	RECOVERY	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, NOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, NINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-					0-1.0 feet bgs: Rock till for drill pad crushed basalt.	-
- 60 -					SAND with SILT, (SW-SM), brown, wet, loose, line to medium grained sand.	- 8 feet bgs water sample: T=17.1 degrees C pH=8.74 cond=200 F-=.318 - -
- - 10.0 -						- - - -
- - 16.0					-  SAND, (SW), as above.	-
					-	-
-		·			SANL, (SW), as above, with red and gray volcanics from Sandy River Basins, fine to coarse grained sand.	-
25.0 -	25.0 28.5		1.5	34-84-82 (148)	SAND, (SW), as above with chunk of wood, dense, gray. -	25 leet bgs water sample: T=20 degrees C pH=0.7 cond=800 F-=4.08 High blow counts due to heaving sands.
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PROJECT	NUNBER
107 493.D	8.02

BORING NUMBER

SHEET 2 OF 5

#### SOIL BORING LOG

## PROJECT \_\_\_\_\_\_ Reynolds Metals -- RMC-Troutdale

#### LOCATION MW08

ELEVATION .

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING METHOD AND EQUIPMENT Cable Tool START 8-27-98 LOGGER K. Gehweller FINISH 7-10-98 WATER LEVELS STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION COMMENTS 3E DEPTH BEL TYPE AND NUMBER SOIL NAME, USCS GROUP SYMBOL, COLOR, NOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, RECOVERY FEET DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION INTERVAI 8'-8'-8' MINERALOGY (N) SAND with GRAVEL, (SW), as above except fine gravel (up to 3/4 inch across), subrounded to angular, (gravel 10-15%). Heaving sands. 360 SAND with GRAVEL, (SW), as above. Wood fragments at 38 feet bgs. Becoming coarser, gravel up to 1.5-Inches across. 40.0 SAND, (SW), as above with a trace of fine gravel, no wood tragments. 45.0 45.0 SAND, (SW), gray, wet, medium dense to dense, tine to coarse grained, sand with trace of fine (1/4 inch) gravel, micaceous. Heaving sands. 2-10-50 (80) 45 teet bgs water sample: 1.5 48.5 T=24.3 degrees C pH=8.98 cond=730 F-=1.30 50.0 SAND, (SW), as above. 65.0 SAND, (SW), as above. Still heaving.



PROJECT NUNBER 107493\_D8.02 BORING NUMBER

SHEET 3 OF 5

#### SOIL BORING LOG

#### PROJECT Reynolds Metals -- RMC-Troutdale

LOCATION NW08

ELEVATION .

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

## DRILLING NETHOD AND EQUIPMENT Cable Tool

START 8-27-98 FINISH 7-10-98 LOGGER K. Gehweller WATER LEVELS . STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION COMMENTS 완 DEPTH BEL SURFACE ( SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, TYPE AND NUMBER RECOVERY FEET INTERVAL DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION 8\* -8\* -8\* (N) MINERALOGY SAND. (SW), as above. 85.0 0.28 SAND, (SW), as above, except dense, trace tine to coarse (1 inch) rounded 85 feet bgs water sample: 27-35-38 (73) 1.1 T=20.1 degrees C pH=7.28 cond=750 gravel 88.5 F-=0.35 70.0 SAND, (SW), as above. 75.0 SAND, (SW), as above. At 79 feet start seeing increased Harder balling from 79 feet on. percentage of coarse rounded gravel (up 80.0 to 2 inches). SILI. (ML), gray, wet, firm, with rounded to subangular fine gravel (up to 1 inch). 84.0 Contact with hard gravel at 84 feet. SILTY GRAVEL, (GM), wet, very dense. 75/2.5" 0.2 85.0 85.5 85 feet bgs water sample: T=18.2 degrees C pH=7.37 cond=900 F-=0.24

PROJECT NUMBER BORING NUMBER MW08-127 107493.08.02 SHEET 4 0F 5 CHM HIL SOIL BORING LOG PROJECT Reynolds Metals -- RMC-Troutdale LOCATION NW08 DRILLING CONTRACTOR Tacoma Pump & Drilling Co. ELEVATION . DRILLING NETHOD AND EQUIPMENT Cable Tool FINISH 7-10-98 START 8-27-98 LOGGER K. Gehweiler WATER LEVELS STANDARD PENETRATION TEST SOIL DESCRIPTION COMMENTS SAMPLE 3E SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, RECOVERY FEET DEPTH BEL SURFACE TYPE AND NUMBER RESULTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, INTERVAL 8"-8"-8" TESTS AND INSTRUMENTATION MINERALOGY (N) SANDY GRAVEL, (GW), gray-green, wet, dense, 20 percent line to coarse sand, coarse gravel, rounded to angular up to i 22 ppm FID at top of cyclone. 1/2 inches, evidence of cementing more obvious at 91-92 feet. Can smell napthalene in air at top of cyclone (22 93 feet bgs water sample: ppm) but not at bottom of cyclone where collect soil. Napthalene being volatized. T=14.2 degrees C pH=7.81 cond=150 94.5 F-≈0.48 0.76 50/2" SANDY GRAVEL, (GW), as above. Soli sample at 94.5 mostly gravel (up to 0.25 1 1/2 inches) with some cementation. 98.0 Strong napthalene odor. Could only fill (1) 8 ounce jar. 100.0 SANDY GRAVEL. (GW), as above. 0.201 <u>SANDY GRAYEL</u>, (GW), as above, larger (up to 2 inches) rounded gravel, smaller broken angular pieces of gravel, medium to coarse sand, greater than or equal to 15 percent sand. 110.0 SANDY GRAVEL. (GW), as above. 110 feet bgs water sample: T=15.3 degrees C pH=7.75 cond=140 F-=0.51 115.0 160 No sample recovery with 3 Inch spoon. 50/0" Try driving 2 inch spoon. No recovery. 118.5



#### PROJECT NUNBER 107493.D8.02

BORING NUMBER NW08-127

SHEET 5 OF 5

#### SOIL BORING LOG

#### PROJECT Reynolds Metals -- RMC-Troutdale

LOCATION MWOB

ELEVATION .

## DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

#### DRILLING METHOD AND EQUIPMENT Cable Tool

START 8-27-98 FINISH 7-10-98 LOGGER K. Gehweller WATER LEVELS STANDARD PENETRATION TEST RESULTS SOIL DESCRIPTION SAMPLE COMMENTS DEPTH BELON SURFACE (FT) TYPE AND NUMBER RECOVERY FEET SOIL NAME; USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION INTERVAL 8' -8" -8" MINERALOGY (N) SANDY GRAVEL, (GW), as above. Becoming finer at 122 feet bgs. 25.0 SANDY GRAVEL. (GW), as above except 125 feet bgs water sample: very line sand, some slit. T=15.2 degrees C pH=7.78 cond=220 F-=0.35 Producing less water at top of silt At 127.4 leet bgs <u>SILT with SAND</u>, (NH), gray, wet, 11m, more fine gravel than sand, sand is coarse, sand and gravel are layer. Lift up casing a little to get water sample at top of silt. Water smells like napthalene. Strong Strong subangular to rounded. Silt becomes less odor from top of cyclone. Driller reports gravely with depth. sheen on water. Water drys up at 131 130.0 feet bgs. 134.0 SILT. (MH), gray, dry, very hard, no odor. 25-45-50/4" 1.45 135.0 135.5 140.0 146.0

	I.
CHM HILL	

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PROJECT NUMBER

107 493.08.02

BORING NUNBER

SHEET I OF 1

## WELL COMPLETION LOG

PROJECT Rey	nolds Metals RMC-1	Troutdale		LOCATION MWOB	
ELEVATION		OR	ILLING CONTRACT	ron <u>Tacoma Pump &amp; Drilling C</u>	
DRILLING NETI	HOD AND EQUIPMENT .	ST/	ART 8-27-98	FINISH 7-10-98	LOGGER K. Gehweller
	GROUND SURFACE		E E		
10		ding Locking Ce		Ve Steel Ceslin er 2.5 feet rise	
- 20 — - -		Expan		8" ID Protect	
30 -					
40 -		ntrelizer-			
50 50 		Ce Slurry Seel		papa	
(FEET) (FEET) (FEET)	·	Bentonite		2" demeter 880-flush thre PVC Casing	
DEPTH				Chedule	
80 - - -					
80 — - - -				ack screen with	
100 		τ		ter 180 PVC pref ch slot size) Ica Send	
10		20X40 Fine San Seal		Contraction of the second seco	
120		ent tonite <sup>11</sup> 10X20 Colorado Silica Sand		I foot Itush bhreaded Schedule 80 PVC sump	
130 T T T					See Boring Log For Drilling Details

СКМ НИЦ

PROJECT NUMBER

107493.08.02

BORING NUMBER

MW08-169

SHEET I OF 7

#### SOIL BORING LOG

PROJECT Reynolds Netals -- RMC-Troutdale LOCATION NW08 DRILLING CONTRACTOR Tacoma Pump & Drilling Co. ELEVATION FINISH 5-9-98 LOGGER Ivan Gali START 5-1-98 WATER LEVELS . STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION COMMENTS S E DEPTH BEL SOIL NAME, USCS GROUP SYNBOL, COLOR, TYPE AND NUMBER RECOVERY FEET DEPTH OF CASING, DRILLING RATE. NTERVAL NOISTURE CONTENT, RELATIVE DENSITY DRILLING FLUID LOSS, 8'-8'-8' OR CONSISTENCY, SOIL STRUCTURE, TESTS AND INSTRUMENTATION (N) MINERALOGY 0-1.5 teet bgs: Rock fill for drill pad crushed basalt. Driller adds 15 gallons of water. 5:0 SAND with SILT, (GW-GM), dark yellowish brown (10 yr 4/2), wet, loose; sharp contact at 5.5. feet bgs with <u>SAND</u>, (SW), brownish gray (5 yr 4/1), wet, loose, poorly-rounded, fine to medium grained. 5.0 Casing advancing easily. 1.0 4-5-8 8.0 (11) 10.0 10.0 10.5 SAND. (SW) as above. 4-4-3 0.5 16.0 Driller adds 10 gallons of water. Sample' with strainer. Sand heaving into casing. SAND, (SW), as above. 20.0 SAND. (SW), as above. Sample: check strainer. Add 15 gallons water. 28 feet bgs water sample: 25.0 T=18.5 degrees C pH=8.7 cond=480 SAND. (SW), as above. F-=3.38. Sample: Check strainer. Heaving sand in . casing. SAND, (SW), as above with gravel (15%), I-inch thick slit layer 27 feet bgs -gravel (15%) up to I-inch at 28 feet bgs gravel poorly rounded, up to 1.5-Inch diameter, red and gray colored gravel. 28.0 - red & gray volcanics from sandy river 2-8-10 (18) 0.9 basin. 29.0

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PROJECT NUMBER 107493.08.02

BORING NUMBER NW08-169

SHEET 2 OF 7

T=11.3 degrees C pH=8.77 cond=520 F-=0.34

## SOIL BORING LOG

## PROJECT Reynolds Metals -- RNC-Troutdale

## LOCATION MWOB

ELEVATION \_\_

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING NETHOD AND EQUIPMENT B" Cabletool to 85 ft, 8" air rotary to 200 ft

WATE	R LEVE	.s			START 5-1-98 FINISH 5-	9-98 LOGGER Ivan Gall
<b>x</b> F		SAMPLE	E	STANDARD	SOIL DESCRIPTION	CONMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8" -8" -8" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
						Add 5 gallons water.
35.0 -			-		<u>SAND</u> , (SW), with gravel, as above.	Add 15 gallons water heaving sand in casing; sample from strainer.
- - 0.04 -					SAND, (SW), dark yellowish brown (10 yr 4/2), wet, toose, fine-to medium grained, poorly rounded. <u>SILTY SAND</u> , (SM), dark yellowish brown (10 yr 4/2), 15-20X silt, with <u>SILT</u> , (ML), dark gray (N3), layer 8-inch thick, 10X	- Wood fragments 0.2-Inch diameter
- 450	48.0		10	2-2-2	45 feet bgs.	
-	47.0		1.0	(4)		higher permeablity. 48 leet bgs water sample:
-	48.0 48.0		1.0	4-11-12 (23)	48 feet: <u>SAND,</u> (SW), dark gray, (N3), wet, very loose, fine-medium grained.	- T=18.0 degrees C pH=7.0 cond≠800 - F-≖0.4
<b>50.0</b> -					47 feet: <u>SAND</u> , (SW), as above except loose.	Driller add 10 gallons of water. Balling slit tragments with sand; wood tragments (<1%)
- 55.0	55.0		0.9	I-I-2	<u>SAND,</u> (SW), as above, except very loose, with SILT, (ML) layers 1-2 inches thick	Driller reports no heaving sand in casing
-					dark gray (N3), wet, very soft. SAND, (SW), dark yellowish brown (10 yr 4/2), wet, loose, tine-to coarse-grained, poorly rounded.	58 feet: Driller reports 15 feet heaving sand in casing. 58 feet bgs water sample:

PROJECT NUNBER 107 493.08.02

BORING NUMBER NW08-169

SHEET 3 OF 7

### SOIL BORING LOG

## PROJECT \_\_\_\_\_ Reynolds Metals -- RMC-Troutdale

#### LOCATION NWOB

ELEVATION .

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# DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

#### DRILLING NETHOD AND EQUIPMENT B" Cabletool to 85 ft, 8" air rotary to 200 ft START 5-1-88

WATER	LEVEL	.s			START86	FINISH	5-8-86	LOGGER Ivan Gall
жF		SAMPLE	E	STANDARD	SOIL DESCRIPTION	1		COMMENTS
oepth Belo Surface (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBO MOISTURE CONTENT, RELATIVE OR CONSISTENCY, SOIL STRUCT MINERALOGY	L, COLOR, DENSITY URE,		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-					SAND, (SW) as above.	_	1	Driller reports 8 feet heaving sand in casing – sample collected from bailer with strainer.
- - 850					<u>SAND</u> . (SW), as above, with trac (to 0.5-inch; 2%).	e gravel		-  Sample from strainer
-								- - -
700 -					SAND, (SW), as above, no grave	1.	_	Sample from strainer driller reports heaving sand in casing.
-								- - -
750 - - -					SAND, (SW), as above.		1	75 feet bgs water sample: T=IL2 degrees C pH=8.8 cond=580 F==0.31 Sample from strainer driller reports 20 feet of heaving sand in casing balling out pebbles (<1%) & silt fragments (<1%).
- - -					SAND, (SW), as above with pebb feet.	les to Bl	- - 	Sample from strainer – driller reports slower casing advance at 83 feet bgs.
					SILTY GRAVEL, (GM), olive gray wet, dense, silt approximately 20 to 2-inches (basalt).	(5 y 4/l) X, gravel		Note: Drilling with cabletool ends at 85 feet - not a permeable zone- air rotary - on 5-9-98. -
0.36 - -								85 feet bgs water sample: T≖11.4 degrees C pH=8.88 cond=370 F-=0.41
-					SILTY GRAVEL, (GN), as above.			

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PROJECT NUNBER 107493.08.02

BORING NUNBER NW08-189

SHEET 4 OF 7

#### SOIL BORING LOG

# PROJECT Reynolds Netals -- RMC-Troutdale

#### LOCATION MWOB

#### DRULLING CONTRACTOR Tacoma Pump & Drilling Co. ELEVATION \_ DRILLING METHOD AND EQUIPMENT B" Cabletool to 85 1t, 8" air rotary to 200 1t

WATE	R LEVE	.s		•	START88	FINISH 5-9-9	6 LOGGER Ivan Gall	
зF		SAMPLI	E	STANDARD	SOIL DESCRIPTION		COMMENTS	]
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY. FEET	0" -0" -0" (N)	SOIL NAME, USCS GROUP SYMBOL MOISTURE CONTENT, RELATIVE D OR CONSISTENCY, SOIL STRUCTU NINERALOGY	., COLOR, DENSITY URE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION	
-					<u>GRAYEL</u> , (GW), olive black (5 y dense, partially cemented, ceme gravel moderately well rounded,	2/1), wet, ent tan, – primarily –	Samples collected in strainer. Driller reports increased permeability percent of cement varies higher permeability corresponds to less cement.	
960 -					<u>GRAVEL</u> , (GW), as above.	- - - -	Sample collected in strainer cement visible on gravel.	- - - -
- - 100.0 –					GRAVEL. (GW), as above.		100 feet bgs water sample: T=12.2 degrees C pH=7.30 cond=110	
- - - 105.0 -					<u>GRAVEL</u> , (GW), as above.		102 feet: Cement color change to light gray - 103 feet: Cement tan. Formation producing constant water less than 20 gpm.	
- - 110.0					GRAYEL, (GW), as above.		ll0 feet bgs water sample: T=11.8 degrees C pH≖7.81 cond=110	
- - 115.0 —				-			r-=0.30 Formation producing approximately 35 gpm.	
-								



PROJECT NUNBER

BORING NUMBER NW08-189

SHEET 5 OF 7

#### SOIL BORING LOG

#### PROJECT \_\_\_\_\_ Reynolds Metals -- RMC-Troutdale

LOCATION NWO8

ELEVATION .

# DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING NETHOD AND EQUIPMENT 8" Cabletool to 85 ft, 8" air rotary to 200 ft LOGGER Ivan Gall START 5-1-98 FINISH 5-8-98 WATER LEVELS \_ STANDARD PENETRATION TEST RESULTS SOIL DESCRIPTION COMMENTS SAMPLE £. DEPTH BEL SURFACE ( RECOVERY SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, TYPE AND NUMBER DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION INTERVAL 8'-8'-8' MINERALOGY (N) GRAVEL, (GW), as above. Sample from cyclone into strainer. 122 feet bgs water sample: T=1L7 degrees C pH=7.82 cond=140 F-=0.38 125.0 GRAVEL. (GW), as above. 125 feet: Driller reports decreased permeability. 130.0 SILT. (NL), dark yellowish brown (10 yr 4/2), wet, firm. No water discharging from cyclone. 136.0 GRAYEL, (GW), same as at 125 feet. 130 feet bgs water sample: T=12.5 degrees C pH=7.99 cond=212 138-137 feet <u>SAND</u>, (SW), olive gray (5y 3/2), wet, dense, partially cemented, 15% F-=0.25 Driller reports higher permeability. (5) gravel 137: <u>GRAVEL</u>, (GW), olive black (5y 2/1), wet, dense, cement light olive brown (5y 5/8) gravel moderately well rounded. 40.0 Driller reports approximately 80 gpm/ from cyclone. 142 feet bgs water sample: T=12.2 degrees C pH=7.89 cond=212 F-=0.25 145.0

GRAVEL, (GW), as above, cement dark yellowish orange (10 yr 8/8).

сым н					PROJECT NUNBER 107493.D8.02	BORING NU MW08-168	INBER SHEET B OF 7
				· .	SOI	L BORI	NG LOG
PROJEC	T Rey	nolds Ne	etais	RMC-Troutdale	L0	CATION MWO	Β
ELEVAT	ION				DRILLING CONTRACTOR Tacon	aa Punnip & Dri	iling Co.
		HOEI AN	d Equi	PHENT D'Lable	CTART 5-1-98 ET	JTCU 5-9-9	B LOCCED Ivan Gall
TATER	LEVEL	SANPLE		STANDARD	SOIL DESCRIPTION		COMMENTS
H BELOW	IVAL	AND	VERY	PENETRATION TEST RESULTS	SOIL NAME, USCS GROUP SYMBOL, CO NOISTURE CONTENT, RELATIVE DENS	LOR, SITY	DEPTH OF CASING, DRILLING RATE,
SURF	INTER	TYPE	RECO. FEET	8* -8* -8* (N)	OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		TESTS AND INSTRUMENTATION
					<u>GRAVEL</u> , (GW), as above, cement du yellow green (5gy 5/2), some silt.	sky	Oriller reports lower permeability. Wa Is very silty.
-			-			4	
155.0					<u>GRAVEL</u> , (GW), as above, greenish b (5av 2/1).	lack -	Briller reports harder drilling.
1						1	155 feet bgs water sample:
-						-	T=14.0 degrees C pH=8.23 cond=24 F-=0.26
- 1600 -					SAND, (SW), dusky yellowish green ( 3/2), wet, loose, fine to very coarse-grained, poorly rounded, tra pebbles.	(lOgy ce -	Driller reports sand heaving into cas and high permeability 80 gpm from cyclone.
					GRAVEL, (GW), as above, weakly cemented, 5% silt. Weathered basait dusky red purple (Srp 2/2), very der	, very	182 teet bgs water sample: T=12.7 degrees C pH=8.42 cond=250 F-=0.25
- 0.381					,,,,,,,,		Lower permeability reported (approximately 30 gpm).
						-	
						]	ior leet. 5 percent sand, 5 percent
70.0-					,	_	
H						-	•
-					Weathered basait, very dusky red pu (5rp 2/2), very dense.	rple -	Driller reports very low permeability water), hard drilling, sample from stra and cyclone.
- 							
						-	
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PROJECT NUMBER 107493.D8.02 BORING NUMBER MW08-189

SHEET 7 OF 7

## SOIL BORING LOG

## PROJECT Reynolds Metals -- RMC-Troutdale

#### LOCATION MWOB

ELEVATION \_

# DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

# DRILLING NETHOD AND EQUIPMENT 8" Cabletool to 85 1t, 8" air rotary to 200 1t

WATER	LEVEL	S	<u> </u>		START	_FINISH _5-8-8	B LOGGER Ivan Gall
₹F		SAMPLE	Ξ	STANDARD	SOIL DESCRIPTION		COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY	TEST RESULTS 0'-0'-0' (N)	SOIL NAME, USCS GROUP SYMBOL MOISTURE CONTENT, RELATIVE I OR CONSISTENCY, SOIL STRUCT MINERALOGY	L, COLOR, DENSITY URE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
					Weathered basalt, as above.		
-  190.0 - - -					Weathered basalt, as above, col grayish purple (5p 4/2).	lar now - - - - -	183-190 feet bgs water sample: T=14.0 degrees C pH=8.47 cond=280 F-=0.19
- 0.301 - -				- - - - -	198 feet: basait, grayish black ( very dense.	N2), wet,	Driller reports harder drilling - low permeability (1-3 gpm). 183.0-200 leet bgs water sample: T=14.0 degrees C pH=8.37 cond=280 F-=0.19
- 200.0 - -			-		200 feet total depth bgs.		Total depth = 200 feet bgs. -
- - 2050 - - - - - - - - - - - - - - - - - -					· ·		

	PROJECT	NUNBER	BORING NUMBER	SHEET I OF 1
CHM HILL		WELL	COMPLETION I	_0G
PROJECT Reynolds Metals	RMC-Troutdale		OCATION MWOB	
ELEVATION	DRI	LLING CONTRACTOR Tac	oma Pump & Drilling Co.	
DRILLING NETHOD AND EQ	UIPMENT _ 6" Cabletool to 85 1	It, 8" air rotary to 200 ft		<u>.</u>
WATER LEVELS	ST/	AT 5-22-98	FINISH <u>5-23-88</u>	LOGGER Ivan Gall
0 GROUND SL	RFACE			
10	ocking Cap oncrete	I Cesing	· · ·	
20 -	panding Lc	ctive Stee		
30	ជី	. D Prote		
40 -				
50 -				
80 — - -	6	aded		
	Surry Sa	lameter flush thre Casing		
	Bentonite	2" d PVC		
		8		
BEPTH BEPTH				• •
120	Centraliz			
130 -			reen	
140			repect so with solutions	
150 -	20X40 Fine Sand Seal		oue BO PVC F O Inch slot si O Silice Send O Silice Send	
160			20.01 20.02	
170				
180	ל rado Silica חו Bentonik Grout	foot flush-	PVC Sump	
190 - - 200 -	ති. දිස්ක දිස්ක දී දී දී දී		8	See Boring Log For Dritting Details

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# PROJECT NUMBER

WELL NUMBER

SHEET 1 OF 1

#### MONITORING WELL GEOLOGIC AND CONSTRUCTION LOG

#### PROJECT RMC Troutdale

#### LOCATION N. Landfill

MEASURING POINT ELEV (NGVD) \_\_\_\_\_\_ DRILLING CONTRACTOR GeoTech Exploration

DRILLING METHOD AND EQUIPMENT 6 3/4" ID HSA

#### WATER LEVEL ELEV/DATE \_\_\_

\_START 8/4/94 8:30 AM \_ FINISH \_ 81- - -

\_\_\_\_\_LOGGER Phil Brown

TEF	:	SAMPLE	Ξ	STANDARD	SOIL DESCRIPTION		WELL	COMPLETION DIAGRAM
DEPTH BELOV SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS 6" -6" -6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	USCS DESCRIPTION		
					SANDY SILT W/GRAVEL, SM, loamy. 5% gravel to 1" angular, basallic, dry, It. gray/brown, firm.	-	scking Ca	d Steel-
	5.0			5-6-7 (13)	<u>SILTY SAND</u> , SM, It. brown, damp, medium fine, some minor coarse salt and pepper sand.	- SM_	crete Pad-	Locking MI
5.0 -	- 7.5			5-10-10 (20)	As above 6"; then coarser to med. Less silt, SM/SP, mottled reduction at base, some clay nodules (5%).		Š. C	ule 40 Casing
				4-5-7 (12)	4" SM as above, then <u>SAND</u> , SP, medium, It. brown, damp, loose.		.4" Chips	er, Sched
10.0 -	12.5			8-12-10 (22)	4" SM, brown/gray, mottled, damp firm. Then <u>SAND</u> , SP, salt & pepper, s. moist, medium-coarse, loose.	- SP _	Voiclay 3/	2" Diamet
	15.0			4-6-8 (14)	As above; moist to wet.	-		
15.0	17.5			9-9-8 (17)	SAND, SP, darker, coarser salt and pepper, more angular. Columbia River sand (?), v. moist.		۵.	
	20.0			6-8-9 (17)	As above, Wet at base, minor fine layer at 19.5'.			
20.0 -	22.5			3-6-7 (13)	As above, wet.		Sand -	
-	25.0			4-9-11 (20)	As above. 0.5" silt layer at 24', red staining below silt.	SP -	stair ado Silica	a PVC Scr
25.0 -	27.5			3-4-5 (9)	As above. Silly clay layer=1.5" thick.		zer Dx40 Color	Diameter S
-					SP as above. 6" recovery.	lentral le		2"   
30.0 — -					,			meter Sch
-						- iets	5	2" Dia .

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PROJECT	NUNBER
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BORING NUMBER

SHEET 1 OF 7

#### SOIL BORING LOG

## PROJECT Reynolds Metals -- RMC-Troutdale

#### LOCATION West Side of Site Along Sundial Road

ELEVATION .

## DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

# DRILLING NETHOD AND EQUIPMENT Cable Tool; 10"ID Steel Casing to 8.5 1t, 8"ID-200

START 5-10-98 FINISH 5-17-98 LOGGER K. Gehweller WATER LEVELS. STANDARD PENETRATION TEST RESULTS SOIL DESCRIPTION SAMPLE COMMENTS SE E DEPTH BEL RECOVERY FEET SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, TYPE AND NUMBER DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION INTERVAL 8' -8' -8' MINERALOGY (N) Drive 10 inch dlameter casing to 8.5 feet 2-3 inch rock fill over geotextile liner drill pad. SILTY SANDY GRAVEL, (GN), brown, damp, loose, medium to coarse sand, the gravel, approximately 20 percent silt, less than 15 bgs, then drive 8 inch casing. percent sand. 5.0 SILT. (MH), gray, molst, soft, elastic. 10.0 10.0 SILL. (MH), gray, moist, soft, elastic. 2--2-3 (5) 1.5 11.5 15.0 SILT. (MH), as above except with sand, medium grained. 20.0 20.0 SILT with SAND, (MH), as above except 20 feet bos water sample: 8-5-5 firm. 1.5 (10) T=14 degrees C pH=8.59 cond=390 21.5 F-=0.81 25.0 SILT with SAND, (MH), as above, Increased percentage of sand. increased percentage of sand.



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PROJECT NUNBER

BORING NUMBER

SHEET 2 OF 7

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### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

## LOCATION West Side of Site Along Sundial Road

ELEVATION \_

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

# DRILLING NETHOD AND EQUIPMENT Cable Tool; 10"ID Steel Casing to 8.5 1t, 8"ID-200

WATER	WATER LEVELS				START 5-10-88 FINIS	H _5-17-2	BB LOGGER K. Gehweller		
₹F	F SAMPLE		SAMPLE STANDA		SAMPLE STANDARD SOIL DESCRIPTION				COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	TEST RESULTS 8'-8'-8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOF MOISTURE CONTENT, RELATIVE DENSIT OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	R <b>.</b> Y	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION		
· ·					SILT with SAND, (NH), as above.		30 feet bgs water sample:		
-									
· -					· · · · · · · · · · · · · · · · · · ·	4	·		
36.0					SILT with SAND, (MH), as above.		_		
_							-		
-						4	· –		
-						-	-		
-	40.0					1	·		
- U.U			1.5	10-12-20	S <u>AND</u> , (SW), gray, wet, medium dense, fil to medium grained with a trace of silt.	ne	40 feet bgs water sample:		
_	41.5			(J2/	· ·	]	F-=0.30		
-						_			
-					•	-	-		
46.0					<u>SAND,</u> (SW), as above.	_	Driller reports sand heaving into casing.		
-						-	-		
-						4	-		
-						4	-		
						4	-		
60.0					SAND, (SW), as above.	-	50 feet bgs water sample:		
]							T=18.5 degrees C pH=8.23 cond=750 F-=0.51		
4						]	]		
_		·				1			
<del>55</del> 0 —					SAND. (SW), as above.	_	Driller reports sand beaving into casing.		
4						4			
-						4	·		
-						-			
-	80.0					-	4		
I	00.0	1			•	L			

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PROJECT NUNBER
107 493 08.02

BORING NUMBER NW12-184 SHEET 3 OF 7

#### SOIL BORING LOG

PROJECT Reynolds Netals -- RMC-Troutdale

## LOCATION West Side of Site Along Sundial Road

ELEVATION ...

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING NETHOD AND EQUIPMENT Cable Tool: 10"ID Steel Casing to 8.5 It, 8"ID-200

WATER	LEVEL	s			START 5-10-98 FD	NISH 5-17-8	BB LOGGER K. Gehweller
<b>x</b> F		SAMPLE		STANDARD	SOIL DESCRIPTION		COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY	RESULTS 8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, CO MOISTURE CONTENT, RELATIVE DENS OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	ULOR, SITY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-	.80.0 81.5		1.5	10-50-80/1"	SAMD, (SW), gray, wet, medium dense dense, fine to medium grained, no sil Trace of micaceous flakes and red g of sand.	eto t grains -	60 leet bgs water sample: T=18 degrees C pH=8.54 cond=820 F~=0.48
- - 85.0					SAND. (SW), as above.	 - -	Driller reports sand heaving into ćasing.
-							At approximately 70 feet bgs driller notices sheen and change in water color to brown from gray. Brown sudsy bubbles on water surface.
- 70.0					SAND (SW) as above	-	70 teet has water sample:
							T≂17 degrees C pH=8.5 cond=500 F-=0.55
- - 750 -					<u>SAND</u> , (SW), as above.		Collected soil sample at 80 feet from bailer with strainer. Driller reports sand heaving into casing.
- - - - 0.08			-		SAND. (SW), as above.		
-						-	T≖18.5 degrees C pH=8.72 cond=800 F-≖0.58
					<u>SAND</u> , (SW), as above.		No more brown foam observed at 87
-						-	feet bgs



PROJECT NUMBER 107493.08.02

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BORING NUMBER

SHEET 4 OF 7

## SOIL BORING LOG

# PROJECT Reynolds Metals -- RMC-Troutdale

## LOCATION West Side of Site Along Sundial Road

#### ELEVATION .....

# DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

# DRILLING NETHOD AND EQUIPMENT Cable Tool; 10"ID Steel Casing to 8.5 1t, 8"ID-200

WATER LEVELS					STARTFINISHFINISH	LOGGER K. Genweller
æF		SAMPLE STANDARD			SOIL DESCRIPTION	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY	10" -8" -0" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
       		•			SAND, (SW), as above except a little coarse grained.	90 teet bgs water sample: T=17.1 degrees C pH=8.88 cond=580 F-=0.347.
0.38					SAND, (SW), as above with trace line subangular gravel, coarser to line grained sand, still micaceous.	85 teet bgs water sample: T=18.8 degrees C pH=8.78 cond=480 F-=0.382
- - 0000 -					SAND. (SW), as above. –	Drilling reports harder drilling.
- - 105.0 - -					SAND. (SW), as above except no coarse — sand or fine gravel.	105 teet bgs water sample: T=10.3 degrees C pH=0.07 cond=000 F-=0.48
- + 110.0 - - -					SAMD, (SW), as above except some coarse sand and line gravel. -	
1 11500					SAND, (SW), as above with a trace of light weight white pumice or ash.	115 teet bgs water sample: T=21.4 degrees C pH=7.17 cond=800 F-=0.33 -
				L		



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PROJECT NUMBER

BORING NUMBER

SHEET 5 OF 7

#### SOIL BORING LOG

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# LOCATION West Side of Site Along Sundial Road

#### ELEVATION \_\_\_\_\_

# DRILLING CONTRACTOR Tacona Pump & Drilling Co.

# DRILLING NETHOD AND EQUIPMENT Cable Tool; 10"ID Steel Casing to 8.5 ft, 6"ID-200

WATER	ER LEVELS				START 5-10-98 FINIS	H <u>5-17-8</u>	88 LOGGER K. Gehweller		
зF		SAMPLE		STANDARD	SOIL DESCRIPTION		COMMENTS		
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	λ, Y	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION		
	-				SAND, (SW), as above with rounded line coarse graveL	to	Driller reports sand heaving into casing.		
							 -		
- 125.0 -	125.0				No recovery	-	125 leet bgs water sample:		
-	128.5		0.0	30-30-30/3"		-	T=18 degrees C pH=8.47 cond=720 F-=0.48		
-									
130.0					SAND. (SW), as above.	-	Collected sample with strainer from		
-						4			
-							- - -		
135.0	135.0		1.0	8-12-80	SAND. (SW), gray, wet, medium dense to dense, fine to medium grained, no gravel,		135 leet bgs water sample:		
-	138.5			(72)	some mica and red sand grains.		T=15 degrees C pH=8.34 cond=590 F-=0.34		
-						1	-		
140.0 -					SAND, (SW), as above. Some gravel starting to appear in cuttings along with some coarse sand.		Dribing becomes harder at 140 feet		
-					• · · · · · · · · · · · · · · · · · · ·	4			
- 145.0 —					SAND. (SW), as above with some coarse		145 leet bgs water sample:		
-					sang ang tine diack gravel, angular to subrounded.	-	T≠15 degrees C pH=8.92 cond≠700 - F-=0.48 -		
						-			
						]	·		



PROJECT NUMBER

BORING NUNBER NW12-184

SHEET 8 OF 7

## SOIL BORING LOG

PROJECT \_\_\_\_\_\_ Reynolds Metals -- RMC-Troutdale .

# LOCATION West Side of Site Along Sundial Road

ELEVATION \_\_\_\_

# DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING NETHOD	AND EQUIPMENT	Cable Tool; 10"ID Steel Casing to 8.5 ft, 8"ID-200

WATER	ER LEVELS				START 5-10-88 FINISH 5-17-	98 LOGGER K. Gehweller
₹F		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYNBOL, COLOR, NOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-					SANED, (SW), as above.	Driller reports difficulty driving casing.
- - 165.0					<u>SAND,</u> (SW), as above.	155 feet bgs water sample:
-				-	-	F-=0.52
- 150.0 -					SAND, (SW), as above. Some fine gravel.	
- - - 185.0					- - 	- - 185 feet bgs water sample: —
						T≖14 degrees C pH=7.25 cond=420 F-=0.24 -
mu - -	-				SAND, (SW), as above	
- 0.371 - - -					<u>SAND</u> , (SW), as above with some fine subangular gravel, wood fragments	- 175 feet bgs water sample: T≈18 degrees C pH=7.35 cond=520 F-∞0.18
-				· .		

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PROJECT NUMBER

BORING NUMBER

SHEET 7 OF 7

#### SOIL BORING LOG

# PROJECT Reynolds Metals -- RMC-Troutdale

# LOCATION West Side of Site Along Sundial Road

ELEVATION \_\_\_

# DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING NETHOD AND EQUIPMENT Cable Tool: 10"ID Steel Casing to 8.5 It, 8"ID-200

WATER	LEVEL	S			START	5-17-1	86 LOGGER K. Gehweiler
xF		SAMPLE		STANDARD	SOIL DESCRIPTION		COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-					SAND, (SW), as above, coarser gravel, angular to subrounded.		Driller reports sand heaving into casing.
-						-	·
185.0					<u>SAND</u> , (SW), as above.	_	185 feet bgs water sample:
-			•			1 1 1	T=20 degrees C pH=7,39 cond=880 - F-=0.15
1 <b>90.0</b> - -					SAND, (SW), as above except increasing percentage of fine to coarse gravel, subangular to rounded (1/4" - 4" diameter), evidence of cementing, some wood fragments.		Driller reports sand heaving into casing.
0.391					SAND, (Sw), as above.		195 teet bgs water sample: T≠19 degrees C pH⇒7.82 cond=520 F-=0.14
_ _						1	
200.0-			1		SAND, (SW), as above.	-	200 feet bgs water sample:
-					Bottom of hole at 200 feet.	-	T=14 degrees C pH=7.7 cond=580 - F-=0.20 -
-							-
205.0						_	-
-					· · ·		
. ]						-	
	PROJECT	NUMBER	BORING NUMBER				
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СКМ НИЦ	107493.0	8.02	NW12-184	SHEET 1 OF 1			
			WELL COMPLETIC	ON LOG			
ROJECT Reynolds Netals RMC	Troutdale		LOCATION West Side	of Site Along Sundial Road			
	Cable Tool IOND St	LLING CONTRA	CTOR Tacoma Pump & Drilling C	0			
IRILLING NETHOD AND EQUIPMENT		er 5-17-98	Entrey 5-21-80	LOCKER K. Gehweller			
	51/	A)					
0 GROUND SURFACE	Concrete		ctive Sleel Cesing				
30	۵		6" D Prote				
(FEET) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Bentanlte Slurry Seal		2" dameter Schedule 80 flush threaded PVC Casing				
HEPTH 150 150 150 171 171 171 171 171 171 171 171 171 17	Centralizer						
150	Size 0 Fine 10x20 Send See Colorado 1			•			
190	Cement A Bentante > Graut		1 foot flush- threaded Scheddie 80 PVC sump	See Boring Log For Drilling Details			



PROJECT NUMBER 107493.L1.02

WELL NUMBER	
MW15	

SHEET I OF I

LOGGER Ivan Gall

### MONITORING WELL GEOLOGIC AND CONSTRUCTION LOG

PROJECT Reynolds Aluminum Company - Troutdale, OR

### LOCATION Fairview Farms

DRILLING CONTRACTOR Geo-Tech Explorations 22.75 MEASURING POINT ELEV (NGVD) \_

DRILLING NETHOD AND EQUIPMENT HSA - Mobile Drill 8-59, 8-1/4" ID Auger

WATER LEVEL ELEV/DATE .

START 7/13/85 FINISH 7/13/95 STANDARD PENETRATION TEST SAMPLE SOIL DESCRIPTION WELL COMPLETION DIAGRAM 3Ē USCS SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, DEPTH BEL RECOVERY FEET TYPE AND NÜMBER RESULTS INTERVAL 8"-8"-8" MINERALOGY (Ň) Concret Silty Loam, Med. brown, dry, firm, grassroots Comments: MW15-0000-0\* casing-2.5 Silt w/Sand, (ML), Lt. oange tan, dry, firm, orange mottling, sand ~15%, y. fine grained lacking 4-2-3 (9) 1.2 t of 2-inch dlameter, 40 flush-threaded PVC casing 4.0 Comments: NWI5-0025-0\* steel 5.0 <u>Silt.</u> (ML), orange tan, damp, v. firm, orange mottling, 5% v. fine sand Comments: MW15-0050-0\* 5.0 Bentonite pellet seai 3/4-inch Enviroplug fēr 1-2-3 (日) 1.3 dlamet 6.5 ML 8-In. 7.5 <u>Silt</u>, (ML), as above, Some carbon frags, worm burrows contain water, feet Sch. 2-1-2 1.5 (5) ß damp 9.0 10.0 10.0 Silt, (ML), as above, Wet in worm 2-2-3 (7) burrows 1.5 11.5 12.5 Silt, (ML)as above, Wet, to 13 ft. sharp contact with sand w/ silt, SP-SM, gray-green, firm, wet, 15% silt, v. fine sand !-3-2 (8) 1.5 14.0 SP flush-threaded ch slot size) 15.0 15.0 Silt. (ML), tan w/orange mottling, 20-40 damp, v. firm, to 18.2 it. silt w/sand, ML, gray-green, wet, firm, ~10% v. 2-3-4 1.5 ML . 18.5 tine sand sand 11111111111 . Sch 40, flus (0.010 Inch 3 17.5 Sand w/Silt, (SP-SM), gray-green, wet, loose, alternating silt-rich Colorado silica 2-2-3 ł.5 SP (7) layers, sand fine-grained, silt slightly 19.0 plastic Ē -Inch diameter, PVC screen Comments: Driller Reports Heaving 20.0 20.0 Silt w/Sand, (ML), gray-green, damp, v. firm, ~10% - 15% v. filme sand (to 21.1 ft.) - Sharp contact with sand w/slit, (SP-SM), gray-green, wet, loose, 20% silt ML 2~2-3 1.5 (7) 21.5 SP 22.5 2 SILL (ML), OK gray, wet, v. firm, variable grain size and moisture t 2-2-4 (8) 1.5 content 24.0 ML 25.0 25.0 Silt, (ML), as above . 4-7-11 (22) \* = Soil Sample 28.5

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# PROJECT NUNBER

BORING NUMBER

SHEET I OF 4

### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

LOCATION West Side of Site Along Sundial Road

ELEVATION \_

## DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING NETHOD AND EQUIPMENT Cable Tool; Drilling 8-Inch I.D. Steel Casing

WATER	LEVEL	S			START 9-3-90	FINISH9-5-90	LOGGER Ivan Gall
= F		SAMPLE		STANDARD	SOIL DESCRIPTION	4	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBO MOISTURE CONTENT, RELATIVE OR CONSISTENCY, SOIL STRUCT MINERALOGY	L, COLOR, DENSITY URE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
5.0 - - - - - - - - - - - - - - - - - -	10.0		1.5	1-1-2 {3)	O-I feet: Crushed basalt pad SILI, (ML), light olive gray with mottling, damp, very solt, trace and mica.	orange fine sand	Driller adds 10 gallons of water for balling. Casing advancing very easily.
 16.0  							Casing/Drilling very easy, driller adds 5 gallons of water. Percentage of sand in slit increases with depth. -
20.0 - - 25.0	21.5	-	1.2	4-4-8 (10)	SAND with SILT, (SW-SM), light wet, loose, approximately 15 per sand fine to medium grained.	olive gray, cent silt, - -	20 feet bgs water sample: T=18 degrees C pH=8.42 cond=180 F-=1.8, Eh=-312 Water level in 8 inch casing recovers to approximately 10 feet bgs in 5 minutes. Driller reports good permeability in formation.
-	27.0 28.5		1.2	13-14-19 (33)	SAND. (SW), grayish olive green wet, medium dense, fine to mediu trace of silt and mica, with silt-r iaminae i-2 inches thick.	(5yr 3/2), m grained, ich	-

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PROJECT NUNBER 107483.08.02

BORING NUNBER NW15-088

#### SHEET 2 OF 4

### SOIL BORING LOG

## PROJECT Reynolds Metals -- RMC-Troutdale

## LOCATION West Side of Site Along Sundial Road

ELEVATION .

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING NETHOD AND EQUIPMENT Cable Tool; Drilling B-Inch I.D. Steel Casing

WATE	R LEVEL	S				START	9-3-98		FINISH	9-5-9	B LOGGER Ivan Gall
×F		SAMPLE		STANDARD			SOIL DE	SCRIPTION	N ·		COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8' (N)	SOIL N MOISTU OR CON MINER/	AME, U URE CO ISISTE NLOGY	USCS GRO ONTENT, I ENCY, SO	UP SYMBO RELATIVE IL STRUCT	L, COLOR, DENSITY URE,		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
											Driller open hole 10 feet. Driller reports no heaving sand in casing.
	- - - -							•		-	1
<b>35</b> 0	-									-	1
-	38.0			10-7-10	SAND.	(SW)	, nedium d	lark gray	(N4), wet,	-	• 38 feet bgs water sample:
- - 0.0	38.5		1.3	(17)	grains	and r	nica, trac	of wood	1ragments		T=18 degrees C pH=8.87 cond=230 - F-=0.70, Eh=-307 -
•										-	
-											
										-	
-									•	-	-
<b>50.0</b>	51.0				SAND. dense.	(SW),	as above	except m	edium		Driller reports to sand heaving into
-	52.5		. 1.1	20-19-23 (42)						-	casing.
- 550						*					· _
-	80.0				•			·		-	
	80.0										

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PROJECT NUNBER 107493.08.02 BORING NUMBER

SHEET 3 OF 4

### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

### \_LOCATION West Side of Site Along Sundial Road

ELEVATION \_

## DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

### DRILLING NETHOD AND EQUIPMENT Cable Toot, Drilling 8-inch LO. Steel Casing

START 8-3-80 FINISH 8-5-98 LOGGER Ivan Gall WATER LEVELS . STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION COMMENTS SE SE SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY oepth bel surface ( RECOVERY FEET TYPE AND NUMBER INTERVAL DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, 8'-8'-8' TESTS AND INSTRUMENTATION (N) 80.0 9-4-3 (7) SAND, (SW), grayish olive green (5 yr 3/2), wet, loose, tine to medium grained, approximately 5% slit, trace wood 1.0 Driller reports 10 feet sand heaved into casing. 61.5 80 feet bgs water sample: fragments. T=18 degrees C pH=8.59 cond=250 F-=0.41, Eh=-285 85.0 70.0 70.0 SAND. (SW), medium dark gray (N4), wet, dense, fine to medium grained, trace red grains and mica, some siltler laminae (to 70 feet bgs water sample: 38-50-42 1.3 T=15.5 degrees C pH=7.18 cond=220 F-=0.42, Eh=-283 (82) 71.5 I-inch thick). Driller adds 15 gallons of water to casing. π0 80.0 50.0 SAND, (SW), as above, except loose, trace of wood fragments (to 2-Inch legnth), no 80 feet bgs water sample: 5-8-10 0.7 T=14.5 degrees C pH=8.98 cond=210 F-=0.38, Eh=-113 (18) silt. 81.5 Driller adds 20 gallons of water to casing. 65.0

1.7.1 1					PROJECT NUMBER	BORING N NW15-088	UNBER SHEET 4 OF 4
			- Tuli - su - s		SO	IL BOR	ING LOG
OJEC OJEC	T Rey	nolds Me	etals	- RMC-Troutdale	DRILLING CONTRACTOR	na Pump & Dr	t Side of Site Along Sundial Road Iling Co.
ILLIN TER I	ig net Level:	HOD AN 5	o Egui	PNENT Cable To	pot Orilling 8-inch I.D. Steel Casing START <u>9-3-98</u> F	NISH	BLOGGER Ivan Gall
F		SAMPLE			SOIL DESCRIPTION		COMMENTS
ACE (F	RVAL	AND	VERY I	TEST RESULTS	SOIL NAME, USCS GROUP SYNBOL, C MOISTURE CONTENT, RELATIVE DEN OR CONSISTENCY SOIL STRUCTURE	OLOR, ISITY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS,
SUR	INTE	T Y PE NUME		(N)	MINERALOGY	· .	TESTS AND INSTRUMENTATION
4	82.0		•				•
+	02.0		1.5	8-23-28	SAND, (SW), as above, except no s wood tragments.	lit or –	92 feet bgs water sample:
]	<b>9</b> 3.5			(51)	•		1×13 degrees C pH=8.82 cond=175 F-=0.41, Eh=-88
<b>b</b> -							
-						-	
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CHM HILL	PROJECT	NUNBER 6.02	BORING NUMBER	SHEET I OF 1
		W	ELL COMPLETIO	DN LOG
PROJECT <u>Reynolds Netals R</u> ELEVATION	INC-Troutdale	LLING CONTRACTO	LOCATION West Side ( R Tacoma Pump & Drilling Co	of Site Along Sundial Road o.
DRILLING NETHOD AND EQUIPH	ENT Cable Tool; Drilling 6	-inch I.O. Steel Ca	sing	
WATER LEVELS	STA	RT <u>9-23-98</u>	FINISH 9-23-98	LOGGER Ivan Gall
0 GROUND SURFACE				
	Expanding Locki		D Protective Stael C	
20	Centralizer		μ δο	
- 30 -	ury Seal	AD flash threaded	Dulsi	
EEE1)	Bentonite Su	A A A A A A A A A A A A A A A A A A A	PVC Ca	
DEPTH - 0EPTH 				
- 60 - -			with d	
70 — - -	20X40 Fine Send		2" diameter Sch Prepeck Screen (0.010 hch slot) 20X40 Silica San	
- 80 - -	kentonite urry K0X20 ∳▲ Coloredo Silica		I foot frush threaded Schedule sump	
90				See Boring Log For Drilling Details

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PROJECT NUMBER 107493.08.02

BORING NUMBER-NW15~175

SHEET 1 OF 7

### SOIL BORING LOG

## PROJECT \_\_\_\_\_\_ Reynolds Metals -- RMC-Troutdale

## LOCATION West Side of Site Along Sundial Road

ELEVATION ....

## DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

## DRILLING METHOD AND EQUIPMENT Cable Tool

WATER	R LEVEL	S <sup>*</sup>			STARTFINISH	-98 LOGGER K. Gehweller
₹F		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET.	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-					0-0.5 leet III, <u>GRAYEL</u> , (GW), gray, dry, loose, coarse, angular to subrounded.	
					0.5-2 <u>SILTY SANDY GRAVEL</u> , (GM), brown, damp, loose.	-
- 6.0					SILT with SAND, (NH), brown, damp, soft.	
-					-	-
-			-		-	
10.0 -					<u>SILT with SAND,</u> (MH), brown, damp, soft,	
-					-	-
					- 	-
-					-	-
-	20.0				-	· · · · · · ·
20.0	21.5		1.5	4-4-5 (9)	<u>SILT with SAND</u> , (MH), as above except gray. -	20 teet bgs water sample: T≠13 degrees C pH=8.3 cond=212 - F-=0.23.
-					-	
- 25.0 -	-				- <u>SILT with SAND</u> , (MH), as above, higher percentage of sand. -	- - - -
-					· · · ·	- - -



ELEVATION .

PROJECT	NUNBER
107 403 DF	102

BORING NUMBER

SHEET 2 OF 7

### SOIL BORING LOG

LOCATION West Side of Site Along Sundial Road

### PROJECT Reynolds Metals -- RMC-Troutdale

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

### DRILLING METHOD AND EQUIPMENT Cable Tool

START 5-22-98 FINISH 5-30-98 LOGGER K. Gehweller WATER LEVELS STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION COMMENTS 鸵 DEPTH BEL SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, RECOVERY FEET TYPE AND NUMBER INTERVAL DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION 8" -8" -8" (N) MINERALOGY SAND, (SW), dark gray, wet, loose to medium dense, line to medium grained, no silt, some red sand grains. 30 feet bgs water sample: T=14 degrees C pH=8.35 cond=212 F-=0.18. 35.0 35.0 SAND, (SW), as above. 35 feet bgs water sample: 4-10-50/4" 1.5 T=15 degrees C pH=8.9 cond=500 F-=0.31. 38.5 40.0 SAND, (SW), as above slightly coarser grained. 45.0 SAND, (SW), as above. 45 feet bgs water sample: T=18 degrees C pH=8.8 cond=810 F-=0.27 60.0 SAND, (SW), as above. 65.0 SAND, (SW), as above. 55 feet bgs water sample: T=15 degrees C pH=8.5 cond=520 F-=0.29.



PROJECT NUNBER

BORING NUMBER

SHEET 3 OF 7

### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

LOCATION West Side of Site Along Sundial Road

ELEVATION .

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

### DRULLING NETHOD AND EQUIPMENT Cable Tool

FINISH 5-30-98 LOGGER K. Gehweller START 5-22-98 WATER LEVELS . STANDARD PENETRATION TEST SOIL DESCRIPTION COMMENTS SAMPLE SĘ SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, DEPTH BEL SURFACE ( RECOVERY FEET TYPE AND NUMBER RESULTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, INTERVAL 6' -6' -6' TESTS AND INSTRUMENTATION MINERALOGY (N) SANLI, (SW), as above. 650 SAND, (SW), as above. 65 feet bgs water sample: T=14 degrees C pH=8.5 cond=500 F-=0.34. 70.0 SAND, (SW), as above. 75.0 SAND. (SW), as above. 0.08 Sheen and some brown toam observed in bailed water from 75-85 interval. Appears similar to sheen and toam noted-during drilling of NW12-D. SAND, (SW), as above except line to coarse grained sand. 86.0 SAND, (SW), as above. 85 feet bgs water sample: T=18 degrees C pH=8.5 cond=580 F-=0.33.



PROJECT NUNBER 107493.08.02

BORING NUMBER N¥15-175

SHEET 4 OF 7

### SOIL BORING LOG

LOCATION West Skle of Site Along Sundial Road

PROJECT \_\_\_\_\_\_ Reynolds Metals -- RMC-Troutdale

ELEVATION \_

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

## DRILLING NETHOD AND EQUIPMENT Cable Tool

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WATER	LEVEL	S			STARTFINISH	-98 LOGGER K. Gehweiler
TE		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	-8" -8" -8" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
· -		-			SAND, (SW), as above.	-
-			·		- -	
950 -	85.0 88.5		1.5	18-50-50 (100)	SAND, (SW), as above except well-graded — sand with fine to coarse, rounded to angular gravel.	
_					· · · ·	97 leet bgs water sample: T=18 degrees C pH=8.8 cond=810 F-=0.31. Soll Sample at 97 leet was sand heaved _ into casing.
100.0  -					SAND, (SW), as above.	
-  106.0 					SAND, (SW), as above except less gravel and a #ttle finer grained.	- 105 feet bgs water sample: T=14 degrees C pH=8.8 cond=800 F-=0.44 -
- 110.0 -					-	
- 115.0 -	115.0 118.5		1.5	25-80-50/3"	SAND, (SW), gray, wet, very dense, fine to coarse grained with trace fine rounded to subangular gravel.	- II5 feet bgs water sample: T=17.5 degrees C pH=8.5 cond=800 F-=0.41 Solt: PID=1.5 ppm, FID=35 ppm - Packagemd=0.2-0.8
-					-	



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PROJECT NUNBER 107493.08.02

BORING NUMBER MW15-175

SHEET 5 OF 7

.

### SOIL BORING LOG

## PROJECT Reynolds Metals --- RMC-Troutdale

## LOCATION West Side of Site Along Sundial Road

ELEVATION \_

## DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

## DRILLING NETHOD AND EQUIPMENT Cable Tool

WATE	ATER LEVELS				START 5-22-98FINISH 5-	30-98 LOGGER K. Gehweller
3F		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8'	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
					SAND, (SW), as above.	
125.0					<u>SAND,</u> (SW), as above except loose to medium dense.	- - - - - - - - - - - - - -
- - 130.0					SAND. (SW), as above.	F-=0.32.
- - 135.0 — -	135.0 138.5		1.2	3-8-15 (24)	SAND, (SW), as above with trace of wood fragments/plant material.	
-  140.0					SAND, (SW), as above.	Background=0.02 ppm -
- 1450 - - - -			-		<u>SAND</u> , (SW), as above.	- 145 feet bgs water sample: - T=15 degrees C pH=6.58 cond=480 F-=0.35. -



ELEVATION .

PROJECT NUMBER 107493.D8.02 BORING NUMBER

SHEET 8 OF 7

### SOIL BORING LOG

## PROJECT Reynolds Metals -- RMC-Troutdale

## LOCATION West Side of Site Along Sundial Road

DRILLING CONTRACTOR Tacona Pump & Drilling Co.

## DRILLING NETHOD AND EQUIPMENT Cable Tool

WATE	R LEVEL	S			START 5-22-98FINISH 5-30	-98 LOGGER K. Gehweller
жF		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
					SAND. (SW), as above except no plant material.	
<b>155.0</b> -	155.0		1.2	· 3-7-25 (32)	SAND, (SW), gray, wet, medium dense, line to coarse grained sand, some line 1/4 Inch gravel subrounded, no plant material.	155 teet bgs water sample: T=15.8 degrees C pH=8.85 cond=318 F==0.34.
						Sol: PID=0./ ppm FID=200 max Background: PID=0 FID=t 
<b>160.0</b>					SAND, (SW), as above.	-
-	- - -				-	
					<u>SAND</u> , (SW), as above	185 feet bgs water sample: T=17.2 degrees C pH=0.8 cond≠410 F-≠0.30. PID/FID detects O/5 ppm in borehole at _ 185 feet bgs.
- 170.0 						
-	172.0 173.5		1.0	18-20-35 (55)	SAND, (SW), as above except medium - dense to dense.	173 feet bgs water sample:
- 175.0					-	T≈I4.8 degrees C pH≈7.04 cond=440 - F~≈0.32 PID/FID 0/80
-						
_					-	



PROJECT NUNBER 107493.DB.02 BORING NUMBER

SHEET 7 OF 7

### SOIL BORING LOG

### PROJECT Reynolds Metals -- RMC-Troutdale

### LOCATION West Side of Site Along Sundial Road

ELEVATION

### DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

### DRILLING NETHOD AND EQUIPMENT Cable Tool

START 5-22-98 FINISH 5-30-88 LOGGER K. Gehweller WATER LEVELS STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION COMMENTS DEPTH BELON SURFACE (FT) SOIL NAME, USCS GROUP SYNBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY TYPE AND NUMBER RECOVERY DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, INTERVAL 8' -8' -6' TESTS AND INSTRUMENTATION (N) SAND; (SW), as above. 181 feet bgs water sample: T=14.4 degrees C pH=8.55 cond=550 F-=0.32 0.78 SAND, (SW), as above. 190.0 SAND. (SW), as above. 191.0 191 feet bgs water sample: 3-12-40 (52) 1.5 T=20.3 degrees C pH=7.29 cond=330 192.5 F-=0.34. 0.701 SAND, (SW), as above. 200.0 SAND, (SW), as above. 200 feet bgs water sample: Bottom of hole at 200 feet bgs. T=13 degrees C pH=6.9 cond=382 F-=0.28. 205.0





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PROJECT NUNBER 107 493.NI.02

WELL NUMBER MW20-024

SHEET I OF I

### MONITORING WELL GEOLOGIC AND CONSTRUCTION LOG

## PROJECT Reynolds Aluminum Company - Troutdale, OR

### LOCATION Company Lake

\_\_ DRILLING CONTRACTOR \_ Geo-Tech Explorations 

DRILLING NETHOD AND EQUIPNENT 8-1/4" ID HSA

WATE	ATER LEVEL ELEV/DATE				START 9/1/95	-FINISH	9/1/9	1/95 LOGGER Ivan Gall	
TEF		SAMPLE		STANDARD	SOIL DESCRIPTION			WELL COMPLETION DIAGRAM	Ч
DEPTH BELO	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS 0" -0" -0" (N)	SOIL NAME, USCS GROUP SYMBO MOISTURE CONTENT, RELATIVE OR CONSISTENCY, SOIL STRUCT MINERALOGY	UL, COLOR, DENSITY URE,	USCS DESCRIPTIO		
	-				0-0.5 ft. gravel for road 0.5 ft. silty loam w/plant roots		-	Dincrete Dincrete	
	2.5		0.5	2-3-3 (8)	Silt, (ML), Brownish gray; (5 yr to lt. brownish-gray (5 yr 8/1) damp, firm	4/1)	-		
5.0 -	5.0				Silt, (ML), as above, dusky		ML	steel lo	
	0.5		0.5	3-4-4 (II)	yellawish-brown (10 yr 2/2)	. •	-	lameter	-
	9.0		1.0	2-2-4 (8)	<u>Silt w/Sand</u> , (ML), Brownish-gra yr 4/1), Moist, 11rm, 15% very ting sand	iy, (5		B-In. d Intonite Intonite oarseal oars	•
10.0 -	10.0		0.8	3-4-5	Sand, (SP), Brownish-gray (5 ) 4/1) damp, loose, fine-medium grained	nî			allzer 
	12.5				Sand. (SP), As above, medium to	)	_		el Centr
-	14.0		0.8	4-3-8 (13)	coarse grained, damp		-		ess Ster
15.0 ~	15.0		0.7	4-4-8 {14}	<u>Sand</u> , (SP), As above, damp				
	17.5			7-8-5	Sand, (SP), As above, wet	-	SP -	sh-size	-
	19.0 20.0		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(18)			-	nd 20-1	1
200 -	21.5		1.2	1-4-7 (12)	Sand, (SP), As above, wet		-	silica sa itritti ster, Sch	- - -
-	22.5				No Sample			alorado VC scr	<b>۔</b> ل
	24.0						-	2-Inc	4
25.0	28.5			2-2-3 (7)	<u>Sand</u> , (SP), As above, wet				
								2-Inch diam. Sch. 40 PVC	stainless steel- Centralizer



PROJECT NUNBER 107493.08.02

BORING NUMBER NW21-083

SHEET I OF 3

### SOIL BORING LOG

## PROJECT Reynolds Metals -- RMC-Troutdale

### LOCATION Northeast Corner of NLF

ELEVATION \_

## DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

## DRILLING METHOD AND EQUIPMENT Cable Tool; Drilling 6-Inch ID Steel Casing

WATE	R LEVE	LEVELS START				LOGGER T. Gehweller
зF		SAMPLE	=	STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS 8" -8" -8" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
					0-1,5 feet: Crushed basalt fill.	Driller adds water to bail out hole.
	-				SILI, (NL), brown, damp, firm. Hit root at 4 feet.	-
<b>6.</b> 0 -					SAND, (SW), yellow brown, moist, very loose, medium to fine grained, no silt.	
	-					-
	10.0				· · · · · · · · · · · · · · · · · · ·	
- 00	11.5		1.5	4-4-8 (10)	SAND, (SW), as above, except wet, loose -	. 1
	 -				-	
16.0 -					SAND. (SW) as above except fine to	Casing advancing easily; add water to ball hole.
					coarse grained.	
-					-	
20.0 -						
-						
-						
25.0	25.0				SAND. (SW), as above except medium to	25 teet bas water sample:
-	28.5		1.5	4-4-8 (12)	coarse grained.	T=18.5 degrees C pH=8.88 cond=348 - F-=8.8
-						
-				-	+	-

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PROJECT	NUMBER
107493.D	8.02

BORING NUMBER MW21-083

SHEET 2 OF 3

### SOIL BORING LOG

## PROJECT Reynolds Metals -- RMC-Troutdale

## LOCATION Northeast Corner of NLF

ELEVATION \_

DRILLING CONTRACTOR Taconta Pump & Drilling Co.

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DRILLING NETHOD AND EQUIPMENT Cable Toot, Drilling 8-Inch ID Steel Casing

WATER LEVELS START 8-30-98				START 9-30-98 FINISH 10-1-	88 LOGGER T. Gehweller	
₹F		SAMPLI	E	STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8" -8" -8" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
					SAND, (SW), as above, except line to medium grained.	
	1					-
	<b>1</b> .					-
	1				-	-
36.0	1				· · · · · ·	_
	1				-	-
	1				-	
· ·	1					-
	40.0			•	-	-
<b>40.0</b>	41.5		1.5	4-12-12 (24)	SAND, (SW), gray brown, wet, medium . dense, fine to medium grained.	
-					- · ·	·
-						-
- 1	1				-	-
<b>45.0</b>					SAND, (SW), as above, except trace coarse grains, mica flakes, and red grains of sand.	
-					-	·
-					-	-
-					-	-
50.0	50.0				SAND. (SW), as above except trace wood	50 feet bas water sample;
-	51.5		0.8	2-3-4 (7)	fragments, very loose.	T=14.0 degrees C pH=8.4 cond=338 F-=0.94
					· +	1
-					·	
					. 4	
65,0 -					SAND, (SW), as above except loose, with 5	+
-					percent Sk.	+
-					+	+
-					· -	+
-					-	· •
		- 1	1			



PROJECT NUNBER 107493.D8.02

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BORING NUNBER MW21-083

SHEET 3 OF 3

### SOIL BORING LOG

## PROJECT Reynolds Metals --- RNC-Troutdale

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## LOCATION Northeast Corner of NLF

ELEVATION .....

## DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

## DRILLING METHOD AND EQUIPMENT Cable Tool; Drilling 8-Inch IB Steel Casing

WATER	LEVEL	s			START	FINISH 10-1-1	98 LOGGER T. Gehweller
<b>x</b> F		SAMPLE		STANDARD	SOIL DESCRIPTION	I	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8" -8" -8" (N)	SOIL NAME, USCS GROUP SYMBOL MOISTURE CONTENT, RELATIVE OR CONSISTENCY, SOIL-STRUCT MINERALOGY	., COLOR, DENSITY URE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
· ·					SANII, (SW), as above.	-	
-	85.0					-	-
86.0 -	66.5		0.8	3–3–3 (8)	<u>SAND</u> , (SW), as above except 2 wood fragments. Total depth equals 85 feet.	0 percent – -	85 teet bgs water sample: T=14.3 degrees C pH=7.42 cond=400 F-=0.34
-			-				
70.0 -						-	
  75.0						-	- - -
-					· · ·	-	- - -
0.08  -							
- 86.0					- -		
-						-	-





PROJECT NUMBER 107493.08.02

BORING NUMBER MW21-178

SHEET I OF 13

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### SOIL BORING LOG

## PROJECT \_ Reynolds Metais -- RNC-Troutdale

## LOCATION Northeast Corner of NLF

ELEVATION \_

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING METHOD AND EQUIPMENT Cable Tool Air Rotary;

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WATER	TER LEVELS				START8	FINISH	LOGGER I. Gall
xF		SAMPLE			SOIL DESCRIPTIO	N	COMMENTS
Depth Belo Surface (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS B' -B' -B' (N)	SOIL NAME, USCS GROUP SYMBO MOISTURE CONTENT, RELATIVE OR CONSISTENCY, SOIL STRUC MINERALOGY	DL, COLOR, DENSITY TURE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-					0-1.5 teet: Crushed basalt till.		Driver adds approximately 10 gallons of water.
-							
<b>6.</b> 0	5.0		0.9	1-3-7 (10)	SILI. (NL), dark yellowish brov 4/2), damp, 1irm, orange, mottili	vn (lOyr – ng;	Drilled open hale 5–12 teet bas.
_	0.5 7.5				Sharp contact at 8 feet bgs w (SW), moderate yellow brown ( damp, loose, fine-medium-grain rounded.	ith <u>SAND</u> . 10yr 5/4). 1ed, poorly	-
	8.5		1.4	8-8-8 (18)	SAND. (SW), dark yellow brown wet, loose, fine-medium- graine rounded.	(IOyr 4/2), ed, poorly	
10.0 -	10.0		1.0	8-7-8 (15)	SAND, (SW), brownish gray (Sy loose, fine-coarse- grained, tr than i percent) wood fragment:	rr 4/1), wet, — 'ace (less s	Driller reports increased permeability. 12 feet bgs water sample:
-					SAND, (SW), as above.		T=1L8 degrees C pH≃8.02 cond=350 _ F-=5.30
150	15.0			· · ·	SAND, (SW), as above, except	trace of -	IO-Inch casing total depth = 18 feet
	18.5		0.8	(9)	wood fragments.	-	bgs.
						-	
20.0	20.0				SAND. (SW), as above.		Driller adds 10 gallons of water.
-	21.5		1.0	1-1-3 (4)		_	Casing advances easily.
	24.5					-	
<b>25.0</b>	28.0		1.2	5-9-10 (19)	<u>SAND</u> , (SW), as above, except medium-coarse-grained, trace i-inch diameter)	gravel (to	
-				-		-	29 feet bgs water sample: T=17 degrees C pH=8.31 cond=550 F==2.81. Driker reports 10 feet of heaving sand in
							casino.

СЮМ	HILL				PROJECT NUNBER 107493.D8.02	Boring Numbi MW21-178	ER SHEET 2	0F 13		
					BORIN	G LOG				
PROJEC	PROJECT Reynolds Metals RMC-Troutdale LOCATION Northeast Corner of NLF									
ELEVA	TION _				DRILLING CONTRACTOR Tacoma	Pump & Drilling	] Co.			
DRILLI	NG NET	HOD AN	D EQUI	PNENT Cable I	COLAIT HOTATY:		Langen I G	all		
WAIER	LEVEL	SAMPLE		STANDARD	SOIL DESCRIPTION	<u>sn</u>				
EPTH BELON URFACE (FT	ITERVAL	YPE AND UMBER	ECOVERY	PENETRATION TEST RESULTS 8'-8'-8'	SOIL NAME, USCS GROUP SYMBOL, COLO MOISTURE CONTENT, RELATIVE DENSI OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DR, DI TY DI TI	EPTH OF CASING, DRI RILLING FLUID LOSS, ESTS AND INSTRUME	LLING RATE,		
		νz	<u> </u>		SAND, (SW), as above, except tine-medium-graked.		Smail silt fragments, sa straker.	mple from _		
- 360	35.0 38.5		1.4	0-8-10 (18)	<u>SAND</u> . (SW), dark gray (N3), wet, loos line-medium grained, poorly rounded.	e,  	Jrilier reports heaving Jilt fragments in baller Jasliy.	sand in casing - casing advances		
- - - - - -					SAND, (SW), as above, except trace o wood fragments.	1 -	)rilier reports heaving : eet).	sand in casing (12		
- 45.0 - -	48.0				SAND, (SW), as above, except trace o wood fragments and gravel.	1 - 4 - T F - S	5 feet bgs water samp =11.2 degrees C pH=8. -=0.58. ample from strainer	ole:		
50.0	49.5		1.4	11-11-12 (23)	SAND. (SW), as above.	- Di - a(	rliler adds 15 gailons o dvances easily.	1 water, casing - - - -		
55.0 	54.0 58.0		1.2	3-4-8-4 (10)	<u>SAND</u> , (SW), dark gray (N3), wet, loose fine-medium-grained, poorly rounded, y 5 percent silt.	dth				
<b>I</b> .							riller reports 5 feet he asing. 3 feet bgs water samp pH=8.45 cond=850 F-	aving sand in le: T=12 degrees -=0.28.		



PROJECT NUMBER 107493.08.02

BORING NUMBER NW21-178

SHEET 3 OF 13

### SOIL BORING LOG

LOCATION Northeast Corner of NLF

PROJECT Reynolds Metals -- RMC-Troutdale ELEVATION \_\_\_\_

## DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING NETHOD AND EQUIPMENT Cable Tool Air Rotary;

WATER	ATER LEVELS				START 5-8-98	FINISH	LOGGER I. Gall
жF		SAMPLE	-	STANDARD	SOIL DESCRIPTIO	N	COMMENTS
DEPTH BELO	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBO MOISTURE CONTENT, RELATIVE OR CONSISTENCY, SOIL STRUCT MINERALOGY	DL, COLOR, DENSITY FURE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-				-	SAND, (SW), as above.	-	Sample from strainer.
							-
-	85.0						
85.0 -					<u>SAND</u> , (SW), as above.	-	
-	87.0		1.3	2-4-4-8 (12)			1 . 1
-	07.0				GRAVEL with SAND, (GW), dark	gray (N3),	
-					vet, loose, moderately well rout I-inch diameter. Approximately	20 percent	
-			•		less than 20 percent at 69 fee	t bgs.	basalt fragments, drilling and casing
70.0						-	gravel/sand heaving into casing.
-							70 feet bgs water sample:
-							T=12.9 degrees C pH=8.66 cond=370 - F-=0.29
-							Begin air rotary drilling at 70 feet bos on 5–13–86. Soli sample collected with strainer.
75.0					GRAVEL with SAND, (GW), as at	oove	Very permeable (Hole producing greater than 50 percent gpm.
-							
-							1
-							1 1
							4 . 1
<b>50.0</b> —					GRAVEL, (GW), dark gray (N3),	wet	80 feet bgs water sample:
-					basalt.	, prmanny	T=14.5 degrees C pH=8.85 cond=350 F-=0.28.
-							4 · 4
-		·					4 4
-							4 4
86.0 —						-	4
_							
_							4 . 4
_							] ]
							]
							· 1



PROJECT NUNBER 107493.08.02

BORING NUMBER NW21-178

SHEET 4 OF 13

### SOIL BORING LOG

PROJECT \_\_\_\_\_\_ Reynolds Metals -- RMC-Troutdale

### LOCATION Northeast Corner of NLF

ELEVATION \_

DRULLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING NETHOD AND EQUIPMENT Cable Tool Air Rotary;

WATER	LEVEL	S			STARTFINISH	LOGGER I. Gall
TF		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS 0"-0"-0" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-					GRAVEL, (GW), as above. <u>GRAVEL</u> , (GW), dark gray (N3) with olive gray (5yr 3/2) cement, wet, dense, gravel moderately well-rounded, primarily basalt partially cemented.	Hole producing greater than 50 gpm, no evidence of cement in cuttlings. - Lower permeability (approximately 10 - gpm).
- 950 -	-				<u>GRAVEL,</u> (GW), grayish black (N2), wet very dense.	
- - 0.001					· ·	90 percent crushed basalt, likely from cobbles, hole producing less than 1 gpm, - no evidence of cement. - 100 feet bgs water sample:
-					· · · ·	- T=18.2 degrees C pH=7.09 cond=230 F-=0.52 
106.0 		-			- GRAVEL, (GW), dark gray (N3) with olive gray (Syr 3/2) cement, wet, dense, gravel moderately well rounded, partially cemented.	Permeability increases slightly (approximately 2 gpm), cement evident on gravel, drilling rate increases.
- 110.0					- -	
-						
11650					Υ	Permeablity increases (approximately 5- gpm).
				-	·	] ]



PROJECT NUMBER

BORING NUNBER NW21-178

#### SHEET 5 OF 13

### SOIL BORING LOG

### PROJECT Reynolds Metals -- RMC-Troutdale

### LOCATION Northeast Corner of NLF

ELEVATION .

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRULLING NETHOD AND EQUIPMENT Cable Tool Air Rotary;

START 5-8-88 LOGGER I. Gall FINISH\_ WATER LEVELS STANDARD PENETRATION TEST RESULTS SOIL DESCRIPTION COMMENTS SAMPLE ₽Ē SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY DEPTH BEL RECOVERY FEET TYPE AND NUMBER DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION INTERVAL 8'-8'-8' (N) GRAVEL, (GW), as above. 120 feet bgs water sample: T=17 degrees C pH=7.08 cond=210 F-=0.38 25.0 GRAVEL, (GW), as above. 130.0 GRAVEL, (GW), as above. 55.0 GRAVEL, (GW), as above. Discharge increase to 10-15 gpm less cement evident, percentage of basalt gravel decreases. 140.0 GRAVEL. (GW), as above. 140 feet bgs water sample: T=15 degrees C pH=8.73 cond=250 F-=0.57 145.0 GRAVEL, (GW), as above.

СѣМ (	HILL				PROJECT NUNBER 107493.D8.02 BORING NUMBER NW21-178 SHEET B OF 13 SOIL BORING LOG				
PROJEC	TTON	rnolds M	etals –	- RMC-Troutdale		LOCATION Northeast Corner of NLF			
DRILLI	NG MET	HOD AN	ID EQUI	PNENT Cable T	col Air Rotary;				
WATER	LEVEL	S		·····	STARTFINI	ISH	LOGGER I. Gall	_	
3F		SAMPLE	I	STANDARD	SOIL DESCRIPTION		COMMENTS	•	
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	TEST RESULTS 8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLO NOISTURE CONTENT, RELATIVE DENSI OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	OR, TY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION		
-					GRAVEL, (GW), as above.	_	More cement evident in cuttings		
- - -	•				SAND, (SW), dusky yellow (5yr 8/4), v loose, line-to-coarse- grained, mica llakes, 5 percent gravel.	ret, -	Driller reports sand heaving into casing, and increased permeability.	-	
<b>156.0</b>					SAND with GRAVEL, (SW), olive gray ( 3/2), wet, loose, fine to coarse-graine gravel moderately well-rounded.	(5yr ed,	-		
-						· •		1	
150.0						-	180 leet bas water sample:		
_						-	T=12.1 degrees C pH=7.22 cond=210		
_						4	F-=0.29		
-						-			
_					SAND with GRAVEL (SW) as above	-	• • •	ł	
<b>185</b> 0					SAND, (SW), light olive gray. (5yr 5/2), wet, loose, medium to very coarse grai large mica flakes, trace of gravel.	ned,	Driller reports sand heaving into casing — producing greater than 50 gpm.	1	
-						-		l	
-					÷	-	· -		
-						]			
170.0-					SAND, (SW), as above.	_	·		
-						•	-		
-				s		-	·		
4						4			
-						4			
175.0 -					SAND, (SW), as above.	_	-		
-						-	4		
-						-	· .		
-									
4						_			

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PROJECT NUNBER 107493.08.02

BORING NUMBER NW21-178

SHEET 7 OF 13

### SOIL BORING LOG

## PROJECT Reynolds Metals -- RMC-Troutdale

## LOCATION Northeast Corner of NLF

ELEVATION \_

## DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

## DRILLING NETHOD AND EQUIPMENT Cable Tool Air Rotary;

WATER	LEVEL	.s			START88	FINISH	LOGGER I. Gall		
3F		SAMPLI	Ē	STANDARD	SOIL DESCRIPT	ION	· COMMENTS		
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYN MOISTURE CONTENT, RELATIV OR CONSISTENCY, SOIL STRU MINERALOGY	BOL, COLOR, /E DENSITY CTURE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION		
					SANO. (SW), as above.		180 feet bgs water sample:		
-					SAND with GRAVEL, (SW), ligh (5yr 5/2) wet, loose, line to grained sand and gravel, rou angular gravel, large micas.	nt olive gray coarse nded to	T=12.2 degrees C pH=7.45 cond=220 F-=0.28 Driller reports sand heaving into casing producing greater than 50 gpm.		
0.381				-	<u>SAND.</u> (SW), dusky yellow (5 loose, fine to coarse grained trace of gravel, small, rounde	yr 8/4), wet, , mica flakes, d.	Driller reports sand heaving into casing producing greater than 50 gpm.		
			-	- -					
1900 —									
-					SAND, (SW), medium light gray loose, medium to coarse grain large mica flakes, trace of gr than 5 percent.	r (N8), wet, ied sand, avel less	- Orläer reports sand heaving into casing -		
-							producing greater than 50 gpm.		
<b>195.0</b> -						-	Some pieces of wood from 195 feet.		
					SAND with GRAVEL, (SW), meo gray (NB) wet, loose, fine to coarse-grained, rounded gray micas.	lium light vels, large	Driffer reports casing becoming harder to rotate		
200.0-						-	200 feet bgs water sample: —		
-						•	- T≠12.8 degrees C pH≠7.27 cond=138 - F-=0.298 -		
-									
706.0  					SILI, (ML) grayish olive green wet, very tirm, slightly plastic, sand.	1 (5yr 3/2), trace of	Formation producing no water.		
-							1 . 1		

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PROJECT NUNBER 107493.08.02

BORING NUNBER NW21-178

SHEET 8 OF 13

#### SOIL BORING LOG

### PROJECT Reynolds Metals -- RMC-Troutdale

### LOCATION Northeast Corner of NLF

ELEVATION .

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING METHOD AND EQUIPMENT Cable Tool Air Rotary;

.

START 5-8-98 LOGGER I. Gall FINISH . WATER LEVELS STANDARD PENETRATION TEST SAMPLE SOIL DESCRIPTION COMMENTS SE. DEPTH BEL SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, RECOVERY FEET TYPE AND NUMBER RESULTS INTERVAL DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS 8' -8' -8' TESTS AND INSTRUMENTATION MINERALOGY (N) SILT, (ML) as above to 215 feet bgs. Producing approximately 20 gpm. 215.0 SAND, (SW), gravish olive green (5yr 3/2), wet, loose, fine to coarse-grained, mica flakes, grading to 219 feet. Percentage of gravel increases with depth to 217 feet bgs. Gravel at 219 feet bgs. GRAVEL, (GW), dark gray (N3), wet, loose, moderately well rounded, gravel to 2-inch, Producing greater than 80 gpm. 220.0 5 percent sand. "220 feet bgs water sample: T=13 degrees C pH=7.8 cond=140 F-=0.25 225.0 GRAVEL, (GW), as above. Producing greater than 80 gpm. 230.0 GRAVEL, (GW), as above. 234 feet bgs water sample: 235.0 T=14 degrees C pH=7.70 cond=130 GRAVEL. (GW), as above. F-=0.28 Producing greater than 80 gpm.



PROJECT NUNBER 107493.08.02

BORING NUMBER NW21-178

SHEET 8 OF 13

### SOIL BORING LOG

## PROJECT Reynolds Metals -- RMC-Troutdale

## LOCATION Northeast Corner of NLF

ELEVATION .

## DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

## DRILLING NETHOD AND EQUIPMENT Cable Tool Air Rotary;

WATE	LEVE	.s			STARTB8	FINISH	LOGGER I. Gall		
жF		SAMPLE		STANDARD	SOIL DESCRIPTION		COMMENTS		
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYNBOL, ( MOISTURE CONTENT, RELATIVE DE OR CONSISTENCY, SOIL STRUCTUR MINERALOGY	COLOR. NSITY E,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION		
					GRAVEL, (GW), as above.	-	-		
						-			
					<u>GRAVEL,</u> (GW), as above.	-			
- 2400					SILT. (ML), olive gray (5yr 4/1) wi	et, firm. -	-		
-					SAND. (SW), dark greenish gray (4 wet, loose, fine-to- coarse-grain trace of gravel, wood fragments, g at 250.	5yr 4/l), ≥d, yrading -			
250.0					GRAVEL. (GW), with sand, dark gra wet, loose, gravel, poorly rounded, of wood fragments.	y (N3), trace	Producing greater than 50 gpm. –		
- - 2550 -					SAND, (SW), medium gray (N5), we fine-to-coarse-grained, mica flak trace wood fragments, 10 percent	t, loose, es, sllt.	Driller reports sand heaving into casing producing approximately 40 gpm.		
- - 280.0 -					SAND, (SW), as above, except no s	- 	280 feet total depth 5/14/98. 280 feet bgs water sample: T=15 degrees C pH=8.25 cond=130		
- - 296.0					SAND, (SW), as above.	-	Producing approximately 70 gpm, sand is heaving into casing.		
-				-		-			



PROJECT NUNBER

BORING NUMBER

SHEET 10 OF 13

### SOIL BORING LOG

### PROJECT Reynolds Metals -- RMC-Troutdale

### LOCATION Northeast Corner of NLF

ELEVATION .

DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING NETHOD AND EQUIPMENT Cable Tool Air Rotary;

LOGGER I. Gall START 5-8-98 FINISH ... WATER LEVELS . STANDARD PENETRATION TEST CONMENTS SOIL DESCRIPTION SAMPLE . SE SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY DEPTH BEL SURFACE ( TYPE AND NUMBER RECOVERY FEET RESULTS INTERVAL DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION 0'-0"-0" (N) GRAVEL, (GW), dark gray (N3), wet, very Cuttings primarily crushed basalt, driller dense, partially-cemented, moderately well-rounded, primarily basalt. reports very hard drilling, producing approximately 120 gpm. 275.0 277 feet bgs water sample: T=18.1 degrees C pH=7.72 cond=130 F-=0.21 280.0 GRAVEL, (GW), as above. Producing approximately 120 gpm, drilled open hole 280-285 ft bgs. 265.0 SAND, (SW), medium gray (N5), wet, loose, fine-to-medium-grained, mica flakes, trace wood fragments, less than I percent gravel. 290.0 Producing approximately 50 gpm, driller SAND, (SW), as above. reports sand heaving into casing. 295.0 SAND, (SW), as above. Note: Removed 4 cubic yards of sand from 280-300 feet bgs.

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#### PROJECT NUNBER 107493.08.02

BORING NUMBER NW21-178

SHEET II. OF 13

### SOIL BORING LOG

### PROJECT Reynolds Metals -- RMC-Troutdale

### LOCATION Northeast Corner of NLF

ELEVATION .

## DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

DRILLING NETHOD AND EQUIPMENT Cable Tool Air Rotary; START 5-8-88 LOGGER L Gall WATER LEVELS . FINISH . STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION COMMENTS SE. DEPTH BEL SURFACE ( TYPE AND NUMBER SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, RECOVERY FEET INTERVAL DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION 8'-8'-8' MINERALOGY (N) SAND, (SW), as above. 300 feet bgs water sample: T=18.1 degrees C pH=8.29 cond=170 F-=0.18 Driller reports sand heaving into casing producing approximately 50 gpm. 305.0 SAND, (SW), as above. 310.0 SAND, (SW), as above, except with 5 percent gravel. 315.0 SAND, (SW), as above, except with 5 percent slit. Note: Removed 4 cubic yards of sand from 300-320 feet bgs. 320.0 SAND, (SW), as above, except 10 percent 320 feet bgs water sample: gravel. T=18 degrees C pH=7.84 cond=198 F-=0.32 GRAVEL. (GW), dark gray (N3), wet, very dense, moderately well rounded, primarily basalt, 10–15 percent sand, partially Driller reports very slow drilling rate. Producing greater than 100 gpm. cemented, trace wood fragments. 325.0



PROJECT NUNBER

BORING NUMBER

SHEET 12 OF 13

### SOIL BORING LOG

### PROJECT \_ Reynolds Metals -- RNC-Troutdale

### LOCATION Northeast Corner of NLF

ELEVATION \_

DRILLING CONTRACTOR Tacoma Pump & Driling Co.

DRILLING NETHOD AND EQUIPMENT Cable Tool Air Rotary;

START 5-8-98 LOGGER I. Gall FINISH WATER LEVELS STANDARD PENETRATION TEST SAMPLE SOIL DESCRIPTION COMMENTS ₽Ë ACE TYPE AND NUMBER RECOVERY FEET RESULTS SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, INTERVAL DEPTH OF CASING, DRILLING RATE. DRILLING FLUID LOSS DEPTH 6' -8' -6' TESTS AND INSTRUMENTATION (N) MINERALOGY GRAVEL, (GW), as above. Driller reports very slow drilling rate. Producing greater than 100 gpm. 335.0 GRAVEL, (GW), as above. 340 feet total depth on 5/15/98. 340.0 340 feet bgs water sample: GRAVEL, (GW), as above. T=18.7 degrees C pH=7.81 cond=180 F-=0.28 345.0 Basalt grayish black (N2), wet, very dense, fragmented, sharp edges, small Drilling open hole producing roughly 1-2 gpm. pleces, very small amount sand grains less than 2 percent. Orliler believes sand came in from above. 350.0 Basalt, as above, except no fines present. 365.0 Basalt, as above, except with small fragments of silt stone (light olive gray (5yr 8/1) angular less than 5 percent, present for 1 foot to .5 foot. Driller noted that there was a slight quick drop after going through section which showed siltstone fragments.



PROJECT NUMBER 107493.08.02

BORING NUMBER NW21-178

SHEET 13 OF 13

### SOIL BORING LOG

### PROJECT Reynolds Metals -- RMC-Troutdale

## LOCATION Northeast Corner of NLF

ELEVATION .

## DRILLING CONTRACTOR Tacoma Pump & Drilling Co.

## DRILLING METHOD AND EQUIPMENT Cable Tool Air Rotary;

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WATER	WATER LEVELS				STARTFINISH	LOGGER L Gall		
TF		SAMPLE		STANDARD	SOIL DESCRIPTION	CONMENTS		
DEPTH BELO	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION		
						380 feet bos water sample:		
-					•	T=20.2 degrees C pH=8.54 cond=290		
-					ŧ	- F-=0.19 -		
-					Basalt, as above.	-		
-	1				End of Boring			
385.0					-	-		
-						-		
-								
· -				· · ·				
-					•	-		
3700-								
-					•.			
-						4 . 4		
-						4 . <del>4</del>		
375.0					· · ·	- · · ·		
- 1						4 · 4		
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380.0					-			
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3450-								
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CHEM HILL	PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
PROJECT <u>Reynolds Metals RMC-Troutdale</u> ELEVATION	DRILLING CONTRAC	LOCATION Northeast Cor TOR Tacoma Pump & Drilling Co.	ner of NLF
DRILLING NETHOD AND EQUIPMENT Cable Too	al Air Rotary;	FRITCH	
	START		
0 GROUND SURFACE   10 20   10 20   10 20   10 20   10 40   10 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100 100   100	e Surry Seal	1 foot flush	
280 290 300 310 320 330 340 360	Bentonit		See Boring Log For Drilling Details

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PROJECT NUMBER 107 493.NI.02

WELL	NUMBER
MW22	-017

SHEET I OF I

### MONITORING WELL GEOLOGIC AND CONSTRUCTION LOG

PROJECT Reynolds Aluminum Company - Troutdale, OR

## LOCATION North Landfill

MEASURING POINT ELEV (NGVD) 25.35 DRILLING CONTRACTOR Geo-Tech Explorations

DRILLING METHOD AND EQUIPMENT 8-1/4" ID HSA

WATER LEVEL ELEV/DATE					START 9/8/95 FINISH 9/8/95 LOGGER IVA		R Ivan Gali					
TF		SAMPLE	5	STANDARD	SOIL DESCRIPTION		z	WELL COMP	WELL COMPLETION DIAGRAM			
105			ΥΥ.	RESULTS	SOIL NAME, USCS GROUP SYNBO	DL. COLOR.	PTIO					
DEPTH B SURFAC	INTERV	TYPE AN NUMBER	RECOVE FEET	(N) 8, -9, -9,	MOISTURE CONTENT, RELATIVE OR CONSISTENCY, SOIL STRUC MINERALOGY	DENSITY TURE,	USCS DESCRI					
					<u>Silty Loam</u> , Mod. yellow-brown yr 5/4), loose, dry	(10		Concre				
•. •	2.5				SIII. (ML), Dusky brown (5 yr 2	2/2).		lockin				
	4.0		• 1.0	4-4-4 (l2)	damp, tirm, ~5% time- grained s	sand	ML   .	er stee				
<b>5.0</b> –	5.0		0.5	2-2-4	<u>Silt w/Sand</u> , (ML), Mod. yellow-brown (10 yr 5/4), Dam	p, firm,	-	diamete	meter,	-		
	<u> </u>			(8)	to bit Sant Wisht, (SP), M yellow-brown (10 yr 5/4), damp loose, sand fine grained	od. D	-	B-In lug eaal	XXXX XXXX Inch dia h-threa asing ·	-		
-	9.0		1.0	3-4-8 (13)	Sand, (SP), As above, damp, 5- silt	-10%	-	Benton Dellet s Coars Envirop	40 flus	-		
100 -	10.0			-			_		Set en solution			
	11.5		1.0	5-7-7 (19)	Sang, (SP), Brownish gray, (S) 4/t), damp, loose, fine grained coarsening downwards to med. grained	yr	-			-		
-	12.5				Cond (CP) As above does		-			-		
-	14.0		1.0	4-4-8 (14)			-		I Centr			
15.0	15.0			2-3-3	Sand, (SP), As above, wet					-		
-	18.5	· ·	0.3	(8)			- -		Stalnie			
	17.5			3-5-8	Sand, (SP), As above, wet		56			4		
-	19.0		•	(14)			-	0-40		-		
20.0	20.0-				Sand. (SP). As above, wet		•	2 pug 2		_		
	21.5			2-2-4 (8)			-	silica se	I I I I I I I I I I I I I I I I I I I	-		
-	22.5		·		Sand. (SP). As above, wet		1	ope .	ch dl ch dl Cent			
-	24.0			1-2-2 (5)				Calar	2-In Sch thread			
25.0							-			4		
	28.5				Sand, (SP), As above, wet, silt- layer at 28.5 ft, BGS	rich	•					
-	28.0			(11)					5500	_		
-							-		2-inci liam. Sci 40 PV( Silt Trag	4		

CHIM HILL

PROJECT NUNBER 107493.HI.02 WELL NUMBER

SHEET I OF 2

### MONITORING WELL GEOLÓGIC AND CONSTRUCTION LOG

## PROJECT Reynolds Aluminum Company - Troutdale, OR

#### LOCATION Scrap Yard

### NEASURING POINT ELEV (NGVD) 30.89 DRILLING CONTRACTOR Geo-Tech Explorations DRILLING NETHOD AND EQUIPMENT HSA - Mobile Drill B-59, 8-1/4" ID Augers

WATER LEVEL ELEV/DATE .....

START 7/24/95 FINISH 7/24/95 LOGGER Ivan Gall

	.	SAMPLE		STANDARD	SOIL DESCRIPTION		WELL COMPLETION DIAGRAM			
No.	;			PENETRATION		NOI				
	¥ I	UN H	ERY	RESULTS	SOIL NAME, USCS GROUP SYMBOL, COLOR.	TPT				
DEPTH	INTER	TYPE /	RECOV	8° -8° -8° (N)	OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	USCS				
		1			Sand, (SP), Brown-gray, loose, dry	1	T		-	
	-				Comment: Refractory brick to 1 ft.	-	1			
·	2.5					-				
				4-4-3	Sand, (SP), Tan-brown, loose, dry,					
	4.0		1.3	(11)	ine- to medgramed, 5 - tow site	SP				
	50					-				
5.0	- 3.0			2.2.1	<u>Sand</u> , (SP), As above, damp	-			_	
1	8.5		1.3	(5)		-	4			
	7.5								-	
				2.2.0	Silt, (ML), Brown w/orange mottling,					
	9.0		. <mark>1.0</mark>	(8)	111ft, wet, 10 - 15% V. Time Sand				•	
	100								2	
10.0 -	10.0				Silt. (ML), Gray-brown w/orange	$- $	·		_	
	11.5		1.5	(3)	motting, inin, damp, signity elastic		Sinta	li l	-	
	- 105					ML -	· ·	8 8 9 F	_	
	12.5				Silt. (ML), Lt. gray-brown w/orange		e Er	SS 🛇 🛇	_	
	14.0		1.5	(3)	mottling, 1#m, damp, slightly plastic, 5% v. fine sand		pars		. 1	
	15.0						al C	ter XX	1	
15.0 -	15.0				Silt_w/Sand, (ML), Lt. gray-brown	-	sei	search XX	-	
	- 185		1.5	(3)	w/orange mottling, firm, wet, 15% v. fine sand		ellet		-	
							te p			
	17.5				Silty Sand, (SM), Gray-green, firm,		lnon		· ·	
	119.0		1.0	(3)	wet, 20% silt, sand fine- grained		Be		-	
· ·	10.0					с и <sup>-</sup>			-	
20.0 -	20.0				Silty Sand. As above, damp to wet	-			-1	
	215		1.3	2-2-2					4	
	21.0									
	22.5			· · · · · · · · · · · · · · · · · · ·	Silt_w/Sand, (ML), Gray-green, firm.					
	1 24 0		. 1.3	!-1-4 (8)	damp, 15% fine sand	ML 1			1	
-	24.0					-			-	
25.0	25.0				Silty Sand, (SM), Gray-green, firm,	_			1	
-			1.2	2-3-4	damp to wet, 20% silt, sand					
	28.5					SM				
	27.5				Silty Sand (SM) As above to 28.5	1			1	
-			1.0	1-1-1	ft. BGS;	-			-	
-	29.0			(3)	medgrained				4	
	30.0					JM			1	


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PROJECT NUMBER

#### WELL NUMBER NW25-35

SHEET 2 OF 2

# MONITORING WELL GEOLOGIC AND CONSTRUCTION LOG

PROJE	PROJECT Reynolds Aluminum Company - Troutdale, OR LOCATION Scrap Yard									
NEASU	NEASURING POINT ELEV (NGVD)									
WATER	WATER LEVEL ELEV/DATESTART 7/24/95 FINISH 7/24/95 LOGGER Ivan Gall									
-F		SAMPLE		STANDARD	SOIL DESCRIPTION	7	<u> </u>			
ELO.	L.		RY	RESULTS	SOIL NAME, USCS GROUP SYMBOL, COLOR,	101		WELL		
FAC	ERVI	E AN	OVE T	8' -8' -8'	MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE,	CRIF		DIAGRAM		
SUR	INI	1 F Z		(N)	MINERALOGY	US0 E				
. _	30.0			3-5-10	Sand, (SW), As above Comment: Driller reports heave in	_	7			
	31.5				auger	.	ess eel zer zer silica			
_	32.5			7_0_0	Sand, (SW/SP), Gray, wet, loose,	_	ado d 20			
	34.0		1.0	(25)	med. Aranied	SW _	C Cer S San			
350	35.0				Sand (CH(CR) Craw groot web					
	2015		1.2	3-9-13 (25)	loose, w/silt laminations					
· ·	30.5						Stee			
_				-			Centi	0 PV(		
-							Stal	d b 4 d		
40.0 -								S La -		
								amet w/s		
4								trap.		
_								- 3		
4								· · · -		
45.0 -					· · ·			·		
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50.0 -								. –		
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55.0					· .			_		
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CHAL			PROJECT NUNBER   BORING NUNBER     107493.08.02   HW27-178   SHEET 1 OF 9				
CANAL			SOIL BORING LOG				
PROJEC	Reynolds Metals	- RMC-Troutdale		LOCATION App	rox. 40 ft. East of Co. Lake Outlall Ditch	es	
ELEVA	TION	-	DRILLING CONTRACTOR Tacoma Pump & Drilling				
DRILLI	NG NETHOD AND EQUI	PNENT Cable To	ool to 100 feet/Air Rotary to 280	leet.			
WATER	LEVELS		START	_ START 7-8-98 FINISH 7-17-98 LOGGER		_	
			SOIL DESCRIPTIO	И	COMMENTS		
ĞЕ		TEST					

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1 SiL		1	1	PENE THATION			
DEPTH BEL(	INTERVAL	TYPE AND NUMBER	RECOVERY	TEST RESULTS 0'-8'-0' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION	
					0 - 0.25 teet crushed basalt road base (111). -		
<u>5</u> 0 -					<u>SILT with SAND</u> , (ML), brown, damp, very soft, sand fine to medium grained, 15 - 20 percent sand.		
<b>10.0</b> -	10.0						
	11.5		1.2	0-0-0 (18)	At 11 feet becomes: <u>SAND</u> , (SP), brown, damp, koose, fine to medium grained.		-
<b>15.0 -</b> - -			-		SAND with SILT, (SW-SM), brown, damp loose, interbedded with 1-inch thick layers of SAND, (SP), and <u>SILTY SAND</u> , (SM).		and the second
- 20.0	20.0						de la constante
*	21.5		0.9	2-3-4 (7)	loose, fine to medium grained, less than 5 percent coarse subangular sand. No silt. Red sand grains observed approximately 5	F-=3.19 pH=8.23 T=21.1 degrees C	
						CONG#200.	And
-					SANIL (SW), as above.	· .	
-	30.0			-			-



PROJECT NUMBER

BORING NUMBER

. SHEET 2 OF 8

#### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

# LOCATION Approx. 40 ft. East of Co. Lake Outfall Ditches

ELEVATION \_\_\_\_

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DRILLING CONTRACTOR Tacoma Pump & Drilling

# DRILLING NETHOD AND EQUIPMENT Cable Tool to 100 feet/Air Rotary to 280 feet.

WATER LEVELS					START 7-8-98	FINISH 7-17-	98 LOGGER Kathy Gehweller
xF		SAMPLE	=	STANDARD	SOIL DESCRIPTION		COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	0' -0' -0' (N)	SOIL NAME, USCS GROUP SYMBOL, MOISTURE CONTENT, RELATIVE D OR CONSISTENCY, SOIL STRUCTU MINERALOGY	COLOR. ENSITY RE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-	30.0 31.5		2.0	8-8-12 (20)	SAND, (SW), as above, except go brown to brownish yellow at 30.5 brownish gray at 31 feet. Brown SAND, (SN), fayer I-inch thick at feet. Sand is fine to medium grai red grains less than 5 percent, ic	ies from feet, to - SILTY 30.9 - ned with xose	Driller reports heaving sand in casing. - -
360 - -					SAND, (SW), brownish gray (5 yr loose, fine-to-coarse grained sa than 10 percent fine (1/4) to coa (I-inch) subangular gravel varyin from dark gray to red.	4/1), wet,	Driller reports small silt layer at 35 feet. - -
-	40.0				· ·	1	
40.0	41.5		0.4	8-8-8 (16)	SAND. (SW), as above, except thi layer (.5 - 1 inch) at 40 feet, les sand, less than 5 percent fine gra flakes observed (less than 5 per	n slit	40 teet bgs water sample: F-=8.0 pH=8.88 T=15.0 degrees C - cond=450.
- - 45.0 -					<u>SAND.</u> (SW), as above, except no than 5 percent gravel, one piece	slit, less	Oriller reports heaving sand in casing.
- 50.0 — -	50.0 51.5		2.0	20- <del>35-35</del> (70)	SAND, (SW), as above, except gra gravel, the to medium grained san plece vegetation, dense.	sy, no	
- - 		- -			SAND, (SW), as above.		
-	80.0			-		. 1	-

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PROJECT NUMBER

BORING NUMBER

SHEET 3 OF 9

#### SOIL BORING LOG

### PROJECT Reynolds Metals -- RMC-Troutdale

### LOCATION Approx. 40 It. East of Co. Lake Outfall Ditches

ELEVATION .

### DRILLING CONTRACTOR Tacoma Pump & Drilling

DRILLING NETHOD AND EQUIPMENT Cable Tool to 100 feet/Air Rotary to 280 feet.

FINISH 7-17-98 LOGGER Kathy Genweiler START 7-8-98 WATER LEVELS . STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION COMMENTS SF. DEPTH BEL SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, TYPE AND NUMBER RECOVERY FEET DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION INTERVAL 8'-8'-8' MINERALOGY (N) 80,0 10/8" SAND, (SW), dark gray, wet, loose, fine to medium grained, trace red grains, micaeous, trace (less than 5 percent) 80 feet bgs water sample: 0.5 81.5 F-=11.5 pH=7.08 T=18 degrees C cond=720. vegetation and coarse sand. 85.0 SAND, (SW), as above. 70.0 70.0 SAND, (SW), as above, except medium dense, no vegetation, and 2-3 inch thick SILT, (ML), layer from 70.7 - 70.9 feet, 8-20-35 1.0 (55) 71.5 followed by SAND, (SW) as above. 75.0 SAND, (SW), as above except no sit. 80.0 80.0 SAND. (SW), dark gray, wet, loose, fine to coarse-grained. Trace red sand, 80 feet bgs water sample: 8-6/2" 0.3 micaceous. F-=1.51 pH=7.52 T=14.8 degrees C 81.5 cond=780. 0.26 90.0



PROJECT NUNBER 107493.08.02

BORING NUMBER NW27-178

SHEET 4 0F 9

#### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

LOCATION Approx. 40 It. East of Co. Lake Outfall Ditches

F-=0.29 pH=7.84 T=14.0 degrees C cond=430.

ELEVATION

DRILLING CONTRACTOR Tacoma Pump & Drilling

### DRILLING METHOD AND EQUIPMENT Cable Tool to 100 feet/Air Rotary to 280 feet.

START 7-8-90 FINISH 7-17-98 LOGGER Kathy Gehweller WATER LEVELS STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION COMMENTS SF ACE SOIL NAME, USCS GROUP SYMBOL, COLOR, NOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, TYPE AND NUMBER RECOVERY DEPTH OF CASING, DRILLING RATE, INTERVA **BURFAC** DRILLING FLUID LOSS 8' -8' -8' TESTS AND INSTRUMENTATION MINERALOGY (N) 90.0 8-10-20 SAND. (SW), as above, except with trace 1.5 (30)pebbles, (to 0.5-inch maximum size). 81.5 950 98.0 3-4-10 (14) 1.3 100.0 SAND. (SW), as above, with trace of gravel (to 3 inch maximum size) and trace 100.5 100 feet: Driller reports gravel in baller. of wood fragments. 100 feet bgs water sample: F-=11.8 pH=7.25 T=14.2 degrees C cond=800. Air rotary takes over at 100 feet bgs. Gravel at 101 feet bgs. Casing producing IOI feet: GRAVEL. (GW), gray black (N2), approximately 3 gpm. wet, dense, moderately well rounded primarily basalt with trace quartz, 105.0 volcanics, and metamorphics, trace wood fragments, sand. Casing producing approximately 50 gpm water. Slight sheen noted on water. 110.0 110.0 GRAVEL, (GW), as above. 110 feet bgs water sample: 50/0" F-=0.28 pH=7.80 T=14.5 degrees C cond=500. Casing producing approximately 80 gpm. 115.0 GRAVEL, (GW), as above. GRAVEL, (GW), gray black (N2) with red (possibly matrix or cement) wet, dense, Casing producing 3-5 gpm. gravel moderately well rounded (to 1.5-inch maximum size). 118 feet bgs water sample:

CHOM	Hill			•	PROJECT NUMBER E 107 493 D8.02	B <b>oring N</b> 1W27-178	UNBER SHEET 5 OF 9		
Califi					SOIL	BOR	ING LOG		
PROJEC	ROJECT Reynolds Netals RMC-Troutdale LOCATION Approx. 40 It. East of Co. Lake Outfall Ditches								
ORTLUT	NG NET	HOD AN	D EQUI	PMENT Cable T	ool to 100 feet/Air Rotary to 280 feet.				
WATER	LEVEL	S			START 7-8-90 FINIS	SH 7-17-1	98 LOGGER Kathy Gehweller		
-=		SAMPLE		STANDARD	SOIL DESCRIPTION		COMMENTS		
JEPTH BELON JURFACE (F'	NTERVAL	LYPE AND	IECOVERY EET	PENETRATION TEST RESULTS 6' -8" -8" (N)	SOIL NAME, USCS GROUP SYMBOL, COLO MOISTURE CONTENT, RELATIVE DENSIT OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	iR, IY	DEPTH OF CASING, DRILLING RATE. DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION		
-			<u>u</u> u		<u>GRAVEL</u> , (GW), as above.		Casing producing approximately 50 gpm. 122 feet bgs water sample:		
-			-		<u>GRAVEL</u> , (GW), gray black (N2), wet, dense, moderately well rounded (to 1.5-inch maximum size), 85 percent basa some quartz.	alt, -	Gray sand with gravel at 123-125 teet sheen and odor on water.		
-					GRAVEL, (GW), as above.	-			
-			-		· · ·		· •		
130.0 - -					GRAVEL, (GW), as above.		Casing producing approximately 70 gpm		
-					GRAVEL, (GW), moderate olive brown (5 4/4), wet, dense, moderately well round partially cemented, primarily basalt (85-90 percent), some white/yellow quartz, red volcanics.	5 yr - led, -	Casing producing approximately 70 gpm - -		
<b>136.0</b> - -					•				
<b>140.0</b>					GRAVEL, (GW), as above.	- - -	PID/FID less than I ppm 140 leet: water production approximately 10 gpm, sheen and odor on water.		
- - -						-			
H60						-	Some (10 percent) sand at 148 leet.		
-				<u>_</u> 1		1			
		<u> </u>							

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BORING NUMBER MW27-178

SHEET 8 OF 9

### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

LOCATION Approx. 40 It. East of Co. Lake Outfall Ditches

ELEVATION \_

DRILLING CONTRACTOR Tacoma Pump & Drilling

# DRILLING NETHOD AND EQUIPMENT Cable Tool to 100 feet/Air Rotary to 280 feet.

WATER	LEVEL	S			START88	FINISH	7-17-8	6 LOGGER Kathy Gehweiler
жF		SAMPLE		STANDARD	SOIL DESCRIPTION			. COMMENTS
DEPTH BELO Surface (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	6'-8'-8' (N)	SOIL NAME, USCS GROUP SYMBOL MOISTURE CONTENT, RELATIVE D OR CONSISTENCY, SOIL STRUCTU MINERALOGY	COLOR, ENSITY RE,		DEPTH OF CASING DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-					<u>GRAVEL</u> , (GW), as above.		-	Water production approximately 10 gpm. 150 feet bgs water sample: F-=0.29 pH=7.56 T=16.7 degrees C cond=290. Harder drilling; less water production (5
 0.381 	-				<u>GRAVEL</u> , (GW), as above.			gpm) at 151 ft. 154 feet: water production approximately_ 50 gpm, sheen and odor on water.
- - 180.0		÷			GRAVEL. (GW), as above.		-	
-								approximately 60 gpm. 181–183 feet: less water production approximately 10 gpm.
<b>186.0</b> - -					<u>GRAYEL</u> , (GW), as above.			
- 1700 — - -		-			GRAVEL, (GW), as above.			Casing producing approximately 50 gpm 170 feet bgs water sample: F-=0.28 pH=7.54 T=15.8 degrees C cond=210. Sheen and odor on water.
- - 175.0 - -					<u>GRAVEL with SILI</u> , (GW-GM), dark (N3), gravel with pale yellowish bi yr 8/2) silt matrix, wet, dense, (si gravel as above.	c gray rown (10 lit firm),		Casing producing approximately 80 gpm - In gravel.
-				-	SAND, (SW), light olive (10 yr 5/4 loose, angular, fine-to- nedlum-g trace pebbles, mica flakes.	), wet, Irained,	ł	F=0.31 pH=7.54 T=15.9 degrees C cond=210. No sheen or odor. Casing producing approximately 5 gpm in gravel with silt.

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PROJECT	NUNBER
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BORING NUMBER NW27-178

SHEET 7 OF 9

### SOIL BORING LOG

# PROJECT Reynolds Metals -- RMC-Troutdale

### \_LOCATION Approx. 40 It. East of Co. Lake Outfall Ditches

ELEVATION .....

# DRILLING CONTRACTOR Tacoma Pump & Drilling

DRILLING NETHOD AND EQUIPMENT Cable Tool to 100 feet/Air Rotary to 280 feet.

WATER	WATER LEVELS			-	START 7-8-98 FINISH 7-17-	-98 LOGGER Kathy Gehweiler	
3F		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS	
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS 8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION	
-	-		-	,	SAND, (SW), as above.	Casing producing approximately 50 gpm and significant amounts of sand.	
-			-		<u>GRAVEL</u> . (GW), dark gray (N3), wet, dense, partially cemented, 85 percent basalt, moderately well rounded.	Casing producing less than 5 gpm - air possibly pushing water into formation.	
- 1860					SAND with SILT, (SW-SM), dusky yellow (5 yr 6/4), wet, loose, approximately 15 percent slit, sand tine to coarse-grained, subangular to subrounded, mica flakes.	PID/FID less than I ppm on cyclone casing producing less than 3 gpm water.	
-			-				
<b>190.0</b>							
-					5/2), wet, loose, line to coarse-grained, subangular to subrounded.	vater. 182 feet bgs water sample:	
-						F-=0.34 pH=7.41 T=13.8 degrees C cond=340. No odor, slight sheen.	
<b>196.0</b>	197.0				GRAVEL, (GW), grayish black (N2), wet, dense, moderately well- rounded, primarily basalt, partially cemented.	Casing producing less than 1 gpm water.	
-	198.5		0.0	50/2"	SAND, (SW), medium dark gray (N4), wet, loose, fine-coarse- grained, sub-angular to subrounded, trace of gravel and mica.	Casing producing approximately 80 gpm water.	
- 200.0 —					-		
-							
 206.D					GRAVEL, (GW), gravish black (N2), wet, dense, moderately well rounded, maximum size 2 inches, primarily basait, trace of sand.	Casing producing approximately 80 gpm. -	
-						208 feet bgs water sample:	
-				-		cond=370. No odor or sheen.	

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PROJECT	NUMBER
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BORING NUMBER NW27-178

SHEET 8 OF 8

### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

# LOCATION Approx. 40 It. East of Co. Lake Outfall Ditches

ELEVATION .

DRILLING CONTRACTOR Tacoma Pump & Drilling

# DRILLING NETHOD AND EQUIPMENT Cable Tool to 100 feet/Air Rotary to 280 feet.

WATER	ATER LEVELS				START	_FINISH 7-17-8	8 LOGGER Kathy Gehweller
TF		SAMPLE		STANDARD	SOIL DESCRIPTION	1	COMMENTS
DEPTH BELOV SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8" -8" -8" (N)	SOIL NAME, USCS GROUP SYMBOI MOISTURE CONTENT, RELATIVE OR CONSISTENCY, SOIL STRUCT MINERALOGY	L, COLOR, DENSITY URE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-		:			<u>GHAVEL</u> , (GW), as above.		212 feet: Silt and sand in gravel; casing producing less than 5 gpm.
- 215.0					<u>GRAVEL</u> , (GW), as above, 10 per	cent slit.	
-							- Casing producing approximately 10 gpm - water
<b>0.055</b> -					GRAVEL, (GW), as above. Weathered basalt, silt matrix, me gray (N4), gravel grayish black grayish red purple (5 rp 4/2), a green (5 g 5/2) wat medium dei	dium dark (N2), ind grayish	F-=0.31 pH=7.88 T=14.8 degrees C cond=270. Slight HC odor; slight sheen on water.
- - <b>225.0</b>					to 0.5-Inch maximum size, suban subrounded, 20-25 percent gra	vel	- Casing produces no water. - - -
- - 2300	230.0				Vestored basalt motiled grav		Casing produces no water
	231.5		0.9	45-80/4"	blue-green, dense, damp, slit-m gravel (maximum size less than (	atrix with 3.5 inch)	
- 236.0 - -					Weathered basalt, as above.		Casing produces no water.
						1	-



PROJECT NUNBER 107 493.08.02

BORING NUNBER NW27-178

SHEET 9 OF 9

### SOIL BORING LOG

PROJECT Reynolds Netals -- RMC-Troutdale

### LOCATION Approx. 40 It. East of Co. Lake Outfall Ditches

ELEVATION

DRILLING CONTRACTOR Tacoma Pump & Drilling

# DRILLING NETHOD AND EQUIPMENT Cable Tool to 100 feet/Air Rotary to 280 feet.

WATER	WATER LEVELS			START 7-8-98 FINISH 7-17-98 LOGGER Kath				
₹F		SAMPLE		STANDARD PENETRATION	SOIL DESCRIPTION		COMMENTS	
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLO MOISTURE CONTENT, RELATIVE DENSIT OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	)R. TY	DEPTH OF CASING, DRILLING RATE. DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION	
-					Weathered basalt, grayish red (5 yr 4, wet, very dense, weatherd to silt and o plus gravel.	/2), clay -	Casing producing no water. Driller adds 40 gallons of water.	-
						. I	• •	
245.0				· ·		-	Contact at 247 teet bos	-
-	•.				Basalt, grayish black (N2) to grayish r (5 yr 4/2), wet, very dense.	ed _		
- 250.0 —				,		-	Casing producing less than I gpm driller adds 20 gallons of water.	-
						-		
						T	. · · ·	
256.0					Basalt, as above.		• •	
-								
280.0 -					Basalt, as above.	-	280 feet bgs water sample: F-=0.28 pH≈8.21 T≈14.4 degrees C	
-							cond=470. Slight HC odor, water tea colored. Total Depth = 280 feet bgs	
- 286.0						-	Casing shoe cut at approximately 248 feet bgs on 7/18/98.	
-						-		
-				-		-		-

_	PROJECT NUNBER	BORING NUMBER	· · · · · · · · · · · · · · · · · · ·
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		WELL COMPLETIC	DN LOG
PROJECT Reynolds Metals RMC	-Troutdale	LOCATION Approx. 40	It. East of Co. Lake Outfall Di
	- Cable Tool to 100 test/Ak Bata	RACTOR Tacoma Pump & Drilling	·
WATER LEVELS	START 8-8-91	FINISH <u>8-14-98</u>	LOGGER Kathy Gehweller
		<b>_ </b>	
0 GROUND SURFACE			
10 <b>-</b>	ng Cap	asing f	
20 -	Conc	Protei	
30 -	anding	1 F 0	
40 -	3		
50			
70 -			
	Inrry S	Schedu J PVC (	
	onite s	meler (	
80	Bent	liesh th	· .
100			
H H 10		0 PVC	
		with the solution of the solut	
150 -	Send T	Ser Sche Ser Sche Ser Ser	
180		(40 Cline fr	
170 -			
180		±	
	ਂ ਭੋ	PVC, su	
200			
210			
220	Slurr Slurr		
230	🗰		
240			
250			
			See Boring Log For Drilling Detail

				·	PROJECT NUMBER 107493.D6.02	BORING N MW37-012	UNBER SHEET I OF I				
CHIM	HILL			-	SOI	SOIL BORING LOG					
PROJE	CT Rey	nolds N	etals	- RMC-Troutdal	eLOC	CATION Sou	th Wetlands; RR Dike on Old Existing Road				
ELEV/	TION _				DRILLING CONTRACTOR GeoTer	DRILLING CONTRACTOR GeoTech Explorations, Inc.					
DRILL	ING NET 3 LEVEL	HOD AN S	id Equi	PMENT	START 10-23-98 FIN	CTART 10-23-88 ETNTCH 10-23-88 LOCCER T. Gehweiler					
жF		SAMPLE		STANDARD	SOIL DESCRIPTION		COMMENTS				
BELO E	٩٢	₽_	ЯΥ	RESULTS	SOIL NAME, USCS GROUP SYMBOL, COL	LOR,	DEPTH OF CASING DRILLING BATE				
DEPTHI	INTERV		RECOVE	8" -8" -8" (N)	OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY					
					0–2 Feet: Grass and moss covered surface. <u>SAND</u> , (SM), dark brown, da dense, 50% old brick fill, roots, veget organics. Old roadbed.	amp, tation,	Collect Soil samples for TOC analysis at: 2.5 - 4 foot time: 900				
-	4.0		0.9	I-2/12"	Water observed at 2.5 feet bgs 2.5–4.5 Feet: <u>SILI</u> , (MH), brown, wet soit to soit, some crange-brown mot plastic	t very - ttling, -	4 - 55 foot time: 913				
<u>50</u> -	5.5		1.0	-2-3 (5)	4.5-5.3 Feet: <u>SILT WITH SAND.</u> (ML) , gray, wet, soft, medium grained sand, , decomposed yellow brick.	, dark , 10 <b>X</b>					
-	7.5		1.5	3-3-3 (8)	5.3–9 Feet: <u>SANDY SILT</u> , (ML), brown wet, soft, mottled, not plastic. Becon gray at 9 ft bgs.	n, janes _	8 - 7.5 foot time: 930 -				
-	8.5		15	i-2 <del>-</del> 1	9-12 Feet: SANDY SILT. (ML), gray, y	wet.	8.5 - 10 toot time: 1000				
10.0 -	<u>io.o</u>			(3)	soft, not plastic.						
-	12.5		1.5	1-1-1 (2)	Wet, very soft, plastic, 14 14 12-12.5 Feet: SILT, (NH), gray, wet, v 12-12.5 Feet: SILT, (NH), gray, wet, v	y. F	12.5 - 14 foot time: 1020				
-	14.5				13-15 Feet: STI TY SAND (SN) gray		14.5 - ifi toot time: 1045				
16.0	18.0		1.5	2-2-2 (4)	very loose, wet, fine grained, less that vegetation.	in IX 7	Driller reports slight odor at 7.5 feet.				
_					15-18 Feet: <u>SILT</u> , (NH), gray, wet, so plastic. Total Depth = 18 Feet bgs with sample Feet bgs with auger	1t, er; 15					
<b>20.0</b>							-				
1											
-											
-						1	· · · · · · · · · · · · · · · · · · ·				

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PROJECT NUMBER 107483.08.02

### BORING NUMBER

MW31-085

SHEET 1 OF 5

### SOIL BORING LOG

PROJECT Reynolds Metais -- RMC-Troutdale

# LOCATION Northeast Corner of Fairview Farms

ELEVATION \_\_\_

DRILLING CONTRACTOR Staco Well Services

#### DRILLING NETHOD AND EQUIPMENT Cable Tool with 8" Threaded Casing 11-28-08

WATER	LEVEL	S			START 11-28-98 FINISH 12-8-	98 LOGGER J. Bowker
зF		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS 8' -0' -0' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-					Reter to by MW3IS tor upper 20 teet.	
- 6.0 —						
-					-	-
- - 10.0 -					-	
, 					-	
16.0 -					-	-
-					-	-
20.0 — -	21.0				Top 1.0 foot: <u>SILT with SAND</u> , (ML), alive	
-	22.5		1.5	1-1-2 (3)	gray (5Y4/I), moist, soft, fine grained sand. – Bottom 0.5 foot: <u>SILT</u> , (ML), olive gray (5Y4/I), moist, soft. –	
- 25.0 —		,			-	24 teet bgs water sample: - T=NA degrees C pH=7.33 cond=180 F-=0.382 -
-	29.0				SAND, (SW), medium dark gray (N4), wet, medium dense, fine to coarse grained, 5-10% fines.	
	28.8		1.5	7-12-15	-	-



PROJECT NUNBER

BORING NUMBER

SHEET 2 OF 5

### SOIL BORING LOG

# PROJECT \_\_\_\_\_\_ Reynolds Metals -- RMC-Troutdale

# \_LOCATION\_Northeast Corner of Fairview Farms

ELEVATION \_

# DRILLING CONTRACTOR Staco Well Services

# DRILLING NETHOD AND EQUIPMENT Cable Tool with 8" Threaded Casing

WATER	R LEVELS			STARTFINI	SH 12-8-8	LOGGER J. Bowker	
TE		SAMPLE		STANDARD	SOIL DESCRIPTION		COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	PENE IRATION TEST RESULTS 6' -8' -6' (N)	SOIL NAME, USCS GROUP SYMBOL, COLO MOISTURE CONTENT, RELATIVE DENSI OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	OR, TY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
_							-
-						-	-
-						-	-
-						-	-
35.0 —						-	-
-						-	-
-						-	-
-						-	-
_						4	-
40.0	40.0						Soil sample NW3II-0400-0
			1.5	7-7-7		_	T=7.0 degrees C pH=7.33 cond=195
	41.5			(14)			F-=0.285
_							-
-						-	-
45.0						-	· · · · · · · · · · · · · · · · · · ·
-						-	-
_						-	-
_						-	-
-							-
50.0	50.0				SAND. (SW), same as above.	_	_
_	51.5		1.5	7-8-11 (19)		-	_
_						_	-
_						_	
<b>FT</b> 0							-
50,0							
_				-		-	-
-						-	-
-						-	-
				-		. –	-
	80.0						



PROJECT NUMBER 107493.08.02

# BORING NUMBER

MW31-085

SHEET 3 OF 5

### SOIL BORING LOG

# PROJECT Reynolds Metals -- RMC-Troutdale

# LOCATION Northeast Corner of Fairview Farms

ELEVATION .....

# DRILLING CONTRACTOR Staco Well Services

#### DRILLING METHOD AND EQUIPMENT Cable Tool with 8" Threaded Casing CTART 11-28-88

TER LEVELS				START 11-28-98 FINISH 12-8-98 LOGGER J. Bowker		
	SAMPLE			SOIL DESCRIPTION	l	COMMENTS
INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS 8'-8'-8' (N)	SOIL NAME, USCS GROUP SYMBO MOISTURE CONTENT, RELATIVE OR CONSISTENCY, SOIL STRUCT MINERALOGY	L, COLOR, DENSITY URE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
60.0		1.5	7-10-11	SAND, (SW), same as above, wit no fines and slightly coarser sa	h little to nd grains.	Soll sample MW31I-0800-0 80 feet bgs water sample:
81.5			(21)			T=8.4 degrees C pH=8.82 cond=250 F-=1.84
	-					
					-	
					_	
					-	
					-	
					-	_
70.0				SAND. (SW), same as above with	1 5-10%	
71.5		0.2	10-11-9 (20)	fines.	-	-
					-	
					-	-
					-	-
						_
					-	
					-	-
					-	-
					-	
60.0		15		SAND, (SW), same as above.	_	Soll sample MW3II-0800-0
81.5		1.5			-	degrees C pH=7.50 cond=180 F-=11.1
					-	-
					-	· -
					-	-
					-	
					-	-
					-	-
					-	
90.0			-		-	-
	EEVEL: IVAL: 80.0 81.5 80.0 81.5 80.0 81.5	IEVELS   SAMPLE   INAU   B0.0   B1.5   70.0   71.5   80.0   81.5   80.0   81.5	LEVELS   SAMPLE   IN ANN   IN NUM   B0.0 1.5   B1.5 1.5   70.0 0.2   71.5 0.2   80.0 1.5   80.0 1.5   80.0 1.5   80.0 1.5   80.0 1.5   80.0 1.5	LEVELS   SAMPLE STANDARD PENETRATION TEST   Number of the second s	LEVELS   STANDARD PENETRATION RESULTS   SOIL DESCRIPTION SOIL DESCRIPTION NOISTURE CONTENT, RELATIVE 0°-0°     000   1.5   7-10-11 (21)   SOIL NAME, USCS GROUP SYMBO ON CONTENT, RELATIVE ON CONSTITENCY, SOIL STRUCT, NICHARD OF MINERALOGY     000   1.5   7-10-11 (21)   SANDL (SW), same as above, with no times and slightly coarser sa     70.0   -   -   -     70.0   -   -   -     71.5   0.2   10-11-8 (20)   SANDL (SW), same as above with fines.     80.0   -   -   -     80.0   -   -   -     80.0   -   -   -     80.0   -   -   -     80.0   -   -   -     80.0   -   -   -     80.0   -   -   -     80.0   -   -   -     80.0   -   -   -     80.0   -   -   -     80.0   -   -   -     80.0   -   -	LEVELS   START   II-28-28   FINISH   I2-8-     SAMPLE   STANDARD PENETRATION   SOIL DESCRIPTION   SOIL DESCRIPTION     Image: Sample in the second stress of the second stresecond stresecond stress of the second stress of the second stres



PROJECT NUMBER 107493.D8.02 BORING NUMBER

SHEET 4 OF 5

### SOIL BORING LOG

# LOCATION Northeast Corner of Fairview Farms

ELEVATION ....

DRILLING CONTRACTOR Staco Well Services

# DRILLING NETHOD AND EQUIPMENT Cable Tool with 6" Threaded Casing

WATER	LEVELS	S			START 11-28-98	FINISH 12-8-	96 LOGGER J. Bowker
жF		SAMPLE			SOIL DESCRIPTION		COMMENTS
depth Belo Surface (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS 8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, MOISTURE CONTENT, RELATIVE D OR CONSISTENCY, SOIL STRUCTU MINERALOGY	. COLOR, ENSITY RE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	90.0	<u> </u>			SAND, (SW), same as above.		80 feet bgs water sample:
-	81.5		1.5			-	T=8.4 degrees C pH=8.83 cond=270
-						-	F -= 13.5
-						_	-
_						-	-
050							
-						-	
-							-
-						-	-
-						-	-
100.0	100.0				SAND. (SW), same as above.	_	Soll sample MW3II-1000-0
-	101.5		1.5			-	100 feet bgs water sample:
	101.5						T=9.5 degrees C pH=7.09 cond=285 F-=14.1
_							
_						-	
105.0						-	-
-						-	-
-						-	-
-						-	-
_						_	_
110.0	110.0						110 feet bgs water sample:
			1.5		SANLI, (SW), same as above.		T=9.4 degrees C pH=7.20 cond=280
	111.5						1 13.2
						1	1
_						1	-
_						-	-
116.0						_	-
_						-	-
-						_	-
_						_	
_							
	120.0			-			



PROJECT NUNBER 107493.08.02

#### BORING NUMBER NW31-085

SHEET 5 OF 5

### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

# LOCATION Northeast Corner of Fairview Farms

ELEVATION \_

# DRILLING CONTRACTOR Staco Well Services

# DRILLING NETHOD AND EQUIPMENT Cable Tool with 8" Threaded Casing

WATER	ER LEVELS			•	START 11-28-98	FINISH	12-8-9	B LOGGER J. Bowker
зF		SAMPLE		STANDARD	SOIL DESCRIPTION			COMMENTS
depth belo Surface (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS B' -B' -B' (N)	SOIL NAME, USCS GROUP SYMBOL MOISTURE CONTENT, RELATIVE D OR CONSISTENCY, SOIL STRUCTU MINERALOGY	, COLOR, DENSITY JRE,		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	120.0 121.5		1.5		SAND, (SW), same as above.			Driller reports bailing gravels Soll sample MW-31I-1200-0 120 feet bgs water sample:
-								T=8.8 degrees C pH=7.07 cond=210 - F-=3.20 -
- 125.0 —							-	-
_							_	-
_							-	
- 1301							-	-
-							-	-
-							-	-
 136.0								-
-							-	-
_								-
140.0								-
-							-	
-							-	-
145.0 -								
-							-	-
-				-			-	-

	PROJECT NUMBER	BORING NUMBER	
	107.493.08.02		SHEET 1 OF 1
		MELL COMPLE HUN	
PROJECT Reynolds Metals RMC-Troutdale		LOCATION Northeast Con	ner of Fairview Farms
DRILING NETHOD AND EQUIDMENT Cable To	ol with 6" Threaded Casing		
WATER LEVELS	START 12-8-98	FINISH 12-9-98	LOGGER J. Bowker
0 GROUND SURFACE			
10	Concrete	8" ID Protective . Steel Casin	
30	B C	40 Basing	
40	It onlite Sturry Se	ameter Schedule threaded PVC C	
	Ber	2" di flush 1	
- EE - 00 (EE			
		PVC Screen	
80		2" diameter Schedule 40 ( 0.010 hch sl	
90	20X40 20X40 Silica Sand 1111111111111111	PVC sump	
100			
110	Bentonit Surry Seal		
120			See Boring Log For Drilling Details



PROJECT NUMBER 107493.08.02

BORING NUMBER NW37-012

SHEET I OF I

### SOIL BORING LOG

# PROJECT \_ Reynolds Metals -- RMC-Troutdale

### LOCATION South Wetlands; RR Dike on Old Existing Road

ELEVATION -

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# DRILLING CONTRACTOR GeoTech Explorations, Inc.

# DRILLING NETHOD AND EQUIPMENT Little Beaver HSA rig; 4 1/4-Inch I.D. Auger

WATER	WATER LEVELS				START 10-23-98	3-98 LOGGER T. Gehweiler		
зF		SAMPLE		STANDARD	SOIL DESCRIPTIO	N	COMMENTS	
JEPTH BELO	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	8" -8" -8" (N)	SOIL NAME, USCS GROUP SYMB MOISTURE CONTENT, RELATIVE OR CONSISTENCY, SOIL STRUC MINERALOGY	OL, COLOR, E DENSITY TURE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION	
		/			0-2 Feet: Grass and moss con surface. <u>SAND</u> , (SM), dark bri dense, 50% old brick fill, roots organics. Old roadbed.	vered own, damp, , vegetation, –	Callect Soil samples for TOC analysis at: 2.5 - 4 toot time: 900	
	4.0		0.9	1-2/12"	Water observed at 2.5 feet by 2.5-4.5 Feet: <u>SILT</u> , (MH), bro soft to soft, some orange-bro plastic	ls wn, wet, very wn mottling, 	4 - 55 toot time: 913	
5.0 -	5.5		1.0	1-2-3 (5)	4.5-5.3 Feet: <u>SILT WITH SANI</u> , gray, wet, soft, medium grained , decomposed yellow brick.	1, (ML), dark d sand, 10%		
-	7.5		1.5	3-3-3 (8)	5.3-9 Feet: <u>SANDY SILT</u> , (NL) wet, soft, mottled, not plastic. gray at 9 ft bgs.	, brown, Becomes	8 – 7.5 foot time: 930	
-	8.5					. 4		
- 10.0	10.0		1.5	1-2-1 (3)	9-12 Feet: <u>SANDY SILT</u> , (ML), soft, not plastic.	gray, wet,	8.5 - 10 foot time: 1000	
-								
_	12.5				12-12.5 Feet: <u>SANDY SILT</u> , (Mi wet, very soft, plastic.	l), gray, –	12.5 - 14 toot time: 1020	
-	14.0 14.5		1.5	1-1-1 (2)	isoft, plastic.	wet, very		
15.0	18.0		1.5	2-2-2 (4)	13-15 Feet: <u>SILTY SAND</u> , (SM), very loose, wet, fine grained, is vegetation.	gray, wet, ess than 1% 7	14.5 - 10 toot time: 1045 Driller reports slight odor at 7.5 feet. Hand dug hole from 0 - 2.5 feet.	
-					Total Depth = 18 Feet bgs with Feet bgs with auger	sampler; 15		
			,			-		
20.0 -						· _	<u>.</u>	
						]		
					N.,			
	:							
25.0					·	-	1	
-						-	. 1	
-						-	1	
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PROJECT NUNBER
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BORING NUMBER

SHEET 1 OF 2

### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

# LOCATION So. Wetlands; South of RR Dike on Old Exist. Rd.

ELEVATION \_

# DRILLING CONTRACTOR GeoTech Explorations, Inc.

DRILLING METHOD AND EQUIPMENT Little Beaver with 4.25-Inch I.D. HSA

WATE	TER LEVELS Approximately I Feet BGS		ELS Approximately I Feet BGS START 12-08-88 FINISH 12-09-88		1. Gall	
3F		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS B' -B' -B' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
					See MW37-012 Boring Log	
	-					4 4
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15.0 -	4				· _	4 _
						1
-	1					1 1
-					-	4 4
-					· · ·	4 4
20.0 -	20.0				SAND WITH SILT (SN) dark grav (N3)	Page sample recovery blow equate from
-			0.1	3-3-4	wet, loose, fine to very fine grained,	short stroke and lite hammer
	21.5					
	23.0				-	Driller reports possible sand contact
-				3-4-4	SAND WITH SILT, (SM), as above - pebble	approximately 22.5 feet bgs from change
-	24.5		0.1	ິ (8)		
25.0					-	-
-					-	
_	27.0					
			0.8	2-4-4	SANU WITH SILT. (SN), as above, 10-15% slit, sand fine to medium grained.	Soll sample MW37I-0270-0
	28.5			(8)		1
-	20.0			-	-	
	30.0					

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PROJECT NUNBER 107493.D8.02 BORING NUMBER MW37~030

SHEET 2 OF 2

#### SOIL BORING LOG

PROJECT Reynolds Netals -- RMC-Troutdale

LOCATION So. Wetlands; South of RR Dike on Old Exist. Rd.

ELEVATION .

DRILLING CONTRACTOR GeoTech Explorations, Inc.

DRILLING NETHOD AND EQUIPMENT Little Beaver with 4.25-Inch I.D. HSA

WATER LEVELS Approximately I Feet BGS START 12-08-98 FINISH 12-08-88 LOGGER I. Gall STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION COMMENTS S.L. SOIL NAME, USCS GROUP SYNBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY DEPTH BEL TYPE AND NUMBER RECOVERY FEET INTERVAL DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION 6" -6" -6" (N) 30.0 3-4-5 (9) SAND, (SW), dark gray (N3), wet, loose, fine to medium grained, trace silt and red 1.0 Total Depth = 30.5 Feet 31.5 grains. 36.0 40.0 46.0 50.0 65.0



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PROJECT NUMBER

BORING NUMBER

SHEET 1 OF 1

### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

LOCATION RMC Property, East of Waish Trucking

ELEVATION \_

DRILLING CONTRACTOR GeoTech Explorations, Inc.

DRILLING METHOD AND EQUIPMENT Mobile HSA rig; 8 5/8" Auger

WATER		S			START 11-01-98 FINISH 11-01-98	B LOGGER T. Gehweiler
*F		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS
JEPTH BELO	NTERVAL	I YPE AND VUMBER	TECOVERY EET	8' -8' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, NOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	10			-	0-I Feet: Crushed basalt road base	TOC soil samples collected at:
-	2.5		0.8	4-5-5 (10)	I-2 Feet: <u>SAND</u> , (SP), brown, damp, loose, tine grained, with less than 5% slit, trace	
-	4.0		1.5	4-8-9 (17)	2-5 Feet: <u>SAND</u> . (SW), brown, damp, loose, fine to medium grained with orange motiling and red sand grains (less than	2.5 - 4 teet time: 1405
6.0 -	5.5		1.5	8-8-7 (13)	10%).	5.5 - 7 teet time: 1415
-	7.0		1.4	3-2-2 (4)	. sols reet. <u>SALE</u> , (HL), brown, damp, medium stiff. 5.5-8.5 Feet: <u>SAND</u> , (SW), gray, brown, wet, kose, fine to medium grained, orange	-
-					8.5-7 Feet: <u>SILT</u> , (MH), brown, wet, soft, plastic, becomes gray at 7 feet.	
10.0 -					Total Depth = 7 Feet BGS 	
-					. 4	
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150 -		•			. –	-
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					· •	-
20.0 -						
					-	
					4	
					. 1	
25.0						-
-						
-				-	4	



PROJECT NUMBER BORING NUMBER 107493.06.02 MW38-035 SHEET 1 OF 2 SOIL BORING LOG PROJECT Reynolds Metals -- RMC-Troutdale LOCATION RMC Property, East of Walsh Trucking DRILLING CONTRACTOR GeoTech Explorations, Inc. ELEVATION \_ DRILLING METHOD AND EQUIPMENT HSA (10" O.D., 6.25" I.D.) Mobile Drill B-59 START 12-02-96 FINISH 12-02-96 LOGGER I. Gall WATER LEVELS STANDARD PENETRATION TEST RESULTS SAMPLE SOIL DESCRIPTION COMMENTS SE. SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, DEPTH BEL SURFACE RECOVERY TYPE AND NUMBER DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, INTERVAL 6" -6" -6" (N) TESTS AND INSTRUMENTATION MINERALOGY See MW38-7 for first 10 feet of log 5.0 10.0 10.0 <u>SILI</u>, (ML), medium dark gray (N4), wet, soft, trace orangics and very fine sand. 2-2-2 1.5 (4) 11.5 15.0 15.0 <u>SILT with SAND</u>, (ML), medium dark gray (N4), wet, soft, 15-20% very fine sand, trace organics. Soil sample MW38I-0150-0 1-2-1 1.4 (3) Driller reports formation appears to be 16.5 moderately permeable 17.5 SILT with SAND, (ML), as above. 2-2-2 (4) 1.0 19.0 20.0 20.0 SILT with SAND, (ML), as above, percent very fine sand increasing to 25-30%. 2-2-2 1.4 (4) 21.5 22.5 SILT with SAND, (ML), as above. 2-3-3 1.5 (6) 24.0 25.0 25.0 Soil sample MW38I-0250-0 SILT. (ML), medium dark gray (N4), wet, 2-3-3 (6) soft, trace organics. 1.5 26.5 27.5 SILI (ML), as above, to 28 feet - grades to <u>SAND with SILT</u>. (SM), medium dark gray (N4), wet, very loose, very fine to fine grained, 15-25% silt. 3-4-5 1.5 (9) 29.0 30.0



PROJECT NUMBER 107493.D6.02 BORING NUMBER MW38-035

SHEET 2 OF 2

#### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

#### LOCATION RMC Property, East of Walsh Trucking

ELEVATION \_

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# DRILLING CONTRACTOR GeoTech Explorations, Inc.

# DRILLING METHOD AND EQUIPMENT HSA (10" O.D., 6.25" I.D.) Mobile Drill B-59

\_\_FINISH 12-02-96 START 12-02-96 LOGGER I. Gall WATER LEVELS \_ STANDARD PENETRATION TEST RESULTS SOIL DESCRIPTION SAMPLE COMMENTS <u>S</u> SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, DEPTH BEL TYPE AND NUMBER RECOVERY FEET INTERVAL DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, 6" -6" -6" TESTS AND INSTRUMENTATION MINERALOGY (N) SAND, (SW), medium dark gray (N4), loose, wet, fine to medium grained, 10% silt, red 30.0 3-5-5 (10) 0.6 grains present. 31.5 32.5 SAND, (SW), as above except very loose. 2-3-3 0.5 (6) 34.0 35.0 35.0 <u>SAND</u>, (SW), as above, trace wood fragments. Soil sample MW38I-0350-0 1.0 3-4-4 36.0 (8) Total Depth = 36 Feet BGS 40.0 45.0 50.0



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PROJECT NUMBER

BORING NUMBER

SHEET I OF 4

### SOIL BORING LOG

# PROJECT Reynolds Metals -- RMC-Troutdale

# LOCATION FAIRVIEW FARMS 800' W OF WW31

ELEVATION ....

# DRILLING CONTRACTOR STACO WELL SERVICES

# DRILLING NETHOD AND EQUIPMENT FOREMOST DRILL - BARBER RIG W/ 8" CASING

WATER	TER LEVELS		START 8-23-97 FINISH 8-27-97 LOGGER ERIC BROBERG				
зF		SAMPLE		STANDARD	SOIL DESCRIPTION		COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS 8'-8'-6' (N)	SOIL NAME, USCS GROUP SYMBOL, MOISTURE CONTENT, RELATIVE D OR CONSISTENCY, SOIL STRUCTU MINERALOGY	, COLOR, DENSITY IRE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
5.0 -	5.0 8.0				0-2' cobble/gravel till for drilling Loamy topsoli <u>SILI</u> , (ML), brownish gray (5yr., wet, mottled appearance, trace organics/roots <u>SAND WITH SILT</u> , (SM), pale bro 5/2),soft, wet, some mottling, 303	) pad 	5" of soll cored with casing during plumbing of casing FIO = 3ppm PID = BKGRD Soil and water samples collected below 5' with sieve and bowl at cyclone
	9.0					-	
10.0	10.0				<u>SILI</u> , (ML), dark yellowish brown 4/2), wét, soft, plastic	(iUyr.,	–
- - - - - - - -							
- 20.0 -	21.0 22.0				<u>SILT WITH SAND</u> (ML), dari yellow (10yr., 4/2), wet, sott, 20-25% fil grained sand, subangular grains	- Nsh brown - ne -	- - - - - - - - - - - - - - 
- 250 - - - -							

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		·		• •	PROJECT NUNBER 107493.06.02	BORING N MW39-095		-
СНМ	HILL			•	SOIL	BOR	ING LOG	
PROJE	CT Rey	nolds M	etals	- RMC-Troutdal	LOC	ATION FAI	RVIEW FARMS 800' W OF WW31	
ELEVA	TION		ID EQUI	PNENT FOREMO	DRILLING CONTRACTOR STACO	WELL SER	VICES	-
WATER	LEVEL	S			STARTFIN	ISH <u>8-27-</u>	-97 LOGGER ERIC BROBERG	-
æĒ		SAMPLE	E	STANDARD PENETRATION	SOIL DESCRIPTION		COMMENTS .	
DEPTH BEL(	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	ΤΕST RESULTS θ' -θ' -θ' (N)	SOIL NAME, USCS GROUP SYMBOL, COL MOISTURE CONTENT, RELATIVE DENSI OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	OR, ITY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION	
		·						
-						- - -	Water sample at 35' BGS	1
35.0 - -								
-						-		-
. <b>40.0</b>	40.0							1
-					<u>SAND</u> , (SW), dark gray (N3), wet, loos fine to medium grained, red grains, organics (wood), 5–10% fine, subangu grains	se, - Iar - -		1
- 45.0						-		
-						-	•	
- 50.0							Water sample at 50' BGS F = 0.115ppm	
-						1	-	, ,
- 55.0 —	58.0				<u>SAND</u> , (SW), as above, with mica flake	s	_	1 6
	57.0						-	4 X
_						-	· · -	- 22

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сым	407		-		PROJECT NUMBER BO 107493.08.02 MW	0 <b>RING NU</b> 139-095	NHBER SHEET 3 OF 4
			• -		SOIL	BORI	NG LOG
PROJE	CT Rey	nalds Ne	etals	- RMC-Troutdale	LOCATI	ION FAIR	IVIEW FARMS 800' W OF WW31
ELEVA	TION _				DRILLING CONTRACTOR STACO WE	LL SERV	ICES
DRILLI	NG NET	HOD AN	o equi	PMENT FOREMO	ST DRILL - BARBER RIG W/ 8" CASING		
WATER	LEVEL	S		1	START_0-23-97FINISH	H	LOGGER ERIC BROBERG
₹Ē		SAMPLE	r	STANDARD PENETRATION	SOIL DESCRIPTION		COMMENTS
王 王 と	AL		Rγ	RESULTS	SOIL NAME, USCS GROUP SYMBOL, COLOR,	,	DEPTH OF CASING, DRILLING RATE,
TY	ERV	9 19 19 19		0' -6' -8'	OR CONSISTENCY, SOIL STRUCTURE,		DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
ШЭ			(N)	MINERALOGY		· · · · · · · · · · · · · · · · · · ·	
		·					
	].						
-	1					1	
	1					. 1	•
-	ł					4	
<b>65.0</b> —	85.0			·	SAND, (SW), same as above	·	·
-	66.0						·
					· ·	_	-
-	1					1	-
-		· ·				-	· · · ·
70.0						·	· · ·
-						-	-
-						_	4
							Water sample at 70° BGS F = 0.072ppm
	75.0					1	
75.0	15.0				SAND, (SW), same as above	-1	
-	78.0					4	-
-						-	-
_							
						1	
80.0						. –	
-						-	†
-						-	-
_						_	· 4
80.0 -					<u>SAND</u> , (SW), same as above	. –	Water sample at 85' BGS F = 0.101ppm
-						-	1
-						-	+
-				-		-	+

CHM	HILL

PROJECT NUNBER	
107 493.08.02	

#### BORING NUMBER MW39-095 SHEET 4 OF 4

### SOIL BORING LOG

# PROJECT Reynolds Metals -- RMC-Troutdale

# LOCATION FAIRVIEW FARMS 800' W OF WW31

# DRILLING CONTRACTOR STACO WELL SERVICES

# DRILLING METHOD AND EQUIPMENT FOREMOST DRILL - BARBER RIG W/ 6" CASING

ELEVATION \_

WATER	LEVEL	S			START 8-23-97 FINISH 8-27-97 LOGGER ERIC BROBERG
жF		SAMPLE		STANDARD	SOIL DESCRIPTION COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	RESULTS 8' -0' -0' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY
					<u>SAND</u> , (SW), same as above
- 95.0 —					End of boring at 95'
-					
- 100.0					
- - - 105.0 - -			•		
- - tt0.0 - -					
- 115.0  -					
- -					



### MONITORING WELL RECORD DRAWING & CONSTRUCTION LOG



\* DEPTHS ABOVE/BELOW GROUND SURFACE

MW-41.DWG



PROJECT NUMBER : 107493.D6.02 WELL NUMBER : MW41-033

### WELL CONSTRUCTION/BORING LOG

PROJECT : RMC - TROUTDALE		LOCATION : NW SIDE OF ENGINEERING DRILLING CONTRACTOR : GEOTECH EXPLORATION, TUALATIN, OREGON				
ELEVATION : MPE = 28.71' / GSE = 29.1'	DRILLING					
DRILLING METHOD AND EQUIPMENT US	ED : 11" OD; 6.5"	HSA, ID B59 MOBILE DRILL	LOGGER: EMB			
	51AH1 : 0/12/9/	END: 6/13/9/				
Deal In December Casing 	E Contraction of the second strain of the second st	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION			
Cement Grout		CONCRETE				
		GRAVELLY SAND (SW), pale brown (5YR 5/2) damp, loose, fine to medium grained sand with >15% fine to coarse gravel, less 5% silt	- - LAB Sample: 1510 - MW41-0050-16397-0			
	1.4 6-8-14 (22)	SAND (SW), pale brown (5YR 5/2) damp, fine to medium grained, loss 5% silt	PID = 33 ppm FID = acgrd LEL = ND - Dust = 0			
_ (_) 10		SAND WITH SILT (SW-SM.), pale brown (5YR 5/2) to pale medium brown (10YR 5/4), wet yellow, very fine grained, loose, 20-25% silt				
	1.4 4-3-3 (6)					
15 _	1.5 3-4-5 (9)	SILT (ML), medium gray, wet, solt, plastic, some	LAB Sample: 0830 - MW41-0160-16497-0			
	1.5 2-2-2/(4	) SILI (ML), same as above				
20	1.5 <del>4-6-</del> 7 (13)					
	1.5 10-11-14 1.5 (25)		-			
25      	10-10-10 (20)	SAND (SM.), dark yellowish brown (10YR 4/2), wet loose, fine to medium grained, some mica 5% silt	-			
		SAND (SM.), same as above	-			



PROJECT NUMBER : 107493.D6.02

WELL NUMBER : MW41-033

SHEET 2 OF 2

### WELL CONSTRUCTION/BORING LOG

PROJECT : RMC - TROUTDALE						LOCATION : NW SIDE OF ENGINEERING				
ELEVATION : MPE = 28.71' / GSE = 29.1'						DRILLING CONTRACTOR : GEOTECH EXPLORATION, TUALATIN, OREGON				
DRILLING METHOD AND EQUIPMENT USED : 11" OD; 6.5" HSA, ID B59 MOBILE DRILL										
WATER	LEVE	LS :			STAR	: 6/12/97	END : 6/13/97	LOGGER: EMB		
DEP IH B  	ELOW	SUHFACE (F1)	Interval	Type and Number	Recovery (ft)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION		
_ 33_  35	0X40 Silica Sand	ameter Schedule 40	31.5		1.4	8-10-10 (20) 10-10-12 (22)	<u>SAND</u> (SM.), same as above <u>SAND</u> (SM.), same as above	LAB Sample: 1615 - MW41-0310-16397-0		
-	N	2* dia					End of Boring @ 35.0' bgs	:		
-							Well Developed on 06/19/97	Start Card # = 100164		
( )-							Borehole diameter = 11" to 35.0' bgs	Tag # L05780		
CHM HILL

# PROJECT NUMBER

BORING NUMBER

MW43-027/MW43-015 SHEET I OF I

#### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale LOCATION NE SIDE OF ENGINEERING BUILDING DRILLING CONTRACTOR GEOTECH ELEVATION . DRILLING NETHOD AND EQUIPMENT 11" O.D. 6.5"ID, 8-59 MOBIL DRILL FINISH \_\_\_\_\_\_97 START 6-13-97 LOGGER ERIC BROBERG WATER LEVELS STANDARD PENETRATION TEST SAMPLE SOIL DESCRIPTION COMMENTS ₽Ē DEPTH BEL SOIL NAME, USCS GROUP SYMBOL, COLOR, TYPE AND NUMBER RECOVERY FEET RESULTS DEPTH OF CASING, DRILLING RATE, **INTERVAL** MOISTURE CONTENT, RELATIVE DENSITY DRILLING FLUID LOSS. 6' -6' -6' OR CONSISTENCY, SOIL STRUCTURE, TESTS AND INSTRUMENTATION (N) MINERALOGY 4" asphalt GRAVELLY SAND, (SW), gray brown (5yr., 3/2), damp, loose, fine, medium grained 15% fine /// gravek, less than 5% silt Lab sample: 1330 MW43-0050-18497-0 FID = 0.25ppm 550 5.0 <u>SAND</u>, (NL), pale brown (5yr., 8/2), damp, loose, fine to medium grained <5% silt, PID = 24ppm LEL = ND 21% 02, 0% Pentane 12-15-8 1.3 (23) subangular grains 8.5 Dubt = 010.0 10.0 SILT. (ML), dark yellowish brown (lOyr., 4/2), wet, firm, plastic mottling, with Lab sample: 1410 2-3-2 W43-0110-18497-0 1.5 (5) worm/root holes 11.5 13.5 <u>SILT</u>, (ML), as above 4-3-2 1.5 (5) 15.0 15.0 <u>SILT WITH SAND</u>, (ML-SW), moderate yellowish brown (10YR., 5/9), firm, orange mottling, 20%-25% very fine sand 2-3-5 (83) 1.5 18.5 17.5 <u>SAND</u>, (SW), dark yellowish brown (lOyr., 4/2), wet, loose, mica tlakes, 5% silts, 3-5-18 1.5 (23) subangular grains 19.0 20.0 8-7-13 SAND, (SW), brownish gray (5yr., 4/1), 1.5 (20) wet, loose, mica flakes 21.5 25.0 25.0 SAND, (SW), same as above Lab sample: 1120 MW43-0280-18497-0 7-10-18 1.5 (28) 28.5 SAND, (SW), same as above Total depth 29.0' BGS

	PROJECT NUMBER	BORING NUMBER	
	107483.08.02		SHEET I OF
	1		
PROJECT Reynolds Metals RMC-Troutdale		LOCATION NE SIDE OF E	NGINEERING BUILUING
ELEVATION	.5"ID, 8-59 MOBIL DRILL	STOR	
WATER LEVELS	START 0-13-97	FINISH 0-13-97	LOGGER ERIC BROBERG
· ·		,, ,,,,,	
-		Ŧ	
0 GROUND SURFACE		active	
Expanding Lock	roudete	- Flush Mount Prote	
5		δο ·	
	14"	PVC Casing	
	- Hole plug 3	2" Diameter S. Threaded	
(FEET)			
20 -			
25 —	20/40 Slica Sand	utalinetic schedule 40 Well Screen (0.010-Inch Slot)	•
30		40 PVC Sump	See Boring Log For Drilling Details



#### PROJECT NUMBER 107493,06.02

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#### BORING NUMBER

MW44-027/MW44-011 SHEET 1 OF 1

#### SOIL BORING LOG

PROJECT Reynolds Metals -- RMC-Troutdale

# LOCATION EAST SIDE OF BAKEHOUSE

ELEVATION \_\_\_\_

# DRILLING CONTRACTOR GEOTECH

#### DRILLING NETHOD AND EQUIPMENT II" O.D. HSA 8.5"ID, B59 MOBILE DRILL a 10 07

WATER	LEVELS	S			START	LOGGER ERIC BROBERG
зF		SAMPLE		STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BELO SURFACE (F	INTERVAL	TYPE AND NUMBER	RECOVERY FEET	6' -6' -6' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
					Surface – sand/gravel till - - -	Sampling with 3" "Callfornia Modified" split spoon - -
50	550					
- LU	Ø.5		1.5	5-4-4 (13)	SAND, (SW), pale brown (5yr., 4/2), damp, loose, fine to very fine-grained <u>SAND</u> <u>WITH SILT</u> , (SW-SM), at 6', damp, loose, fine grained	
-	7.5					Soil PID = 21ppm
-	9.0		1.5	2-3-4 (9)	- <u>SILT,</u> (ML), pale yellow-brown (iOyr., 8/2), wet, firm, orange mottling, worm at root -	Soli FILI - Background LEL - ND
10.0 -					holes	· · · · · · · · · · · · · · · · · · ·
-						
					<u> </u>	Decomissioned
-	15.0					VILE NI
RU	18.5		1.4	4-8-10 (22)	<u>SAND</u> , (SW), moderate yellow brown with orange (10yr., 5/4), wet, firm, tine to medium grained, mica ilakes, 5% silt,	2004, -
-	17.5				subangular grains - 	1
-	19.0		1.5	8-17-20 (45)	8/2), wet, firm tine to medium grained, mica flakes, subangular grains	
20.0 —	20.0				SAND, (SW), light olive gray, (5yr., 5/2),	-
-	21.5		1.4	8-14-20 (40)	fine to medium grained, mica flakes	
	22.5					
-	24.0		1.5	4-6-8 (18)	SAND, (SW), olive gray (5yr., 3/2), wet,	
25.0 -	25.0				fine to medium grained, mica flakes, subangular grains	
-	28.5 27.0	·····	t.5	· 8-10-12 (30)	SAND, (SW), same as above	
-	28.5		1.5	8-9-12 (29)	<u>SAND</u> , (SW), same as above -	Total depth 27.5' BGS
_					-	-

CHM HILL

## PROJECT NUMBER BORING NUMBER

107493.00.02

SHEET I

0F

#### WELL COMPLETION LOG

MW44-011











PROJECT NUMBER : 107493.D6.02 WELL NUMBER : MW48-055

## WELL CONSTRUCTION/BORING LOG

DRILLIN	NG METHOD AND EQ	UIPME	NT US	SED : A	IR ROTARY		· · · · · · · · · · · · · · · · · · ·
WATER	RLEVELS : 17.77			STAR	: 8/28/97	END : 9/2/97	LOGGER: R. KAZMIEKZAK
DEPTH	BELOW SURFACE (FT)	1			STANDARD	SOIL DESCRIPTION	COMMENTS
	protective casing	lerval	pe and Numbe	icovery (ft)	TEST RESULTS 6*-6*-6*	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE,	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
0		Ē	F	Ř	()	MINERALOGY	
	- C	ement G 5.0 6.0	irout			SAND (SW), grayish brown (5YR 3/2), dry to damp, loose, fine to medium grained, thin lamina of silty,	<ul> <li>Spud-In with 6* hole</li> <li>Soil from cyclone, collected with SS bowl, logged from cuttings</li> </ul>
						subangular grains	-
		14.0				·	
15 _ _		15.0				<u>SILT (ML)</u> , dark yelkowish brown (10YR 4/2), wet, soft, 10% fine grained sand	<ul> <li>Drive casing to 15.0'</li> <li>-</li> </ul>
20							Water @ 20.0'  
- 25 - - - -		<u>24.0</u> 25.0				SAND WITH SILT (SW-SM), brownish gray (5YR 4/1), wet, very loose, fine grained sand, subangular grains	<ul> <li>Soil from cyclone, drive casing to 25.0'</li> <li>-</li> <li>-</li></ul>



PROJECT NUMBER : 107493.D6.02 WELL NUMBER : MW48-055

SHEET 2 OF 2

#### WELL CONSTRUCTION/BORING LOG

PROJECT : RMC - TROUTDALE		LOCATION : NO. SIDE OF CASTHOUSE				
ELEVATION : MPE = 28.19' / GSE = 28	8.4'	DRILLING CONTRACTOR : STACO, TROY REYNOLDS				
DRILLING METHOD AND EQUIPMENT	USED : AI	RROTARY				
WATER LEVELS: 17.77	START	: 8/28/97	END : 9/2/97	LUGGER: R. KAZMIERZAK		
	Type and Number Recovery (ft)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCHIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION		
			SANDY SILT (ML), dark gray (N3), wet, loose, fine grained sand, trace mica, red grains			
55 <u>55,0</u>			SAND (SW), as above	- · ·		
			End of Boring @ 55.9' bgs Borehole diameter = 6" to 56" bgs	Well developed on 9/02/97.		
_				-		

PROJECT NAMERMC-TROUTDALE	PROJECT NO. 107493.06.02
WELL NO. MW51-069 FIELD OBSERVERS _	SMKREKOS
ELEV, NGVD (top of well casing)26.17	SURFACE ELEV, NGVD $23.4$
WATER LEVEL ELEV/DATE, NGVD	START DATE <u>11/3/97</u>
DRILLING CONTRACTORGEOTECH	FINISH DATE _11/3/97
DRILLING METHOD 6" HSA/LOCATION: NOR	THWEST, ADJACENT TO RIVER



MW-51.DWG

Сюлин				PROJECT NUMBER BORING 153269.04.04.03 MW	NUMBER 54-050 SHEET   0
C		•**	· .	SOIL BO	RING LOG 9/18/00
	 DN		nvestiga	FIDA LOCATION LOCATION DRILLING CONTRACTOR Geo Tec	10' Nest 6-P77
WATER L	EVELS			START <u>9:20</u> FINISH	10:50 LOGGER M. Lezce
ð£ -	SAM	PLE	STANDARD	SOIL DESCRIPTION	COMMENTS
DEPTH BEL SURFACE (	INTERVAL NUMBER	ANU 1YPE RECOVER) (FT)	TEST RESULTS 6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING. DRILLING RATE. DRILLING FLUID LOSS. TESTS AND INSTRUMENTATION
10 10 15 15 20 15 25 1 15	2% % % % % %	1.25	9/10/18 9/12/19 9/12/19 8/9/12 3/14/4	Sand/SP/Brown-brey/Wet 1005e / Med-grained Silt/Mel/brown/Jamp/Stitt/ Joiphisticity Sand/SP/Brown-grey/wet/loose Silt/Mel/brey-Green/Damp SHtifffisogrey black Malltjing	No Sample No Sample 11.5 Blough? Slough Slough Drill to 30' No isample
1	Ø	15		Sondy-Silt last Linen Lievi	Sumple 29-30/2
30	¥•		212/4	Moist / 55% sand / course grained	REV 11/89 FORM D1586

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BORING NUMBER PROJECT NUMBER SHEET - 1 Mw 54 Ζ 0 SOIL BORING LOG LOCATION West of GP77 PROJECT DRILLING CONTRACTOR ELEVATION DRILLING METHOD AND EQUIPMENT START WATER LEVELS FINISH LOGGER SAMPLE COMMENTS SOIL DESCRIPTION VOJ LOV STANDARD PENETRATION TEST DEPTH BEL NUMBER AND TYPE RECOVERY (FT) SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT. RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE. DEPTH OF CASING, DRILLING RATE. NTERVAL RESULTS DRILLING FLUID LOSS TESTS AND INSTRUMENTATION 6"-6"-6" MINERALOGY (N) Sandy-Sill/SP-HABrown-Grey/ Let/ loose med grained. 1.5 ø 2-2-3 35 Silt I ALL & Grey-Green/ moist Slightly illestic ø 1.5 2-3-4 Sandy-Sill/SP/14/ Grey / Wet/loose becoming less silly med grained / fine grained Ø 1.5 4-5-9 Sand/Semi/Grey - Black/wet \_ Top of UGS @ 37.5' Med grained 1-2-3 ø 1.5 40 đ 1.5 2-3-5 45 7-9-12 Sand/SW/Grey - Black/wet - UGS Wed-grained. ø 1.5 ø 50 12-29-35 Sand/SW/brey -Black/wet-UGS 1.5 med-grained EOB 50 " @ 10:50 9/18/2000

REV 11/89 FORM D1586



PROJECT NUMBER:

WELL NUMBER: MW54-050

153269.04.04.03

SHEET 1 OF 2

## WELL CONSTRUCTION/BORING LOG

PROJEC	T: RMC	- Troi	utdale	(SLF	Inves	tigatior	1)	LOCATION : 10' West GP7	7 - South Landfill			
ELEVAT	ELEVATION (feet): MPE = 30.09 / GSE = 26.97 DRILLING CONTRACTOR: GeoTech DRILLING METHOD AND EQUIPMENT USED : HSA 6-5/8"											
DRILLIN	IG METHO	DD AM	1D EQU	JIPME	NT US	SED :	HSA 6-5/8"					
WATER	LEVELS					STAR	r:9/18/00 @ 9	20 END : 9/18/00 @ 10:50	LOGGER: M. Leece			
DEPTH TOC 3 - -	BELOW SU @ 3' above steel ca	JRFA( grnd su p w/ loc	CE (FT) urface :k	erval	pe and Number	covery (ft)	STANDARD PENETRATION TEST RESULTS 6°-6°-6°	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE,	COMMENTS DEPTH OF CASING (ft bgs), DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION			
0				Ę	Ę	Å	(N)	MINERALOGY				
	locking cap		Bentonite Slurry steel monument	15'		1.25 1.5 1.5 1.5	9-10-18 9-12-9 8-9-12 3-4-4 3-4-4	Sand (SP) brown-grey, wet, loose, medium grained Silt (ML) brown, damp, stiff, no plasticity Sand (SP) brown-grey, wet, loose Silt (ML) grey-green, damp, stiff, some black mottling Silt (ML) grey-green, damp, stiff, some black mottling	<ul> <li>No Sample</li> <li>@ 11.5</li> <li>@ 15'</li> <li>Drill to 30'</li> <li>No Sample</li> <li></li></ul>			
		12										

.



PROJECT NUMBER:

WELL NUMBER: MW54-050

153269.04.04.03

SHEET 2 OF 2

## WELL CONSTRUCTION/BORING LOG

PROJECT: RMC - Troutdale - SLF Investigation LOCATION: 10' West of GP77 - South Landfill										
ELEVATION (feet): MPE = 30.09/GSE = 26.97 DRILLING CONTRACTOR: GeoTech										
DRILLING METHOD AND EQUIPMENT USED: HSA 6-5/8										
WATER	LEVELS:			STAR	Г:9/18/00 @	9:20 END: 9/18/00 @ 10:50	LOGGER: Mark Leece			
DEPTH  	BELOW SURFACE (FT)	iterval	ype and Number	acovery (ft)	STANDARD PENETRATION TEST RESULTS 6"-6"-6"	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE,	COMMENTS DEPTH OF CASING (It bgs), DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION			
30		1	4	e 1.5	3-3-4	MINERALOGY Sandy-Silt (ML) green-grey, moist, <5% sand,				
	and					coarse grained				
35	20-40 s			1.5	2-3-4	Sandy-Silt (SP-ML) brown-grey, wet, loose, medium grained	-			
	"			1.5	4-5-9	Silt (ML) grey-green, moist, slightly plastic	-			
				1.5	1-2-3	Sandy-Silt (SP-ML) grey, wet, loose, becoming less silty, medium grained/fine grained	- - -			
40	L H			1.5	2-3-5	Sand (SP-ML) grey-black, wet, medium grained	Top of UGS @ 39.5' bgs			
45	sand						- -			
	16-20 (111111111111111111111111111111111111			1.5	7-9-12	Sand (SW) grey-black, wet, medium grained	_ UGS 			
50				1.5	12-29-35	Sand (SW) grey-black, wet, medium grained	UGS			
-						EOB 50' bgs @ 10:50 on 9/18/00				
						Well Development: 10/3/00				
						-	-			

								ARER	
	CHAM	HILL					P217-03	9/ P217-019 SHEET 1	OF2
							SOIL BORIN	IG LOG	90 A
}	PROJE	CT R	me	Trou	tdul		LOCATION 66	west of MW46	
	ELEVA						o-Tech (K	eith Victor)	
	DRILLI	NG METI	HOD AN	d Equi	PMENT Ge	·probe Unit			
	WATER	T	S		j	START 10/24/97	FINISH 029	97 LOGGER Ochs / Bo	when
	Low	·	SAMPLE	=   >	STANDARD PENETRATION	SOIL DESCRIPTION		COMMENTS	
	DEPTH BE SURFACE	INŤERVAL	NUMBER AND TYPE	RECOVER (FT)	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYN MOISTURE CONTENT, RELATI OR CONSISTENCY, SOIL STRU MINERALOGY	ABOL, COLOR, VE DENSITY CTURE,	DEPTH OF CASING, DRILLING & DRILLING FLUID LOSS. TESTS AND INSTRUMENTATION	RATE,
	2 -	X				Surface-Gravel + sand, F	ill material		
	· -	[X]				Sand (SW) Pale Brown, Damp medium to fine grained subrounded 5% finer.	loose, grain		
	6 -	Х				Silt (ML) Pate yellow Brown Moist, net. stiff. orange motiling	prient -		-
	• •0	Д				Silt (ML) Pale Yellow Brown, w Low plusticity, Frieble, orange PU File grained sard.	et, med skff_ mething.		
}	   •• -	$\mathbb{V}$				Sand (SW) Bate Brown to Day Brownish bray (54R 411) = to se, fike to mad. grained. si	the maist		
	-					graine had graine.	- -		, <sup>,</sup>
		$\bigvee$				S, It (ML) Dould grow (NQ) wet orange mothing, made Plasticity	md staff.		- 
	- 	-//		-		Silt (ME) Date bray (194)	forething to		
	18 -	$\langle /$	~			16A-10A. s. 11(ML) yellowich wet, med stiff. Frieble, low true - ryanic metaical.	brow - plusticity _		
	-	Ň				18-20 Ft. S. H(ML) mud Gray (A malstiff. Store five quaived Grange nottling.	14) wet, -		
	23				2	med SHIF- med planticity No	sarD -		] a
		$\mathbb{V}$				brown (67R4/2), & and stift Sind Avegraiped.	F. 5-10%		_]
:	-	/			,	25% Son D, Fine yalked			-
						Brownish Cry - Hedging. 20%. Sitt-mad to low platterity. saws f	m) fines, wet fine to medium		-]

(8.30)

CHAMHILL

PROJECT NUMBER	BORING NUMBER		
	P217-039/P217-019 SHEET	1	OF2

### SOIL BORING LOG

PROJEC	T R	me	Trout	tdul	LOCATION 66	west of MW46			
ELEVAT	DRILLING CONTRACTOR Geo-Tech (Keith Vichs)								
DRILLIN	DRILLING METHOD AND EQUIPMENT Geproke Unit								
WATER	LEVELS	S		·	START 10/24/97 FINISH 10/29	197 LOGGER Ochs Bow Ker			
3F		SAMPLI	=	STANDARD	SOIL DESCRIPTION	COMMENTS			
DEPTH BELO SURFACE (F	NTERVAL	NUMBER AND TYPE	RECOVERY (FT)	results 6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE. DRILLING FLUID LOSS. TESTS AND INSTRUMENTATION			
	$\overline{\mathbf{X}}$				Surface - Gravel + sand, Fill material				
	$\mathbf{X}$				Sand (SW) Pale Brown, Dump loose, Medium to fine grained, subrounded grain. 5% finer.	-			
6-	Х				Silt (ML) Pate yellow Brown, mak. Moist, Met. stiff, orange moltling present	·			
- 90	Д				Silt (ML) Pale Yellow Brown, wet, med staff Low plusticity, Frieble, orange matting. Db file grained sard.				
- ••	$\bigvee$				Sand (SW) Bate Brown to Dork - Brownish bray (SYR 911) The Maist bose, five to red. grained. Subargular grainer. Rad grainer.				
13	$\square$								
-	$\bigvee$				S, It (ML) Dock gray (NG) wet med staff. srank mothing . mad Plusticity -	- - -			
				•	Silt (mb) Dectorer (123) Allor they to yellowish to wet, stiffer orange				
18 -	$\bigvee$	_			wet, med stiff. frieble, low plasticity - trace organic methial.	· _			
-					malstiff. Stolly five quilled rand Grange not ling.	-			
23				4	med thiff. not planticity No sand - 22-26ft. Silt. (MLJ-SH) Dark yellowish -				
_	χI				brown (67R412), & and stiff. 5-10% Sind Five grained, ught und by (05) 26-28 ft. (m) Durk Vallan Brown wet	·			
28	$\square$				25% SOND, FINE YOLHAD	· _			
-					Brown ish Gray - Hed gray. 20% fines, wet silt-mad to low plasticity, scamp fine to medium				

(8.30)

Сканни	PROJECT NUMBER BORING NU P217-03	JMBER 19/PZIZ-DIA SHEET 2 OF 2
	SOIL BORI	NG LOG
PROJECT RMC Trow Have ELEVATION DRILLING METHOD AND EQUIPMENT (TROPPO	DRILLING CONTRACTOR Ges-Tech (K	west of MW46 eith Vidos)
WATER LEVELS	START 10/29/97 FINISH 10/29	197 LOGGER Ochs/Bosky
SAMPLE STANDARD PENETRATION	SOIL DESCRIPTION	COMMENTS
LEST BEPTH BEL SURFACE ( NUMBER AND TYPE (FT) (N) (N) (N) (N) (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE. DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
31	Sand uls itt (SM) Brownish bray (Syr 9/1) wet. 30% Awe. wed. cliff sand-med to Fire grained _ loose, subrounded grains. Rod gains. precent.	
	Sand (Sw) Dark bray (N9) wet loore, Five to medium grained. Subroundod -> subrangular graine. Red graine	· . 
	Sand (SW) same as above -	
3 B	Sand (SW) Fame as above	-
	END of Boring 40 Ft BGS.	
	-	-
		· · · · · · · · · · · · · · · · · · ·
	-	. * -
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	-	-
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MONITORING WELL RECORD DRAWING & CONSTRUCTION LOG PROJECT NAME RMC Trattale PROJECT NO. 107493. DG.02 WELL NO. PZ-17 Deep FIELD OBSERVERS GVO ELEV, NGVD (top of well casing) \_\_\_\_\_\_ SURFACE ELEV, NGVD \_\_\_\_ WATER LEVEL ELEV/DATE, NGVD\_\_\_\_\_\_ START DATE 10/29/97 DRILLING CONTRACTOR Geo-Tech FINISH DATE 10124197 DRILLING METHOD Geopobe Unit TOP CAP -WELL CONSTRUCTION MATERIALS PROTECTIVE SURFACE FT # CASING FT BOREHOLE DIA(S) \_\_\_\_\_ INCHES TO \_\_\_\_\_FT BGS -FLUSH MOUNT GROUND SURFACE --- INCHES TO \_\_\_\_\_FT BGS W/BOX SURFACE SEAL - INCHES TO \_\_\_\_\_FT BGS FT PROTECTIVE CASING TYPE WA / PVC Picho PROTECTIVE CASING DIAMETER ANNULAR SEAL-WELL CASING TYPE \_\_ DIAMETER\_ COUPLING TYPE FWSh Three SCREEN TYPE GWADIO DIAMETER 1.5"00 SLOT SIZE \_\_\_\_\_ SCREEN LENGTH 3'-0" TOP CAP TYPE Flush mount w BOX WELL CASING END CAP/PLUG TYPE \_\_\_\_\_ CENTRALIZER TYPE CENTRALIZER LOCATION(S) \_\_\_\_ FILTER PACK TYPE Silice Send GRADATION FILTER PACK VOLUME Pressiled Screen FT SEAL(S) BENTONITE SEAL -SURFACE \_\_\_\_\_\_VOLUME \_\_\_\_ ANNULAR \_\_\_\_ CENTRALIZER . FT BENTONITE\_\_\_\_\_VOLUME 36.2 FT BACKFILL \_\_\_\_\_\_VOLUME \_\_\_\_\_ FILTER PACK WELL DEVELOPMENT WELL SCREEN . DATE \_\_\_\_\_

METHOD \_\_\_\_\_

COMMENTS \_\_\_\_\_

CENTRALIZER SUMP END CAP/PLUG BACKFILL TD

#### NOT TO SCALE

■ DEPTHS ABOVE/BELOW GROUND SURFACE

WELLINST.DWG

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Clau					PROJECT NUMBER	BORING NU PZ18-0	MBER 040/P210-023 SHEET 1 OF	2
					sc	DIL BORIN	NG LOG	
	ION	nz -	Trost	dule	DRILLING CONTRACTOR	Tech (	' South of MW45 Kieth Vider)	
WATER	LEVELS	S			START 10/30/97 FI	NISH 10/30	147 LOGGER achs/Bowke	1
ØF.		SAMPLE		STANDARD	SOIL DESCRIPTION		COMMENTS	
DEPTH BEL SURFACE (F	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)	TEST RESULTS 6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBO MOISTURE CONTENT, RELATIVE D OR CONSISTENCY, SOIL STRUCTU MINERALOGY	DL, COLOR, DENSITY JRE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION	,
	·				Sand (SW) Gray BROWN Do	amp [		
					loose, medium to Five grain.	ed _		
						_		
4 -						-		
5 -	$\setminus/$				- Baria wisilt . (Sm) Darth Brown	N TOYRAIZ		
	X				transitioning to Dank brougish Brow	· IOYR 912		
	$/ \setminus$				mit- fine grained, subary 11.	- quin -		
8 -	( )			$\neg$	sit a loose sand.	wet have		
	$\bigvee$				Don't Gray (19) Redgining suba	nguler		
	$\cdot$				Sitting (The)	_		
12 7	$\square$		$\overline{}$		TOP 3. SFt as above (SM) Bottom, SFt. Silt wy Sand (ML) vellowith orange most - wat and	elachter ha		-
	$\setminus /$				- 20% fin grained sared.			-
	X				losse, Little to us fire, Fed grain Sobangular grain.	a present.	. ·	
	$/ \setminus$					_		-
	$\bigvee$				Sarah (Sw) as about	-		-
1.					SILE(NI) DEV ( TILL)			-
-	$\setminus$				and stiff, 25% five greined	wet_		-
2	~				medto plasticity.			
						. –		-
-						-		_
						vet, and the	iff.	-
29 -	$\checkmark$			•	5. It up Land (Mt) Brown 10%R Slight orange moliling present.	15% -		
	$\frown$				fine grained rand	_		_
						_		
						-		
						-		-

Снямниц						PROJECT NUMBER 107993.D6.02	BORING NU PZ 18-0	MBER 10/P218-023 SHEET 2 OF 2
						SC	IL BORI	NG LOG
)	PROJE	CT R	MC	Ta	atta	DRILLING CONTRACTOR Ges	ration <u>Bo</u> Tech (K	o' South of MW45 eith Vidos)
	DRILLIN WATER	IG MET	HOD AN S	id Equi	PMENT Cres	START 10/30/97 FI	NISH 10/30	197 LOGGER Ochs/ Bowker
	3F		SAMPŁ	E	STANDARD	SOIL DESCRIPTION		COMMENTS
	DEPTH BELO SURFACE (F	NTERVAL	NUMBER AND TYPE	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBO MOISTURE CONTENT, RELATIVE I OR CONSISTENCY, SOIL STRUCTU MINERALOGY	l, color, Density Ire,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
3	-	XX				Silt (ML) wy Send. Top 1.8 Congrist Brown WYR 5/2 Bo Dunk long (19). 10% File qualies Sand (Sw) Dark Gray Wet loose, File to med. gr	Ft: Hom.2Ft. L sent. NA) - arred -	<u>-</u>
	-	XX				sub rounded grains. little ton	to	
;	< >_	$ \times $				Sand (Jw) same as about	- - -	·
		$\sum_{i=1}^{n}$				END of Boring 92 Ft	- <b>b</b> G-\$	- - -
						· ·	-	· · · ·
	. – –							· · · · · · · · · · · · · · · · · · ·
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						•	-	
							_	·
•	-						-	-
	-						_	_



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PROJECT NUMBER	BORING NUMBER		
107493.06.02	PZ 19-090/PZ 19-014	SHEET	l OF 2
· · · · · · · · · · · · · · · · · · ·			

#### SOIL BORING LOG

PROJECT RMC Trostdule

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Eastside balahouse LOCATION ~150' E of MW44

ELEVATION \_

DRILLING CONTRACTOR Geo-Tech (Pek Laura)

DRILLING METHOD AND EQUIPMENT Greeprobe UNIT

.

WATER LEVELS					START 10/31/97 FINISH 10/31/9	7 LOGGER Och / Bowker
3F			STANDARD	SOIL DESCRIPTION	COMMENTS	
DEPTH BEL( SURFACE (F	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)	results Results 6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE. DRILLING FLUID LOSS. TESTS AND INSTRUMENTATION
5 _					Surface - grund - Ift. 1-Sft. Sand (SW) Dark Yellowish Brown - Damp, loose, five to medium grained - Sand (SW) Dale Yellow Brown, Damp loose Med - Frive grained. Subangular grains.	-
10 -			~		Silt(ML) Pale Yellow moist + friebb, Low plasticity. 5% Fire galaced sand, orange motting	-
				~	11-15 Ft 5, H(ML) Dark Gray (N9) moist > wet. ned plasticity. nod stiff. Small lenses of ned-five galacd sand. 19 15-20 Ft 5, 11-(nel) yellowith Brown wet & 55% sand 1 orange nothing, trace mash ff. organic melercel	
20			_		Sano (Sw) Light Olive Gray Let, loose, and five graved a subangular graves. Trace Fiver.	
30					Saup (Su) some as above -	

					PROJECT NUMBER BORING	NUMBER
СКМ	ΗЩ				107493.D6.02 PZ19.00	10/PZ19-014 SHEET Z OF 2
					SOIL BOR	
PROJE	ст Вл	nc Ta	in to	ale	LOCATION ~	stride bakehouse 150'E of MW 44
ELEVAT		····			DRILLING CONTRACTOR Geo Tech (7	Pete Lorson)
DRILLIN			d Equi	PMENT Geog	start lotallaz since 10/31	
		SAMPL	=			COMMENTS
EPTH BELOV URFACE (FT)	VTERVAL	ND TYPE	ECOVERY T)	PENETRATION TEST RESULTS 6"-6"-6"	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
00		ZA	μ.e.	(1)	SAND (SW) As above	
31 -	×-					4
-					SanD(SW) Work (ray (N9) wet; loose, Fire to madian grained, - the julie subanyate graine. red grains present.	-
35 -						-
					Sado (Su) Same es abour	- - - - -
40 _ -			-		END of boring 40 Ft. 365.	-
-						-
					· · · · · · · · · · · · · · · · · · ·	
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WELLINST.DWG



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# ATTACHMENT 3 OWRD Monitoring Well Reports

ON CD

STATE OF OREGON MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095) 4283 AllG	FINED N/ 3E/14 ab
Instructions for completing this report are on the last page of this form.	0 1994
(1) OWNER/PROJECT: WILLNO. MUU-SWATER ISS Name Club No SALEM SALEM	(6) LOCATION OF WELF By legal description
Address Shop fund ral Rd	Township (N or S) Range (E or W) Section 4777-74
City routdall State OR Zip 97060	1. $M_{1/4}$ of $M_{1/2}$ 1/4 of above section.
(2) TYPE OF WORK:	2. Either Street address of well/location
New construction Alteration (Repair/Recondition)	or Tax lot number of well location
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
(3) DRILLING METHOD	(7) STATIC WATER LEVEL:
Rotary Air Rotary Mud Cable     Hollow Stem Auger Other	Artesian Pressure lb/sq. in. Date
BORE HOLE CONSTRUCTION Yes No	(8) WATER BEARING ZONES:
cial Standards $\Box$ $\bigotimes$ Depth of completed well $\bigotimes$ ft.	From To Est. Flow Rate SWL
Land surface	qt pgt qt
Nault Nault	
3 ft. Water-tight cover	
70 < 10	
3 ft. 9	
	(9) WELLLOG: Ground elevation
diameter Z in	
DUA.	Material From To SWL
Welded Threaded Glued	Stashiend & 191 91
	and a contra serve. C 10 6
	·
e o e Maldad Threaded Chad	
-CIn CS B	
CONTRACTOR AND A CONTRA	aps <u>1404 7 0 1444</u>
Cant micht	WATER RESOURCES LEFT.
	SALEM, OREGUN
Borengie Borengie Borengie Borengie	
pison pig at least 3 ft. thick	
Filter	
pack So St H So St material	
	•
	Date started 1/9/184 Completed 7/9/84
	Date statica Completed
	(unbonded) Monitor Well Constructor Certification:
(5) WEITTECT	I certify that the work I performed on the construction, alteration, or
(5) WELLIEDI:	abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best
	knowledge and belief. Al MWC Number MARS
Conductivity DH	Miller X H BEAN
Temperature of water S PL Danth attacian flow found	Signed_Murry X CTAW Date 01 01019
We water analysis done? $\sum C$ $\sum V_{0}$	(bonded) Monitor Well Constructor Certification:
By whom?	I accept responsibility for the construction, alteration, or abandonment
Depth of strate to be analyzed From fit to	work performed on this well during the construction dates reported above. All
	work performed during this time is in compliance with Oregon well construction
kemarks:	stanuarus. This report is the to the best of my knowledge and beller.
New Second States I A	MWC Number RUTT
Ivame of supervising Geologist/Engineer	Signed lang/////mm Date 8/6/94
ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT	SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

STATE OF OREGON	
MONITORING WELL REPORT	7 WELL I.D. L10751
(as required by ORS 537.765 & OAR 690-240-095)	S DEPT, Start Card #_W85677
Instructions for completing this report are on the last page of the definition of the	ON to require the test of the
(1) OWNER/PROJECT: WELL NO. NUCCOST	(6) LOCATION OF WELL By legal description
Name KEYNULUS MEIALS COMPANY	Well Location: County NULINOMACH
Address 5100 SCNDIAL ICOAD	Township Nor S) Range <u>S (E</u> for W) Section <u>ZS</u>
City KOTLALE State CK Zip	1. <u>SE</u> 1/4 of <u>SE</u> 1/4 of above section.
(2) TYPE OF WORK:	5100 SUNDIAL ROAD TRATTOALE OR
New construction Alteration (Repair/Recondition)	or Tax lot number of well location
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include
	approximate scale and north arrow.
(3) DRILLING METHOD	(7) STATIC WATER LEVEL:
Rotary Air Rotary Mud Cable	_23_ Ft. below land surface. Date 6-26-46
Hollow Stem Auger Other	Artesian Pressure lb/sq. in. Date
(1) PODE HOLE CONSTRUCTION	(8) WATER READING ZONES.
BORE HOLE CONSTRUCTION	(6) WATER DEARING ZOINES:
Special Standards $\Box$ $\nabla$ Depth of completed well 98 ft	From To Fst Flow Rate SWI
	$40 98 + 567 23^{-1}$
Protective casing Locking cap	
Protective post	
Vement monument	<b>k</b>
Land surface	(9) WELLLOG: Ground elevation <u>±43</u>
Monument Casing Z	- Material From To SWL
	ar CREHED BACAT 0 7
TO DAND Welded Threaded Glued	SAND, BROWN 7 70
$2.5_{\text{f}}$	SILTY SAND ZO Z5
Liner	SILT, GRAY 25 40
20.20 30 30 diameter	in. SAND, DARK GRAY 40 85
$= \bigcirc \bigcirc$	SAUD, WOOD FRAG 85 98
CR C	
85 c 0000 material 0000	
Grout weight 9.8	
Borehole diameter	
1000 1000 1000 1000 1000 1000 1000 100	
3D, 3D	thick
Filter ( 0 <sup>g</sup> 0) = 0 <sup>g</sup> 0 Screen	
pack 0.50 a a material some material	
48.4	
BEIDU 2000 E Filter pack:	Date started 6-20-90 Completed 6-26-96
CREA CORRECT Material SILICA SA	ND
Sood Size 10-40 in.	(unbonded) Monitor Well Constructor Certification:
(5) WELL TEST:	abandonment of this well is in compliance with Oregon well construction
Pump Bailer Air Flowing Artesian	standards. Materials used and information reported above are true to the best
PermeabilityYieldGPM	MWC Number
Conductivity PH	Signed 0707/10/1/00/100 Date 1-15-4
Temperature of water CF/C Depth artesian flow found	II. V (bonded) Monitor Well Constructor Certification:
was water analysis done? $\Sigma_{2}$ res $\Box_{10}$	I accept responsibility for the construction, alteration, or abandonment
Depth of strata to be analyzed. From ft to	work performed on this well during the construction dates reported above. All
Remarks:	standards. This report is true to the best of my knowledge and belief.
	MWC Number 10067
Name of supervising Geologist/Engineer IVAN GALL - CHZMHI	L Signed Date 1. 15.97

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER



JAN 2 3 1997

WATER RESOURCES DEPT. SALEM, OREGON

STATE OF OREGON MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this report are on the last page of this form.	$\frac{CEINED}{G-91995tart Card # 67348}$
(1) OWNER/PROJECT: WELLNO. MW-5-02-02-02-02-02-02-02-02-02-02-02-02-02-	(6) LOCATION, OF WELL/By legal description
City Troutdaile State OR Zip 97060 (2) TYPE OF WORK:	1. <u>k</u> [1/4 of <u>k</u> ] [1/4 of above section. 2. Either Street address of well location
New construction     Alteration (Repair/Recondition)     Conversion     Deepening     Abandonment	or Tax lot number of well location
	approximate scale and north arrow.
Rotary Air	Artesian Pressure lb/sq. in. Date Date
BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES:
Ves No Cial Standards Depth of completed well 25 ft.	Depth at which water was first found   1     From   To   Est. Flow Rate   SWL     Image: Switch and Switch a
To 3 ft	
Casing Ca	(9) WELLLOG: Ground elevation
Welded Threaded Glued	Material From To SWL SFA STATE and O' 25' 5'
$\begin{array}{c c} Seal \\ S \\ T \\ T \\ S \\ T \\ S \\ T \\ S \\ T \\ S \\ S$	
TO D D D D D D D D D D D D D D D D D D D	
13 ft. So S	
Sood Material Sector LC Amount 950 Back	Wps NOV 1 0 1994
Grout weight	SALEM. OREGIN
$\begin{array}{c} & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & &$	ck
Filter pack GR CI BUSH Screen material PUC	
$\begin{array}{c c} \hline & & \\ \hline \\ \hline$	
$\begin{array}{c c} \mathbf{T}_{\mathbf{T}} \\ \mathbf{T}_{\mathbf$	
Pars Hilter pack. A S Material Server	Date started 7/8/94
Gave Size Diff in.	(unbonded) Monitor Well Constructor Certification: - I certify that the work I performed on the construction, alteration, or
(5) WELLTEST: Pump Bailer Air Flowing Artesian Permeability Yield GPM	abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief. MWC Number 10181
Temperature of water 52 62 Depth artesian flow found ft.	(bonded) Monitor Well Constructor Certification
By whom?	I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All
Remarks:	standards. This report is true to the best of my knowledge and belief.
Name of supervising Geologist/Engineer Head ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT	Signed Lerry MM/1990 Date 8/6/94 SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

STATE OF OREGON MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this report are on the last page of this form	N 3E/14 a. Start Card #6 134/1	6
(1) OWNER/PROJECT: WELLNO. MWW-6-014	(6) LOCATION OF WELL By legal description	
Address 200 Sunstral Ed	Township (N or S) Range (E or W) Section	-24
City Tourdell State OR Zip 97060	1. <u>HAM14 of ME</u> 1/4 of above section.	
(2) TIPE OF WORK.	Pet frontall	~
New construction       Alteration (Repair/Recondition)         Conversion       Deepening         Abandonment	or Tax lot number of well location 3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow. /	
(3) DRILLING METHOD	(7) STATIC WATER LEVEL:	
Rotary Air Rotary Mud Cable	Artesian Pressure lb/sq. in. Date	
(A) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES: 1/ (	
Yes No cial Standards $\Box$ No Depth of completed well ZS ft.	Depth at which water was first found   Image: Comparison of the second	
Venit Land surface	16' 25' 16'	
Water-tight cover		
TO Surface flush vault		
ft.	(9) WELLLOG: Ground elevation	
Go 30 Gio 31 Giameter diameter in.	Matarial From To SWA	
Welded Threaded Glued	Stastly O' 75	-
	Sand	
Seal 500 Liner		
$D_{2}D_{2}D_{2}D_{3}D_{3}D_{3}D_{3}D_{3}D_{3}D_{3}D_{3$		
TO 2 So Welded Threaded Glued		
13 ft 3 °C Well seal:		
So Materia Materia	hips	
Amount 20 Brand	> 1	_
Social Borehole diameter		
sp s		
Filter pack So State and So State and Anternal PUC		
25  ft. Slot size $0.00  jn.$		
Passo Material	Date started 1/9/94 Completed 1/9/04	
<u><u> </u></u>	(unbonded) Monttor Well Constructor Certification:	
(5) WELL TEST	<ul> <li>I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction</li> </ul>	
Pump Bailer Air Flowing Artesian	standards. Materials used and information reported above are true to the best knowledge and believed and information reported above are true to the best	2
PermeabilityYieldGPM	Sinced	21
Temperature of water 57 OC Depth artesian flow found ft.	Signed By March States	
Was water analysis done?	(bondet) Monitor Well Constructor Certification: I accept responsibility for the construction, alteration, or abandonment	
Depth of strata to be analyzed. From ft. to ft.	work performed on this well during the construction dates reported above. A work performed during this time is in consolitance with Oregon well construct	ll
Remarks:	standards. This report is true to the bast of my knowledge and belief.	
Name of supervising Geologist/Engineer	Signed an Im Jan Date 8/6/94	//

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STATE OF OREGON	nor Males have
MONIPORING WELL REPORT 52873	1997 WFLL 1. D# 1. 10753
(as required by ORS 537.765 & OAR 690-240-095)	Start Card # W79940
Instructions for completing this report are on the last page of this forme SOLIA	RCFS DEPT.
(1) OWNER/PROJECT: WELL NO. MWCGGEM, CO	EGON(6) LOCATION OF WELL By legal description
Name REYNOLDS METALS COMPANY	Well Location: County_MULTNOMAH
Address 500 SUNDIAL ROAD	Township (Nor S) Range _ 3 _ E or W) Section 23
City TROUTDALE : State OR Zip 97060	1. $1/4  of  NW$ 1/4 of above section.
(2) TYPE OF WORK:	2. Either Street address of well location
	5100 SUNDIAL RUAD TROUTPALE, OC,
Conversion	a ATTA CH MADWITH I OCATION IDENTIFIED Man aball tashada
	approximate scale and north arrow.
(3) DRILLING METHOD	(7) STATIC WATER LEVEL:
🗌 Rotary Air 📄 Rotary Mud 🔀 Cable	16 Ft. below land surface. Date 9-20-96
Hollow Stem Auger Other	Artesian Pressure lb/sq. in. Date
BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES:
Yes No Social Sundation Details and a gill	Depth at which water was first found
Depth of completed wellf.	Trom to Est. Flow Rate SWL
Protective casing Locking cap	
Protective	
)ement monument	
Land surface	(9) WELLLOG: Ground elevation <u>±40</u>
Monument Casing 7	
Monument Good diameter	in. Material From to SWL
material 2014	FVC FILL, CLUSTED BULL O Z
	SILLY SAND, SCAVEL 2 5
	SIT LITE BOALL 10 20
30.30 Sol Sol Sol diameter	in SALD, GRAV 70 95
Con Dettitie internal	
CR CA Welded Threaded Glue	xd
Seal S? C	
$Z_{15}$ ft. $G_{00}$ Well seal:	
TO COOL Material CANDO	
OI ft. $O'$ $O'$ $O'$ $O'$ $O'$ $O'$ $O'$ $O'$	
Bornel and Crout weight 112	·
SD SD Bentonite plug at least 3	ft. thick
Filter Q <sup>&amp;</sup> Q	
pack   esoc = material Sch40	PVC
	· · · · · · · · · · · · · · · · · · ·
Alexandre The pack Material SIL VA S	AND
Size <b>ZO/4</b> D in.	(unbonded) Monitor Well Constructor Certification:
(5) WELL TEST:	abandonment of this well is in compliance with Oregon well construction
Pump Bailer Air Flowing Artesian	standards. Materials used and information reported above are true to the best
PermeabilityYieldGPM	knowledge anotheliet. MWC Number 10102
Conductivity PH	Signed Date JAN 15,97
Temperature of water OFC Depth artesian flow found	_ft.
was water analysis done? $\mathcal{Y}$ Yes $\square$ No By whom? $\mathcal{O}$ $\mathcal{U}$ $\mathcal{O}$ A $\mathcal{U}$ $\mathcal{U}$ $\mathcal{O}$ A A $\mathcal{O}$	l accept responsibility for the construction, alteration, or abandonment
Denth of strate to be analyzed From fit to	work performed on this well during the construction dates reported above. All
Remarks:	work performed during this time is in compliance with Oregon well construction standards. This perfort is true to the best of my knowledge and belief.
	MWC Number 10067
Name of supervising Geologist/Engineer IVAN GALL - CHZM	HILL signed Date 1.15.97

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JAN 2 3 1997 WATER RESOURCES DEPT. SALEM, OREGON

Mult Entry	
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MONITORING WELL REPORT	LIO/54 WELLID,
(as required by ORS 537.765 & OAR 690-240-095)	CE3 DEPT. Start Card # W79941
(1) ONALED OD OTEOT	EGON
(1) OWNER/PROJECT: WELL NO. MWOB-170	(6) LOCATION OF WELL By legal description
Adding ELOO SUNDIAL ROAD	Township Morsh Range 3 (Fbr W) Section 73
City TOO TOALE State OR Tin	$1 \leq 1/4$ of $1/4$ of above section
$\frac{ch}{(2)} TYPE OF WORK$	2. Either Street address of well location
(2)  1112  or work.	5100 SUNDIAL ROAD TROUTDALE, OR.
New construction Alteration (Repair/Recondition)	or Tax lot number of well location
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include
•	approximate scale and north arrow.
(3) DRILLING METHOD	(7) STATIC WATER LEVEL:
Rotary Air Rotary Mud Cable	The selow land surface. Date 5-1-16
Hollow Stem Auger Other	Artesian Pressure lb/sq. in. Date
(1) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES:
Ves No	Depth at which water was first found ZOFT
Special Standards $\Box$ X Depth of completed well 176 ft.	From To Est. Flow Rate SWL
	20 198,5 ±56PM 20
Protective casing	
Protective post	
Land surface	(9) WELLLOG: Ground elevation
Monument	Material From To SWL
	AC AROSHED BASALT O Z
TO OBRO Welded Threaded Glued	SILTY SANDY GRAVEL 2 5
	SAND, BROWN 5 10
	SILT, LITE BROWN 10 ZO
8D. 80 in	SAND, GRAV ZO 120
material	SAUD, GRAY WITH 120
$C^8 C$ Welded Threaded Glued	SOME GRAVELS 135
	CAND, CRAY WIRDIN IEQ 199
	TE SUT COAN USE 100
180 0.000 Amount 44-50	PAGS
Grout weight 9,8	
Borehole diameter	
6.3 0 5 in.	
$\mathcal{D}_{\mathcal{D}} \mathcal{D}_{\mathcal{D}} \mathcal{D} \mathcal{D}_{\mathcal{D}} \mathcal{D} \mathcal{D} \mathcal{D} \mathcal{D} \mathcal{D} \mathcal{D} D$	hick
Filter G G G Screen	R BORINE HEIDUNITT! ARANNAT
pack 0.30 material 200 TV	INTH CENER CONT
176 Several Elevel From To	· · · · · · · · · · · · · · · · · · ·
BEINU GASI Filter pack:	Date started 4-16-96 Completed 5-1-96
OROG Material SILICA SA	
$- \frac{1}{16000} \text{ Size } 0 - 40 \text{ in.}$	I certify that the work I performed on the construction, alteration, or
(5) WELL TEST:	abandonment of this well is in compliance with Oregon well construction
Bailer Air Flowing Artesian	standards. Materials used and information reported above are true to the best knowledge and belief.
PermeabilityYieldGPM	MWC Number
Temperature of water 50 (PE/C Denth artesian flow found f	SignedDate
Was water analysis done? X Yes $\Box$ No	(bonded) Monitor Well Constructor Certification:
By whom? CHZMHILL - RMC	I accept responsibility for the construction, alteration, or abandonment
Depth of strata to be analyzed. From ft. to ft	<ul> <li>work performed on this well during the construction dates reported above. All</li> <li>work performed during this time is in compliance with Oregon well construction</li> </ul>
Remarks:	standards. This report is true to the best of my knowledge and belief.
	MWC Number 10067
Name of supervising Geologist/Engineer K, GEWEILER / CHZMHIL	L Signed Date 1. 15.97

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WATER RESOURCES DEPT.

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STATE OF OREGON / MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095) 4280 AUG	EIVED N 3E 14 alb 9 1994 Start Card # 67346
Instructions for completing this report are on the last page of this form; (1) OWNER/PROJECT: Well NO. MW SMACE S. I	(6) LOCATION OF WELL By legal description Well Location: County
Address Charles June 127 Ca <u>City Toronale State OTZ</u> Zip TOLGO (2) TYPE OF WORK:	1 (N or S) Range (B or W) Section 7 (4) D Set 1 1/4 of 1/4 of above section. 2. Either Street address of well location STOD Struct address of well location
New construction         Alteration (Repair/Recondition)           Conversion         Deepening         Abandonment	or Tax lot number of well location 3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
(3) DRILLING METHOD Rotary Air Rotary Mud Cable Hollow Stem Auger Other	(7) STATIC WATER LEVEL: Ft. below land surface. Date 7/7/94/ Artesian Pressure lb/sq. in. Date
BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES: Depth at which water was first found
Cial Standards Depth of completed well <u>26</u> ft. Land surface	From To Est. Flow Rate SWL
Vault 3 ft. 70 70 8 8 8 8 8 8 8 8 8 8 8 8 8	
$C_{asing}$ $C_{a$	(9) WELLLOG: Ground elevation
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Since in the second sec
TO COS Welded Threaded Glued COS Welded Threaded Glued COS Welded Threaded Glued COS Wellseal: Wellseal: Mutricl West Cos	
Amount Serton Period	
Filter Filter	k WATER NESCU (JES Er I. SALEM, CREGON
$ \begin{array}{c c}                                    $	
$\begin{array}{c} \mathcal{L}\mathcal{O} \text{ f.} \\ \begin{array}{c} \mathbb{C} & \mathbb{C} & \mathbb{C} \\ \\ \mathbb{C} & \mathbb{C} & \mathbb{C} & \mathbb{C} \\ \mathbb{C} & \mathbb{C} & \mathbb{C} \\ \\ \mathbb{C} & \mathbb{C} & \mathbb{C} & \mathbb{C} \\ \\ \mathbb{C} & \mathbb{C} & \mathbb{C} & \mathbb{C} \\ \\ \mathbb{C} & \mathbb{C} & \mathbb{C} & \mathbb{C} \\ \\ \mathbb{C} & \mathbb{C} & \mathbb{C} & \mathbb{C} \\ \\ \mathbb{C} & \mathbb{C} & \mathbb{C} & \mathbb{C} \\ \\ \mathbb{C} & \mathbb{C} & \mathbb{C} & \mathbb{C} \\ \\ \mathbb{C} & \mathbb{C} & \mathbb{C} & \mathbb{C} \\ \\ \mathbb{C} & \mathbb{C} & \mathbb{C} & \mathbb{C} \\ \\ \mathbb{C} & \mathbb{C} & \mathbb{C} & \mathbb{C} \\ \\ \mathbb{C} & \mathbb{C} &$	Date started 1/1/94 Completed 7/7/94
(5) WELL TEST: Pump Bailer Air Flowing Artesian Permeability Yield GPM Conductivity PH	(unbonded) Morator Well Constructor Certification: I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief Signed
Temperature of water SZ_OPC Depth artesian flow foundft. Was water analysis done? Wes WNO By whom? CHZWHHM Depth of strata to be analyzed. Fromft. toft.	(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief
Name of supervising Geologist/Engineer	Signed COPT-CONSTRUCTOR THIRD COPY-CUSTOMER

STATE OF OPECON Mult	
MONITORING WELL REPORT 52872 JAN 2 3 19	197 WELL 10 # L10755 MW0807
(as required by ORS 537.765 & OAR 690-240-095)	3ES DEPT. Start Card # W85711
(1) OWNED OD LECT WELL NO MIA/CE	GON (6) LOCATION OF WELL By legal description
Name REVINDIDS METALS (COMPANY	Well Location: County MULTNONAH
Address 5100 SUNDIAL ROAD	Township (Nor S) Range 3 (E br W) Section 14
City TROUTDALE State OR Zip 97060	1. $\underline{SE}$ 1/4 of $\underline{SW}$ 1/4 of above section.
(2) TYPE OF WORK:	2. Either Street address of well location
New construction Alteration (Repair/Recondition)	or Tax lot number of well location
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include
	approximate scale and north arrow.
(5) DRILLING METHOD Rotary Air Rotary Mud DCable	10 Ft below land surface. Date 7-9-96
Hollow Stem Auger Other	Artesian Pressure lb/sq. in. Date
(A) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES:
Special Standards $\square$ $\bowtie$ Depth of completed well $127$ ft.	From To Est. Flow Rate SWL
	16 80 ±56PM 16-
Protective casing Protective	80 134 ± 100 GPM
post	
Land surface	(9) WELLLOG: Ground elevation 34
Monument	- Material From To SWI
O ft O/S material SCH80 P	K FILL CRIKER POCK O 2
TO Z SOND Welded Threaded Glued	SILTY SAND 2 7
	SAND, F-M BROW 7 28
D D D D D D D D D D D D D D D D D D D	SUTV SAID WITH 2121
	WOOD FRACMENT 82
CR CR CR CR Welded Threaded Glued	SILT, GRAY 82 83
	SILTY GRAUELS 83
TO SOLUTION Well seal:	G VERY VERSE
115 ft. 0000 Amount 16-50#E	
So Grout weight 9-8	
Borehole diameter	
2 $2$ $2$ $3$ $2$ $3$ $2$ $3$ $2$ $3$ $2$ $3$ $3$ $3$ $3$ $3$ $1$ $3$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$	thick
Filter Q <sup>R</sup> Q Screen	
pack poor material SCHEOP	K BOTINE BEION ITO ( A PALION VE)
$\bigcup_{m}$ ( $\bigcup_{m}$ $\bigcup_{m}$ ( $\bigcup_{m$	WITH BENTONITE GROUT
1000 $100$ in.	
	Date started $6 - 7 - 96$ Completed $7 - 9 - 96$
$\begin{array}{c c} \hline \\ \hline $	(unbonded) Monitor Well Constructor Certification:
(5) WELL TEST:	I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction
Dump Bailer Air Flowing Artesian	standards. Materials used and information reported above are true to the best knowledge and belief.
PermeabilityYieldGPM	MWC Number 1000
Temperature of water 50 (°F)C Depth artesian flow found	ft.
Was water analysis done? Yes No	(bonded) Monitor Well Constructor Certification:
By whom? CHZMHILL - RMC	work performed on this well during the construction dates reported above. All
Depth of strata to be analyzed. From ft. to	the work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
	MWC Number <u>10067</u>

Name of supervising Geologist/Engineer VAN GALL -CHZMHIL Signed Date 1.15.97 ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER



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JAN 2 3 1997 WATER RESOURCES DEPT. SALEM, OREGON

STATE OF OPECON MULT	40.07
MONITORING WELL REPORT 52877 JAN 2 3	1997 40756
(as required by ORS 537.765 & OAR 690-240-095)	HGES DEPT. Start Card # W85712
Instructions for completing this report are on the last page of this form.	REGON
(1) OWNER/PROJECT: WELL NO. MWOS-IGH	(6) LOCATION OF WELL By legal description
Address 500 SUNDIAL POAD	Townshin I War S) Range 3 (For W) Section 14
City TROUTDALE State OR Zip	1. SE $1/4 \text{ of } SW$ $1/4 \text{ of above section.}$
(2) TYPE OF WORK:	2. Either Street address of well location
	5100 SUNDIAL ROAD TROUTDALE, OR
New construction Alteration (Repair/Recondition)	or Tax lot number of well location
	3. AI IACH MAP WITH LUCATION IDENTIFIED. Map shall include approximate scale and north arrow.
(3) DRILLING METHOD	(7) STATIC WATER LEVEL:
🗙 Rotary Air 🗌 Rotary Mud 🗙 Cable	Ft. below land surface. Date 5 26 76
Hollow Stem Auger Other	Artesian Pressure lb/sq. in. Date
(1) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES:
Yes No	Depth at which water was first found
Special Standards Depth of completed well 69 ft.	From To Est. Flow Rate SWL
Locking cap	16 80 ±5GPM 16-
Protective casing Protective	80 197 ±50 - 100 6PM 16-
post	
Land surface	(9) WELLLOG: Ground elevation <u>±36</u>
Monument Casing 7	Matazial Essen To SUIT
O fr Dool The Dool material C 4 90 F	N. ARISHED RASALT 0 7
TO DODE Welded Threaded Glued	SILIV SALD Z 7
	SAND, BROWN 7 28 16-
o S o S Liner	SAND, GRAVELS 28 44
80.82 [80.82] diameter ii	SILTY SAND WITH 44
Coso material	WOOD FRACKENTS 82
Social Second Se	SUTY GOARD - OC 85
<b>7.5</b> ft QC D	VERY DENSE 130
TO COSCILLA Material PENTCHI	E SILT BROWN 130 135
156 ft. Amount 18-50# B	AGS GRAVEL 135 138
Grout weight 9.7	_ SAND, GRAVEL, GRAV 138 158
Boes Borehole diameter	CONTENT 101 101 103
D 20 20 20 20 20 20 20 20 20 20 20 20 20	thick UKATEVED PASAIT 177 197
Filter G& G Screen	RACALT-GOAT BACK 197 ZOO
pack of the pack material the pack	vc
	- I BAGS CEMENT USED TO ABANDON
	BOTTOM BOREHOLE FROM 200-110
	Date started 5-77-96 Completed 5-23-96
Para Material SILICA SA	ND
Size <u>10-40</u> in.	(unbonded) Monitor Well Constructor Certification:
(5) WELL TEST:	abandonment of this well is in compliance with Oregon well construction
Pump Bailer Air Flowing Artesian	standards. Materials used and information reported above are true to the best
PermeabilityYieldGPM	MWC Number 10102
Temperature of water 50 (FC Depth artesian flow found	ft. Date JAN 13,97
Was water analysis done? X Yes No	(bonded) Monitor Well Constructor Certification:
By whom? CHZMHILL - RMC	I accept responsibility for the construction, alteration, or abandonment
Depth of strata to be analyzed. From ft. to ft	work performed during this time is in compliance with Oregon well construction
Remarks:	standards. This report is true to the best of my knowledge and belief.
Name of supervising Geologist/Engineer INTANI CALL /ALIONILL	MWC Number 10067
OPICINAL & EIDST CODY WATED DESCUIDES DEDAPTME	NT SECOND COPY CONSTRUCTOR THIRD COPY CUSTOMER



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JUN-26-96	WED 11:40	WATER	RESOURCES DEF	PT FAX NO. 503 378 8130	P. 03
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· · ·		•			MOOR
•		Jregon	Waler Kes	purces Department	21
ri D	equest for NCLUDED IN	WRITTEN OREGON	APPROVAL TO ADMINISTRAT	USE CONSTRUCTION METHODS NOT TVE RULES 690-200 THROUGH 690-240	. 71
Before the We by the	e request can be ell Construction appropriate Re	considered, Specialist, gional Man	the following m Water Resource ager.	ust be answered. Requests shall be submitted to Department. Requests may also be considered	·
Date	of request	UNE 2	6,1996		
Bonde	ed Well Constru	ctor (name,	license and mai	ling address): ERKC HANSEN	
30	BIG Ma	NTAIN	HWY GR	AHAM WA 98338 LK # 1006	7
(1)	Location of W	'ell:	1/4 1/4 (	of Section Township	
	Range 3E			MULTNOMAH County.	
	Address at we	ll site: 5	100 Sun	DIAL ROAD "	
			700 ITTAL	E CP.	
(2)	Start Card Nu	mber(s): M	W10,08.21	27 W85671, W85712, W79939, W	85715
(3)	Name and Ad	dress of I a	d Owner R	EVNOLDS METALS COMPANY	
			10 0 wildt		
	The distance t	a the needed		it as desinfield (if water success success)	
(4)	Auron Fr	o the neares	it went, sepue tar	in or annumena (it water supply well):	
	OVER D	10 41.		EQuarally area	
(5)	The unusual c	onditions w	hich accessitate	this request: +OZMATION MATERIAL	
	(CEMPOSE)	OF LOC	SE SANDS	WHICH HEAVES BADLY, GEOLOGIST	wants
(6)	TO EUSU VELL SCER The proposed this well (area	RE ADE EN 4 TOP construction ch additiona	OUATE SLU OF BENTO a methods that the l pages if needed	CA SAND THICKNESS BETWEEN BA NITE SLURRY SEAL BELOW IT. be well constructor believes will be adequate for D	SE OF
	For 1	DIAGRAM		· · · · · · · · · · · · ·	
				·	
			ماري السندي بدر رويدين منسقت		
	·				
• .				JAN 2 3 19	97
				WATER RESOURC	ES DEPT.
*				SALEM, OREC	SON .
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P.03

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(7) Diagram showing the pertinent features of the proposed well design and construction (attach additional pages if needed):



## PLEASE NOTE:

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- (1) If approved, all other phases of well construction must comply with the appropriate standards described in OAR 690-200 through 690-240.
- (2) If it should be determined at some future date that the well, due to its construction, is allowing groundwater contamination, waste or loss of artesian pressure, the undersigned shall return to the site and rectify the problem.
- (3) If verbal approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of verbal approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge.

Bonded Constructor Signature:	tance	10067
VECEAL APPROVAL ROS CARTLE LU	CHRANHILL	The designed and address of the second distances.
For Water Resour	ces Department Use Only	, च
Date:7-9-96+0 A-1		e 1994 band bei bei ungesamplah d. Makkan and anderen 110
Approved by:Kuthh		
Remarks:		Torised: 4-06
		JAN 2 3 1997
		WATER RESOURCES DEFT. SALEM, OREGON
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STATE OF OREGON / MULT RECEIV	VED IN/ SEI 14 bh
(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this report are on the last page of this form.	1994 Start Card # 10153
(1) OWNER/PROJECT: WELL NOM AGE BRESSON Name Levy of 05 Motals, MW09-030 SALEM, O Address 5000 Secure trained and City Mound Call State OR Zip 97060 (2) TYPE OF WORK:	16 TOCATION OF WELLIARY legal description Well Location: County (N or S) Range 55 (E or W) Section 4777-74 1. (N or S) Range 1/4 of above section. 2. Either Street address of well location 5700 Sculor addred
New construction       Alteration (Repair/Recondition)         Conversion       Deepening         Abandonment       Deepening	or Tax lot number of well location
(3) DRILLING METHOD Rotary Air Rotary Mud Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable Cable	(7) STATIC WATER LEVEL: [18] Ft. below land surface. Artesian Pressure lb/sq. in. Date
BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES:
Yes No Depth of completed wellft.	Depth at which water was first found $18$ From To Est. Flow Rate SWL 18' 31' 18'
Protective casing Protective post	
Land surface	(9) WELLLOG: Ground elevation
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Material From To SWL SALE O' 310 18 SALE NOV 1 0 199, WATER RESULUES LEPT. SALEM, OREGON Date started Of 4/94 Completed 0/4/94
Size 20/40 in.         Size 20/40 in.         (5) WELL TEST:         Pump       Bailer       Air       Flowing Artesian         Permeability       Yield       GPM         Conductivity       PH	I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belie. Signed (bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.
Name of supervising Geologist/Engineer DWI Brorogn ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT	Signed Date 226 R

RECEIVED AUG 3 0 1994 SITE MAP NATER RESUURSES LPT. SALEM, OREGON ; nt MW-900 RAW-10. & MW-U Grade RECEIVED AY NOV 1 0 1994 WATER RESOURCES DEPT. SALEM, OREGON Suda 1"= 1000° ð \$ MW-10/2

STATE OF OREGON MULT	1097
MONITORING WELL REPORT 52868	
Instructions for completing this report are on the last page of this form SALEM. Co	megon
(1) OWNER/PROJECT: WELL NO. MW1Z-184	(6) LOCATION OF WELL By legal description
Name REYNOLDS METALS COMPANY	Well Location: County MULTNOMAH
City TROUTDALE State CR Zip	1. NW 1/4 of SE 1/4 of above section.
(2) TYPE OF WORK:	2. Either Street address of well location
	5100 SUNDIAL KOAD TROUTDALE, OR
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include
	approximate scale and north arrow.
(3) DRILLING METHOD	(7) STATIC WATER LEVEL:
Hollow Stem Auger Other	Artesian Pressure lb/sq. in. Date
BORE HOLE CONSTRUCTION	Depth at which water was first found
Special Standards: $\Box$ $\bigstar$ Depth of completed well <u>184</u> ft.	From To Est. Flow Rate SWL
Locking cap	35 200 ± 5 GPM .20
Protective casing Protective	
ement monument	
	(9) WELLIOC: Ground elevation + 39 -
Land surface	
Monument Sch80Z	in. Material From To SWL
The solution of the solution o	C CRUSHED BASALT O Z
	SAT GRAY 5 20
liner	SILTW/SAND, 20 35
aiameter i aiameter	
Case Case Case Case Case Case Case Case	SCAY . I'IO
	SAND, COARSE 170 200
TO ROOM Material REJOUT	
171 ft. 0.80 Amount 14-501B	BAGS
$($ $\nabla \partial S$ $\nabla O$ $\nabla O$ $\nabla O$ $\nabla O$ $S$ $\nabla O$ $\nabla O$ $S$ $\nabla O$ $S$ $\nabla O$ $S$ $\nabla O$ $S$ $\nabla O$ $\nabla O$ $\nabla O$ $S$ $\nabla O$	_
3D, 3D Bentonite plug at least 3 ft.	thick
Filter Q <sup>S</sup> Q Screen Screen Screen	VC BOTTOM OF BOREHALE 195-700'
$( \underline{\Pi} f_{f_{1}}   \underline{P} D_{o} S ] = [ \underline{P} D_{o} S ] $ interval(s):	ABANDONED WITH 4 BAGS CELLENT
To 184	GROUT
$100^{\text{mt.}}$	
BELOW Ses E Ses Filter pack:	Date started 5-10-96 Completed 5-21-96
	(unbonded) Monitor Well Constructor Certification:
(5) WELLTEST:	I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction
Pump Bailer Air Flowing Artesian	standards. Materials used and information reported above are true to the best
Permeability Yield GPM	MWC Number 10345
Temperature of water 50 CPC Depth artesian flow found	ft.
Was water analysis done? Yes No	(bonded) Monitor Well Constructor Certification:
By whom? CHZMHILL - ENC	<ul> <li>work performed on this well during the construction dates reported above. All</li> <li>the performed during this time is in construction dates reported above.</li> </ul>
Remarks:	standards. This report is true to the best of my knowledge and belief.
Name of supervising Geologist/Engineer KATHY GENUENER CH7	M Signed

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WATER RESOURCES DEPT. SALEM, OREGON

(1) OVAPER/RED/REC VIEW VIEW VIEW VIEW VIEW VIEW VIEW VIEW	STATE OF OREGON MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this report are on the last page of this form.	OIN/03E/14DC Start Card # 80,229
3. ATACH MAP WITI LOCATOR DENTIFIED. Map shall include         (3) DRILLING METHOD         (3) DRILLING METHOD         (4) ORLING METHOD         (5) DRILLING METHOD         (6) MOLE MADE WITI LOCATOR MAP WITI LOCATOR DENTIFIED. Map shall include         (7) STATUE WATER LEVEL:         (7) STATUE WATER LEVEL:         (7) STATUE WATER MEANING ZONDS:         (8) WATER BEARING ZONDS:         (9) WELL TEST         (10) Status deal and low wigh         (11) Status deal and status de nandysdor P to completed well          (2) The theorem of the status de nandysdor P to completed well          (11) Status de nandysdor P to completed well          (12) Status de nandysdor P to completed well          (12) Status de nandysdor P to completed well          (12) The theorem of the status de nandysdor P to completed well          (12) The theorem of the status de nandysdor P to completed well          (2) The theorem of the status de nandysdor P to completed well          (2) The theorem of the status de nandysdor P to completed well          (2) The theorem of the status de nandysdor P to completed well          (2) The theorem of the status de nandysdor P to completed well          (2) The theorem of the status de nandysdor P to completed well          (2) The theorem of the status de nandysdor P to completed well          (2) The theorem of the status d	(1) OWNER/PROJECT: WELL NO. <u>MW-15-0)<sup>4</sup></u> Name <u>WM/US Metals</u> Address 5100 5. Malal Rd <u>City Twows dails state</u> <u>Zip 77060</u> (2) TYPE OF WORK: New construction Alteration (Repair/Recondition)	<ul> <li>(6) LOCATION OF WELL By legal description</li> <li>Well Location: Coupty <u>MVHMMMM</u></li> <li>Township <u>100</u> (N or S) Range <u>3E</u> (E or W) Section <u>14</u></li> <li>1. <u>14</u> of <u>5E</u> 1/4 of above section.</li> <li>2. Either Street address of well location <u>5100</u> SUNCLOD <u>B</u></li> <li>or Tax lot number of well location <u>5100</u></li> </ul>
Material Pressure       Index       Index         BORE HOLE CONSTRUCTION       60 WELE REARING CONSTRUCTION       60 WELE REARING CONSTRUCTION         Special Standards       N       Depth of completed well 23       f.         Protective casing       Index       Protective realing       Index       SWIL         Protective casing       Index       Index       SWIL       Index         Monument       Index       Index       Index       SWIL       Index         Monument       Index       Index       Index       Index       Index       Index         Seal       Index       Index <td< td=""><td>Conversion Deepening Abandonment  (3) DRILLING METHOD  Rotary Air Rotary Mud Cable</td><td>3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow. (7) STATIC WATER LEVEL: 13.5 Ft. below land surface. Date 7/13/95</td></td<>	Conversion Deepening Abandonment  (3) DRILLING METHOD  Rotary Air Rotary Mud Cable	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow. (7) STATIC WATER LEVEL: 13.5 Ft. below land surface. Date 7/13/95
BORE HOLE CONSTRUCTION       (8) WATER BEARING ZONSES         special Standards       Depth of completed well	Hollow Stem Auger Other	Artesian Pressure Ib/sq. in. Date
Prinet monument       Casing       Casing       Casing         Material       Casing       Casing       Casing         Material       Material       Casing       Casing         Material       Material       Casing       Casing       Casing         Material       Material       Casing       Casing       Casing       Casing         Material       Material       Casing       Casing       Casing       Casing       Casing         Material       Material       Casing	BORE HOLE CONSTRUCTION Yes No Special Standards Depth of completed well <u>23</u> ft. Protective casing <u>Protective</u> post	(8) WATER BEARING ZONES: Depth at which water was first found3.5 From To Est. Flow Rate SWL
Monument	Land surface	(9) WELLLOG: Ground elevation
Filter	Monument 72.5 ft. 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70	n. <u>Material</u> From To SWL <i>SCITY SANC D 23</i> n. <u><b>RECEIVED</b></u> <u>Nuclear</u> <i>SALE A, OR_GOM</i>
Size 30/40       in.         Size 30/40       in. </td <td>Filter pack 1/7 ft. 70 23 ft. 70 23 ft. 70 23 ft. 70 23 ft. 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70</td> <td>SEP 2 5 1995       WATER RESOURCES DEFT.       SALEM, OREGON       Date started 2/1-3/85</td>	Filter pack 1/7 ft. 70 23 ft. 70 23 ft. 70 23 ft. 70 23 ft. 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70	SEP 2 5 1995       WATER RESOURCES DEFT.       SALEM, OREGON       Date started 2/1-3/85
Remarks:	Size	(unbonded) Monitor Well Constructor Certification: I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief. MWC Number Signed ft. (bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief. MWC Number MWC Number

STATE OF OREGON MULT STATE OF OREGON MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this report are on the last page of this format EM. OF	1997 WELL ID # L 10761 ICES DEPT. Start Card # W 85672
(1) OWNER/PROJECT: WELL NO. MW15-86 Name REYPOLDS METALS COMPANY Address 5100 SUNDIAL ROAD City TROUTDALE State OR, Zip 97060 (2) TYPE OF WORK:	<ul> <li>(6) LOCATION OF WELL By legal description</li> <li>Well Location: County MULTNOMAH</li> <li>Township (Nor S) Range 3 (Eor W) Section 23</li> <li>1 1/4 of 1/4 of above section.</li> <li>2. Either Street address of well location</li> </ul>
New construction Alteration (Repair/Recondition) Conversion Deepening Abandonment (3) DRILLING METHOD	or Tax lot number of well location 3. ATTACH MAPWITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow. (7) STATIC WATER LEVEL:
Rotary Air      Rotary Mud      Cable     Hollow Stem Auger      Other	20 <sup>-</sup> Ft. below land surface.     Date <u>9-23-96</u> Artesian Pressure     lb/sq. in.     Date
Yes No Special Standards Depth of completed well <u>S6</u> ft. Protective casing <u>Protective</u> ement monument Land surface <u>Contraction</u>	(8) WATEK BEAKING ZONES: Depth at which water was first found $20$ From To Est. Flow Rate SWL 30 87 ± 5 GPM 20 (9) WELLLOG: Ground elevation $\pm 39^{-1}$
Monument $Z.5_{ft.}$ $Z.5_{gt.}$ <	Material       From       To       SWL         FILL, CRUSHED ROCK       0       2         SULT, LITE       PROWN       2       30         SAND, MED, BROWN       30       87         Image: Sanstandow of the started
(5) WELL TEST: Pump Bailer Air Flowing Artesian Permeability Yield GPM Conductivity PH Temperature of water 50 CPC Depth artesian flow found ft Was water analysis done? Yes No By whom? CHZMHILL - RMC Depth of strata to be analyzed. From ft. to ft Remarks: Name of supervising Geologist/Engineer WAN GAL /-CUZMAN	abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief. Signed
ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMEN	T SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

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JAN 2 3 1997 WATER RESOURCES DEPT. SALEM, OREGON

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STATE OF OREGON	1997
MONITORING WELL REPORT	WELL ID LIO162 (mended
(as required by ORS 537.765 & OAR 690-240-095) WATEH RESOUR	ICES DEP1. Start Card # W85674 (W 85678)
Instructions for completing this report are on the last page of this contact M, Oh	856787
(1) OWNER/PROJECT: WELLNO. MULD -1 15	(6) LOCATION OF WELL By legal description
Name KEYNULDS MEIALS COMPANY	Well Location: County VIOLI PONIAT
Address DIEU SUNDIAL RUN	1 N A 1/4 of S Ange (E of w) Section
$\frac{Chy}{(2)} TYPE OF WOPK$	2. Either Street address of well location
(2) THE OF WORK.	5100 SUNDIAL ROAD TROUTDALE.OR
New construction 🗌 🔲 Alteration (Repair/Recondition)	or Tax lot number of well location
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include
(3) DKILLING METHOD	20 Et below land surface Date 5/24/96
	Artesian Pressure Ib/sq. in. Date
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES:
Yes No. 17-	Depth at which water was first found
Special Standards Depth of completed well <b>1</b>	From To Est. Flow Rate SWL
Locking cap	DU AU TOOM 20
Protective Casing Protective	
Jement monument	<b>k</b>
Land surface	(9) WELLLOG: Ground elevation <u>± 39</u> -
Monument Casing 7	Material From To SWI
Monument Carlos diameter C	In. Material Mon 10 SWL
The solution of the solution o	CUTUE BOUL 7 30
	SAND MED BROWN 30 87
Liner	SAND, COASE, SOME 87
3D, 3D	in. SPAVELS IOZ
	SAND, MED-FINE 102
Cle	
Z E fr C C Well seal	GOAY 700
TO COSCI AND Material BENTON	THE
16Z ft. 0 0 0 0 0 0 0 0 Amount	
Grout weight	
Borehole diameter	
	DOPEHOUE RELOVALITAL ARANDATED
Filter GS GS	WITH AFLENT GOOT
pack as a E see material SOH 80	PVC
162 ft. Dood E Dood interval(s):	
TO J COND H COND From 165 To 17	
	Data started 5-77-91 Completed
BELOW GRAD	AND
Size 10-40 in.	(unbonded) Monitor Well Constructor Certification:
(5) WELL TEST:	abandonment of this well is in compliance with Oregon well construction
Pump Bailer Air Flowing Artesian	standards. Materials used and information reported above are true to the best
PermeabilityYieldGPM	Tange Licenses, MWC Number 10345
Conductivity PH	Signed JAMES VIGNALL D. JAMP Date 1-15-17
Was water analysis done? Serves No	(bonded) Monitor Well Constructor Certification:
By whom? CHZMHILL - RMC	I accept responsibility for the construction, alteration, or abandonment
Depth of strata to be analyzed. From ft. to	work performed on this well during the construction dates reported above. All ft. work performed during this time is in compliance with Oregon well construction
Remarks;	standards. This report is true to the best of my knowledge and belief.
10 Amil montaile	MWC Number 0067
Name of supervising Geologist/Engineer K (TEHI)EILEK/CHZ	With Usigned U + Troum Date 1.1597

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JAN 2 3 1997 WATER RESOURCES DEPT. SALEM, OREGON

• STATE OF OREGON MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this report are on the last	page of this form.	98	 Start Card #	INIO Alizz	3 E   14	BB	
(1) OWNER/PROJECT WELL NO	101120-026	(6) LO	CATION OF W	ELL By h	ogal descrip	tion	
Name REALDING METALS ID.	· MUD D- 1	Well Loc	ation: County	nilit alam	an uesemp	LION	
Address SUNOTAL ROAD		Township	1 Øor 9	S) Range	.3 Or V	/) Section	14
City TRAITOALE State ORE.	Zip 97060	1	1/4 of A	$\omega$ 1/	4 of above sect	ion.	
(2) TYPE OF WORK:		2. Either	r Street address of w	ell location	S30C	970	dia 60
Image: Wew construction     Image: Alteration (Repaired in the second seco	ir/Recondition)	or Tax lo 3. ATTA	ot number of well loc CH MAP WITH LO	ation	DENTIFIED.	Map shall	include
(3) DRILLING METHOD		approxim (7) STA	nate scale and north	EVEL:			
Rotary Air Rotary Mud	Cable	12	Ft. below lan	d surface.	Date 9-	2-95	,
Hollow Stem Auger Other		Artesian	Pressure	lb/sq. in.	Date		
BORE HOLE CONSTRUCTION		(8) WA	TER BEARING	<b>G</b> ZONES	:		
Yes No		Depth	at which water was f	irst found	72		011/7
Special Standards X Depth of completed	weilft.	17	om 10	Est.	rlow Rate	,	SWL
Protective casing	Locking cap     Protective	14					4
ment monument	post						
Land surface		(9) WE	CLL LOG:	Ground elev	vation		
Monument	Casing — diameter <b>2</b> in.		Material		From	To	, SWL
<u>o</u> ft.	material P/L	GRI	SELT		0	7/2	
	Welded Threaded Glued	C04	KSE GREY	SAND	7/2	26'	12'
	Liner						
	diameter NA in.	R	ECEIVEI	)			<u> </u>
	Welded Threaded Glued						
Seal Seal		S	EP 2 5 1995				
$\frac{D}{TO}$ ft. $OOO$		WATER	RESOURCES	ULPT.			
	Amount C CALS		LEM, OREGO	N			
	Grout weight		- · ·				
	Borehole diameter		414-4-4				-
	in.						
	Bentonite plug at least 3 ft. th	ick					
	interval(s):						
	From 16 To 26						
	FromTo	.		• • • • • • • • • • • • • • • • • • • •			
	Slot size _010 in.						
0000 = 0000	Filter pack:		tarted <u>9-2-9</u>	<u></u>	Completed	9-2-95	
	Size To D in	(unbond	ed) Monitor Well Con	nstructor Cer	tification:		
(5) WEITTEST		<ul> <li>I certi</li> </ul>	ify that the work I pe	rformed on t	he construction	, alteration,	or
Pump Bailer Air	Flowing Artesian	standard	s. Materials used an	d information	n reported abov	e are true to	the best
Permeability Yield	GPM	knowled	ige and belief.	1	M	WC Numbe	10306
ConductivityPH		Signed	A. Tent a	astur	C	ate 9- 7	1-95
Temperature of water 53 OC Depth a	artesian flow found ft	. 1	7				
Was water analysis done? 🗌 Yes 🗌 No		(bonded	) Monitor Well Const	ructor Certif	ication:	or abanda-	ment
By whom?		- work per	rformed on this well	during the co	on, alteration,	or abandon s reported a	bove. All
Depth of strata to be analyzed. From	ft. toft	work pe	rformed during this t	ime is in con	pliance with O	regon well	construction
Remarks:		standard	s. This report is true	e to the best of	of my knowledg	e and belie	f. 1/Dan //
		-	100		M	WC Numbe	1000
Name of supervising Geologist/Engineer		Signe	4/10/	no		ate 12	125

STATE OF OREGON Mult JAN 23 MONITORING WELL REPORT 52863 (as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this report are on the last page of this for Straller, CC	1997 NOAS TREPT. WELL ID# L10763 Start Card #_W79938
(1) OWNER/PROJECT: WELL NO. MWZ1-63 Name REYNOLDS METALS COMPANY Address 5100 SUNDIAL POAD City TROUTDALE State OR Zip 97060 (2) TYPE OF WORK:	<ul> <li>(6) LOCATION OF WELL By legal description</li> <li>Well Location: County <u>MULTPO MAH</u></li> <li>Township <u>I</u> (N br S) Range <u>3</u> (E)r W) Section <u>23</u></li> <li>I. <u>NW</u> 1/4 of <u>NE</u> 1/4 of above section.</li> <li>2. Either Street address of well location <u>FIOU FIDALECK</u></li> </ul>
New construction       Image: Alteration (Repair/Recondition)         Image: Conversion       Image: Deepening       Image: Abandonment	or Tax lot number of well location
(3) DRILLING METHOD  [ Rotary Air [ Rotary Mud Cable ] Hollow Stem Auger Other	(7) STATIC WATER LEVEL: 18 Ft. below land surface. Date 10-3-96 Artesian Pressure lb/sq. in. Date
(1) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES:
Yes No CO	Depth at which water was first found
Special Standards $\Box$ $\chi$ Depth of completed well <u>63</u> ft.	From To Est. Flow Rate SWL
Protective casing Locking cap	20 67 IS GPM 18
Protective post	
vement monument	
	(0) WELLLOC
Land surface	(9) WELLLOG: Ground elevation $-3t^{-1}$
Monument Social diameter Z in	n. Material From To SWL
Oft. and the second material SCH80 P	VC FILL, CRUSHED ROCK O Z
- TO COSD Welded Threaded Glued	SILT, BROWN Z 8
	SAND, F-M, BICUN 8 64
b S o S liner	
	n.
Welded Threaded Glued	
Seal Soo	·
2.5 ft. 800 Well seal:	
TO 2 0000 Material BENTONIK	-G.
$51 \text{ ft}$ $33 \text{ amount} \frac{4-50\text{ FB}}{2000}$	
Grout weight <u>1.6</u>	
3Deso Borenote chameter	
$p_{2} = p_{2} = p_{2$	thick
Filter	
pack 0.50 E material SCH 80 P	
$\bigcup_{i=1}^{21} ft.$ $\begin{bmatrix} 22 & 0.6 \\ 0.0.5 \end{bmatrix} = \begin{bmatrix} 22 & 0.6 \\ 0.0.5 \end{bmatrix}$ interval(s):	
$-64^{\circ}$ $\langle \circ \circ \circ \circ \rangle$ $\exists \circ \circ \circ \circ \circ \rangle$ $\exists \circ $	
$\square$	
Filter pack:	Date started 9-30-96 Completed 10-3-96
CROC POROC Material SILKA SA	1D
<u>Size</u> <u>20/40</u> in.	(unbonded) Monitor Well Constructor Certification: I certify that the work 1 performed on the construction, alteration, or
(5) WELL TEST:	abandonment of this well is in compliance with Oregon well construction
Pump Bailer Air Flowing Artesian	standards. Materials used and information reported above are true to the best knowledge and belief.
Conductivity PH	Simular Thursday MWC Number 10102
Temperature of water 50 CFC Depth artesian flow found f	SignedDate JAN 13,717
Was water analysis done? X Yes No	(bonded) Monitor Well Constructor Certification:
By whom? CHZMHILL - EMC	I accept responsibility for the construction, alteration, or abandonment
Depth of strata to be analyzed. From ft. to ft.	t. work performed during this time is in compliance with Oregon well construction
Remarks:	standards. This report is true to the best of my knowledge and belief.
When the Print Print PO Cit	MWC Number 10067

Name of supervising Geologist/Engineer KATHY GEHWEILER CHZM Signer Date 1.15.97 ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER



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M. 14 IAN 23 19	97 97	
STATE OF OREGON	110711	
MONITORING WELL REPORT 5286 WATER RESOURCE	ES DEPT. <u>LIU/64</u>	
(as required by ORS 537.765 & OAR 690-240-095) SALEM, OREC	GON Start Card # W79939	
Instructions for completing this report are on the last page of this form.	·	
(1) OWNER/PROJECT: WELL NO. MWZI-176	(6) LOCATION OF WELL By legal descr	iption <sup>,</sup>
Name REVNOLDS METALS COMPANY	Well Location: County MULTNOMAH	
Address 5100 SUNDIAL RDAD	Township No S) Range 3 (E)	r W) Section Z3
City TROUTDALE . State OR Zip	1. <u>NW</u> 1/4 of <u>NE</u> 1/4 of above s	ection.
(2) TYPE OF WORK:	2. Either Street address of well location	
	5100 SUNDIAL ROAD -	recutrate, or
New construction Alteration (Repair/Recondition)	or Tax lot number of well location	
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIEI	). Map shall include
	approximate scale and north arrow.	
(3) DRILLING METHOD	(7) STATIC WATER LEVEL:	21-21
Rotary Air 🗌 Rotary Mud 🔀 Cable	Ft. below land surface. Date	211646
Hollow Stem Auger Other	Artesian Pressure lb/sq. in. Date	
	(P) WATER DEADING ZONES.	
BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES:	
	Depth at which water was first found	011/1
Special Standards Depth of completed well 120 ft.	Prom Io Est. Flow Rate	SWL A CO-
Locking cap	20 340 5-150 GT	
Protective casing Protective		
post		
		· · · ·
	(9) WELLLOG: Ground elevation + =	27-
Land surface		ų
Monument Casing	Material From	To SWL
	PISHED BASAIT O	7
TO DAND I DAND Welded Threaded Glued	SUT BOOUN Z	A A
	SAND, F-M, BROWNI B	
	WOOD FRACATENTS	67
20. 20 120 20 diameter in	GRAVEL SAND 67	
	ANFULAD	77
Welded Threaded Glued	GRAVELS DENKE 72	
	PARTIAL CENENTATION	152
7.5ft Q8 D Well seal: BEAUTA JIT	E SAND, F-C WITH 152	
TO ANO Material SCH 80 PV	C GRAVELS F-C	164
163 ft. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	S SAND, M-C, GRAY 164	205
Co C Grout weight 9,8	SILT, M, GRAY, GREEN ZOS	215
Borehole diameter	SAND, F-C, GRAY ZIS	218
in.	GRAVEL, F-C, GRAV ZIB	Z45
DDDD	ick SILT, M, GRAY 245	247
Filter ( 0 C Screen	SAND, F-C, GRAY 247	
pack o so a a so a material 2011 EO WC	SOME GRAVELS	261
ft.   Doog = D000 interval(s):	ERAVEL, DENSE 267	286
	SAND, MED, GRAY 785	322
1/5 ft. ↓ wo with E wo with FromTo	GRAVEL, CEMENTED 322	345
BELOW IB Sold E Slot size <u>.010</u> in.	BASALT, GRAY BLACK 345	360
BENTONTE OR OF FILTER PACK	Date started Completed Completed	0-12-46
GROUT 0800 Material SILICA SAN	(unbonded) Monitor Well Constructor Certification:	
Size <u>10-40</u> in.	<ul> <li>I certify that the work I performed on the construction</li> </ul>	on, alteration, or
(5) WELLTEST:	abandonment of this well is in compliance with Oregon	well construction
Pump Bailer Air Flowing Artesian	standards. Materials used and information reported abo	ve are true to the best
PermeabilityYieldGPM	1. han i	1WC Number 1000
ConductivityPH	Signed Monne Manua	Date 1-15-9+
Temperature of water <b>50</b> °F/C Depth artesian flow found ft.		
Was water analysis done? Yes $\square$ No	(bonded) Monitor Well Constructor Certification: I accept responsibility for the construction, alteration	1. or abandonment
By whom? CHZINHILL - KINC	work performed on this well during the construction da	tes reported above. All
Depth of strata to be analyzed. From ft. to ft.	work performed during this time is in compliance with	Oregon well construction
Kemarks:	standards. This report is true to the best of my knowle	
Name of supervising Geologist/Engineer IVAL ) CALL CHITANUIL	lace 1	Data AKAS
	Signe	



JAN 2 3 1997 WATER RESOUNCES DEFIN

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	Oregon Water Reso	urces Department
re In	QUEST FOR WRITTEN APPROVAL TO	USE CONSTRUCTION METHODS NOT IVE RULES 690-200 THROUGH 690-240
fore : Wei the i	request can be considered, the following mail Construction Specialist, Water Resources appropriate Regional Manager.	ust be answered. Requests shall be submitted to s Department. Requests muy also be considered
ie of	frequest JUNE 26,1996	
ndec	d Well Constructor (name, license and mai	ling address): ERIC HANSEN
O	36 MOUNTAIN HWY GR	AHAM WA. 98338 LK # 10067
۰.	Location of Well: 1/4 1/4	of Section Township
	Range 3E	MULTNOMAH County.
	Address at well site: 5100 SUN	DIAL ROAD "
	TROUTDAL	E, OR,
	Start Card Number(s): MULIO, 08, 21	27 W85671, W85712, W79939, W857
	Name and Address of Land Owner:	EYNOLDS METALS COMPANY
	The distance to the nearest well, septic tax	ik or drainfield (if water supply well):
	The distance to the nearest well, septic tax OVER 500 FT. The unusual conditions which necessitate	this request: FORMATION MATERIAL
	The distance to the nearest well, septic tax OVER 500 FT. The unusual conditions which necessitate (PMPOED OF LOOSE SANDS	this request: FORMATION MATERIAL WHICH HEAVES BADLY, GEOLOGIST WA
- 	The distance to the nearest well, septic tax <u>OVER 500 FT</u> . The unusual conditions which necessitate <u>CEMPOED OF LOOSE SANTOS</u> <u>TO EUSURE ADEQUATE SUN</u> <u>FLL SUREADEQUATE SUN</u>	ik or drainfield (if water supply well): this request: FORMATION MATERIAL WHKH HEAVES BADLY, SECIOGIST WA CA SAND THICKNESS BETWEEN BASE WITE SLURRY SEAL BELOW IT, te well constructor believes will be adequate for D
(  W	The distance to the nearest well, septic tax OVER 500 FT. The unusual conditions which necessitate (DMPO:E) OF LOOSE SANDS TO ENSURE ADEQUATE SLU FLL SILEEN & TOP OF HENTO The proposed construction methods that the this well (attach additional pages if needed FER DIAGRAM	ik or drainfield (if water supply well): this request: <u>FORMATION MATERIAL</u> WHICH HEAVES BADLY, GEOLOGIST WA CA SAND THICKNESS BETWEEN BASE WITE SLURRY SEAL BELOW IT, he well constructor believes will be adequate for )
	The distance to the nearest well, septic tax <u>OVER</u> 500 FT. The unusual conditions which necessitate <u>(PMPOED) OF LOOSE SANDS</u> <u>TO EUSURE ADEQUATE SUN</u> <u>FLL SILEEN &amp; TOP OF FENTO</u> The proposed construction methods that the this well (attach additional pages if needed <u>FE2</u> DiAGRam	ik or drainfield (if water supply well): this request: <u>FORMATION MATERIAL</u> WHKH HEAVES BADLY, SECIOGIST WA CA SAND THICKNESS DETUCEN BASE WITE SUPPLY SEAL BELOW IT, the well constructor believes will be adequate for D
i u	The distance to the nearest well, septic tax <u>OVER 500 FT</u> . The unusual conditions which necessitate <u>(DMROSE) OF LOOSE SANDS</u> <u>TO ENSURE ADEDUATE SUN</u> <u>FLL SUREN &amp; TOP OF HENTO</u> The proposed construction methods that the this well (attach additional pages if needed <u>FER</u> DIAGRAM	ik or drainfield (if water supply well): 1.20 this request: <u>FORMATION MATERIAL</u> WHKH HEAVES BADLY, SECIOGIST WA CA SAND THICKNESS BETWEEN BASE WITE SLURRY SEAL BELOW IT, ne well constructor believes will be adequate for 1)
- 141	The distance to the nearest well, septic tax <u>OVER 500 FT</u> . The unusual conditions which necessitate <u>(EMPOSE) OF LOOSE SANDS</u> <u>TO ENSURE ADEDUATE SUN</u> <u>FLL SUREN &amp; TOP OF HENTO</u> The proposed construction methods that the this well (attach additional pages if needed <u>FER</u> DIAGRAM	ik or drainfield (if water supply well): this request: <u>FORMATION MATERIAL</u> WH KH HEAVES BADLY, SECIOCIST WA CA SAND THICKNESS BETWEEN BASE UTTE SLURRY SEAL BELOW IT, the well constructor believes will be adequate for D
	The distance to the nearest well, septic tax <u>OVER 500 FT.</u> The unusual conditions which necessitate <u>(EMPOSE) OF LOOSE SANDS</u> <u>TO ENSURE ADEDUATE SUN</u> <u>FLL SUREN &amp; TOP OF HENTO</u> The proposed construction methods that the this well (attach additional pages if needed <u>FER</u> DIAGRAM	ik or drainfield (if water supply well): this request: <u>FORMATION MATERIAL</u> WHKH HEAVES BADLY, SECIOCIST WA CA SAND THICKNESS BETWEEN BASE UTTE SLURRY SEAL BELOW IT, re well constructor believes will be adequate for )
	The distance to the nearest well, septic tax <u>OVER 500 FT.</u> The unusual conditions which necessitate <u>(DMPOSE) OF LOOSE SANDS</u> <u>TO EUSURE ADEQUATE SUU</u> <u>FLL SUPER A TOP OF FENTO</u> The proposed construction methods that the this well (attach additional pages if needed <u>FER</u> DIAGRAM	ik or drainfield (if water supply well): this request: <u>FO2MATION MATERIAL</u> WH KH HEAVES BADLY, SECIOCAST WA CA SAND THICKNESS BETWEEN BASE UTTE SLUPPLY SEAL BELOW IT, re well constructor believes will be adequate for D MATERIAL UTTE SLUPPLY SEAL BELOW IT, re Well constructor believes will be adequate for D JAN 2 3 1997

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(7) Diagram showing the pertinent features of the proposed well design and construction (attach additional pages if needed):



## PLEASE NOTE:

- (1) If approved, all other phases of well construction must comply with the appropriate standards described in OAR 690-200 through 690-240.
- (2) If it should be determined at some future date that the well, due to its construction, is allowing groundwater contamination, waste or loss of artesian pressure, the undersigned shall return to the site and rectify the problem.
- (3) If verbal approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of verbal approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge.

Bonded Constructor Signature:	- 10067
VERBAL APPROVAL ROB CARTLE LIA	CHEMHILL
For Water Resource	s Department Use Only
Date:	
Approved by:MAAK	Denied by:
Remarks:	revised; 4-P5
	En and Anna and Anna and Anna and
	JAN 2 3 1997
	WATER PRECIMUES DEPT.
	SALEM, CREGON
	:

• STATE OF OREGON MUL	T II	1.
MONITORING WELL REPORT	$q\eta = OIN/03\varepsilon$	-/14BB
(as required by ORS 537.765 & OAR 690-240-095)	Start Card # <u>81473</u>	
(1) OWNER/PROJECT WELL NO ANIV27-227	(6) LOCATION OF WELL By legal of	lescription
Name REVANDS ATTERIS CO.	Well Location: County MULT	lescription
Address SUNDEAL ROAD	Township (Por S) Range _3	(For W) Section 14
City TROUTDALE State ORE Zip 97060	1. NW 1/4 of NW 1/4 of at	ove section.
(2) TYPE OF WORK:	2. Either Street address of well location	<u>sou sinalal</u>
New construction Alteration (Renair/Recondition)	or Tax lot number of well location	970
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENT	IFIED. Map shall include
	approximate scale and north arrow.	-
(3) DRILLING METHOD	(7) STATIC WATER LEVEL:	a care
Kotary Aur     Kotary Mud     Cable	Ft. below land surface. Da	te <u>7-6-95</u>
Other		
BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES:	
Yes No	Depth at which water was first found	
Special Standards Depth of completed well ft.	From To Est. Flow R	ate SWL
Protective casing Locking cap		
Protective post		
ment monument		
	(9) WELLLOG: Ground elevation	
Monument South and the diameter 2 in	. Material F	rom To SWL
$\mathbf{O}$ ft. $\mathbf{O}$ ft. $\mathbf{O}$ $\mathbf{O}$ $\mathbf{O}$ material $\mathbf{P}/\mathbf{C}$	BROWN STUT	9/2
TO COSU Welded Threaded Glued	GREY SALD	12 28 11
- $        -$		
3P. 3P. 3P. 3P. 3P. diameter AA in		
$\mathcal{C}^{\mathbb{R}}$	RECEIVED	
TO TO Material BENT CHIOS	SEP 2 5 1995	
15 ft. 0.200 Amount 9 BALS	WATER RESOURCES DEPT	
$\sim$	SALEM, OREGON	
Des Borehole diameter		
2000	hick	
Filter $O^{\&} O^{\&} O$ Screen		
$\mathbf{P}^{\mathrm{ack}}$ / $\mathbf{P}^{\mathrm{ack}}$ = $\mathbf{P}^{\mathrm{ack}}$ material $\mathbf{P}^{\mathrm{c}}$	-	
$\begin{array}{c c} \hline & & \\ \hline \\ \hline$		
$-28$ ft $352$ $\pm 523$		
$G_{\alpha}$ $G_{\alpha}$ $G_{\alpha}$ $G_{\alpha}$ Filter pack:	Date started 9-6-95 Comp	leted 9-6-95
Geoge Geoge Material ColorAdo a	(unbonded) Monitor Well Constructor Certificati	on:
(5) WELL TEST:	I certify that the work I performed on the con abandonment of this well is in compliance with (	struction, alteration, or Dregon well construction
Pump Bailer Air Flowing Artesian	standards. Materials used and information repor	ted above are true to the best
PermeabilityYieldGPM	knowledge and belief.	MWC Number 10506
Conductivity PH Temperature of water and AFC Double static flow found	Signed J. furt latter	Date 7-7-95
Was water analysis done? Yes $\square$ No	(bonded) Monitor Well Constructor Certification	:
By whom?	I accept responsibility for the construction, al	teration, or abandonment
Depth of strata to be analyzed. From ft. to ft	work performed during this time is in compliance	e with Oregon well construction
Remarks:	standards. This report is true to the best of my k	nowledge and belief.
Name of supervising Geologist/Engineer	Signed _ Man	Date 9/205

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7.40	STATE OF OREC	ON	matt	FFIVED	OINO	25/20	IRC	
. 1VI ( (as r	required by ORS 537.765 & (	DAR 690-240-095)	HUM F	Start Ca	rd # \$102	36	100	
į Ins	structions for completing this	report are on the last	Dage of this form.	AUG 1 6 1995				
'(1)	OWNER/PROJECT:	noto Vell NO.	<u>7E-2</u>	(6) LOCATION (	FWELL By le	gal descri	ption	
<u>Nan</u>	ne Keyrious	ILICIA POL	MU25-025 WAI	SALEM in OREGRI	Nor S) Range	E (E or	W) Section	ร้น
City	Trintdale	State	Zip 97060	1. <u>SW</u> 1/4 of	NW	f of above sec	tion.	
(2)	TYPE OF WORK:			2. Either Street addre	ss of well location	51005	<u>Soud</u>	sal Rot
		C Alternation Observi		woutda	Le OK	_ ~	$\mathcal{N}_{\mathcal{O}}$	
	Conversion	Deepening	Abandonment	3. ATTACH MAPWI	TH LOCATION II	DENTIFIED	Map shall	include
				approximate scale and	l north arrow.		hing on an	
(3)	DRILLING METHO	D		(7) STATIC WAT	ER LEVEL:			
	Hollow Stem Auger	Rotary Mud     Other	Cable	Artesian Pressure	ow land surface. lb/sq. in.	Date	i <b>Gs</b> uly	95
4	BORE HOLE CONS	FRUCTION		(8) WATER BEA	RING ZONES:			
	Yes No		7-1	Depth at which water	was first found			
Spec	cial Standards 🗶 🗌	Depth of completed	well <u>35</u> ft.	From T	b Est. F	low Rate		SWL
Prot	ective casing		Locking cap					
			Protective post					
	ement monument							
			N. A.	(9) WELLLOG	Ground alay	ation		
			Casing	()) WEEE LOG.				-
MOR	nument Social	- Cood	- diameter 2 in.	Material	Λ	From	10	SWL
JAN.		Nego of	Welded Threaded Glued	A	1		33	
Г <sup>о.</sup>	ft. ] = 0°C	Bood						
	225		Liner					
			diameter in.					
			Welded Threaded Glued	- A FI	AFEA			
:	Seal 000			RECE				
-	(2 ft.) Sos	1 800	- Well seal:		- RECE			
	<b>79</b> ft		Amount Jacon S	SEP 2	DEPT			
	So C	2003	Grout weight	WALCH KES	OFFGON			
	00 C		Borehole diameter	SALEM			<u></u>	<u> </u>
			In. Bentonite plug at least 3 ft ti	hick				
F		0.80	Screen					
F	back 000		- material <u>Sch4010</u>					
	29 ft. 2005	2000	interval(s):					
	<b>35</b> ft.		From To					
-			Slot size <u>alo</u> in.					
	0 G 0		Filter pack:	Date started 24	July 95	Completed	24 July	195
		Coord	Size 20/4/17 in.	(unbonded) Monitor W	ell Constructor Cert	ification:		
(5)	WELL TEST:			I certify that the wo abandonment of this w	rk I performed on the ell is in compliance	e constructio with Oregon	n, alteration, well constru-	or ction
	Pump Bail	ler 🗌 Air	Flowing Artesian	standards. Materials u	sed and information	reported abo	ve are true to	the best
	Permeability	Yield	GPM		yen -	N	IWC Number	10316 MA WOL
	Temperature of water	J °F/C Depth a	rtesian flow found fi	Signed	10 5		Date <u>~ 6</u>	LVIVY7)
	Was water analysis done? [	Yes No	Matimut and a second	(bonded) Monitor Wel	Constructor Certifi	cation:	on character	mont
	By whom?			<ul> <li>accept responsibil</li> <li>work performed on this</li> </ul>	s well during the co	nstruction dat	es reported a	bove. All
	Depth of strata to be analyz	ed. From	_ tt. toft	<ul> <li>work performed during standards. This report</li> </ul>	this time is in com	pliance with f my knowled	Dregon well of loc and helie	construction f.
	Kemarks:					, kilowice N	fWC Number	1.0011
	Name of supervising Geolo	gist/Engineer		Signed may //	n Klus		Date 8/11	195

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STATE OF OREGON MULT MONITORING WELL REPORT 52860 JAN 2 9 1997	WELL 10# L10766
(as required by ORS 537.765 & OAR 690-240-095)	Start Card #_W85715
(1) OWNER/PROJECT: WELL NO. MWZ7-176 Name REYNOLDS METALS COMPANY	(6) LOCATION OF WELL By legal description Well Location: County MULTNOMAH
City TPOVITDALE: State OP Zin 97060	1. $\mathbf{N}\mathbf{W}$ 1/4 of $\mathbf{N}\mathbf{W}$ 1/4 of above section.
(2) TYPE OF WORK:	2. Either Street address of well location
	5100 SUNDIAL ROAD, TROUTDALE, OR
New construction  Alteration (Repair/Recondition) Conversion Deepening Abandonment	or Tax lot number of well location
(3) DRILLING METHOD Rotary Air  Rotary Mud Cable Hollow Stem Auger Other	(7) STATIC WATER LEVEL:         1Z         Ft. below land surface.         Date         Artesian Pressure         Ib/sq. in.         Date
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES
Yes No	Depth at which water was first found 20
Special Standards Depth of completed well 176 ft.	From To Est. Flow Rate SWL
	20 222 5-150 GPM 20-
Protective casing	
post	
Cement monument	S
Land surface	(9) WELLLOG: Ground elevation + 38-
Casing	
Monument	n. Material From To SWL
$D_{\text{ft.}}$ $O_{\text{ft.}}$ $O_{$	PVC FILL O I
$70 \langle 082 \rangle$ Welded Threaded Glued	SILT W/SAND BR. 1 11
	SAND, F-M 11 15
SD SD	SAND WYSILL BR 10 CO
	GPAN WET 70 60
Welded Threaded Glued	SAND, DARK GRAY
Seal Seal	SOME VEGETATION 60 100
2.5 ft. $3.5$ ft. Well seal:	GRAVEL, GRAY VERY
TO 2 0.0°0 Material BETVICUIE	G. DEUSE, WOOD 100 132
164 ft. Amount <u>691-50 BA</u>	E GRAVEL, BICOWN
Grout weight	CONVEL CONVENT 175 178
Borenoie diameter	SAND F-M BOTH 178 195
D D D BD Bentonite plug at least 3 ft. t	hick GRAVEL, BLACK 195 197
Filter C <sup>®</sup> C	SAND, GRAY, F-C 197 203
pack o Sec a to sec material SCHEO PV	GRAVEL, BLACK 203 ZZZ
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	BASALT, WEATHERED ZZZ Z47
$172$ $\langle 0000$ $\exists 0000$ $\exists 0000$	BASALT, BLACK 241 260
$\begin{array}{c c} \mathbf{I} \mathbf{D} \mathbf{R} \\ \mathbf{D} \mathbf{A} \mathbf{D} \\ \mathbf{D} \mathbf{A} \mathbf{D} \\ \mathbf{D} \mathbf{A} \mathbf{D} \\ \mathbf{E} \\ \mathbf{E} \\ \mathbf{D} \mathbf{A} \mathbf{D} \\ \mathbf{E} \\$	BORDER BEIOW 178 ABAND WERT TON THE
Filter pack:	Date started 7-8-96 Completed 8-16-96
CROC Material SILICA SAM	
Size 20/40 in.	(unbonded) Monitor Well Constructor Certification:
(5) WELL TEST:	abandonment of this well is in compliance with Oregon well construction
Pump Bailer Air Flowing Artesian	standards. Materials used and information reported above are true to the best knowledge and belief.
Conductivity DH	MWC Number 10102
Temperature of water 50 (PFC Depth artesian flow found fr	Signed Date Date Date 13, 17
Was water analysis done? Yes No	(bonded) Monitor Well Constructor Certification:
By whom? CHZMHILL - RIMC	accept responsibility for the construction, alteration, or abandonment
Depth of strata to be analyzed. From ft. to ft	work performed during this time is in compliance with Oregon well construction
Remarks:	standards. This report is true to the best of my knowledge and belief.
Name of supervising Geologist/Engineer WAL! CTALL - CHIZNIHI	U. Signed MWC Number 10067



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	Oregon Water Reso	urces Department
R	EQUEST FOR WRITTEN APPROVAL TO INCLUDED IN OREGON ADMINISTRAT	USE CONSTRUCTION METHODS NOT IVE RULES 690-200 THROUGH 690-240
Befor the W by the	re request can be considered, the following m /ell Construction Specialist, Water Resource e appropriate Regional Manager.	ust be answered. Requests shall be submitted to s Department. Requests may also be considered
Date	of request JUNE 26,1996_	
Bond	ed Well Constructor (name, license and mai	ling address): ERIC HANSEN
30	36 MOUNTAIN HWY GR	AHAM WA 93338 LK # 10067
(1)	Location of Well: 1/4 1/4	of Section, Township,
	Range <u>3E</u>	MULTNOMAH County.
	Address at well site: 5100 SUN	DIAL ROAD "
	TROUTDAL	E, OR,
(2)	Start Card Number(s): MW 10, 08, 21	27 (W85671, W85712, W79939, W85715)
(3)	Name and Address of Land Owner:	EYNOLDS METALS COMPANY
(5)		
(4)	The distance to the nearest well sentic ter	ik or drainfield (if water supply well):
(5)	The unusual conditions which necessitate	this request: <u>TOIOMALION MATERIAL</u>
	(CEMPOZE) OF LOOSE SANDS	WHICH HEAVES BADLY, GEOLOGIST WANTS
(6)	TO ELSURE ADEQUATE SLI WELL SILEEN & TOP OF HENTO The proposed construction methods that il this well (attach additional pages if needed	CA SAND THICKNESS BETWEEN BASE OF NITE SLURRY SEAL BELOW IT, he well constructor believes will be adequate for D
	FER DIAGRAM	
	125	] } 
		JAN 2 3 1997
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(7) Diagram showing the pertinent features of the proposed well design and construction (attach additional pages if needed):



## PLEASE NOTE:

- (1) If approved, all other phases of well construction must comply with the appropriate standards described in OAR 690-200 through 690-240.
- (2) If it should be determined at some future date that the well, due to its construction, is allowing groundwater contamination, waste or loss of artesian pressure, the undersigned shall return to the site and rectify the problem.
- (3) If verbal approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of verbal approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge.

Bonded Constructor Signature:	tance 10067
VERBAL APPROVAL ROS CARTER LIA	HEMHILL
For Water Resources	Department Use Only
Date:7-9-96+-2-4-4	nan 192 192 192 194 194 194 195 195 195 195 195 195 195 195 195 195
Approved by:Mthh	enled by:
Remarks:	ravised: 4.96
	JAN 2 8 1907

STATE OF OREGON MONITORING WELL REPORT	MULT JAN	<b>3 1 1</b> 997 —	00	LO	3001
(as required by ORS 537.765 & OAR 690-240-095)	Sog P WATER BES	OURCES DEPT	art Card #	aaa	
(1) OWNER/PROJECT: WELL NO.	0. MW31 SELEM	, ORELIONATION Well Location: Cou	OF WELL By leg	al description	l
Address 5100 Syndial Ro	<u> </u>	Township /	(N or S) Range 3	<u>E (E</u> or W)	Section 22
		2. Street address of	well location	of above section.	nailine
(2) I I PE OF WORK:	Recondition	2 Tow lot membres	E-mail location	V DRUDO	<u>()</u>
Conversion Deepening	Abandonment	4. ATTACH MAP	WITH LOCATION I	DENTIRIED	
(3) DRILLING METHOD		(7) STATIC WA	TED LEVEI .		
Rotary Air Rotary Mud     Hollow Stem Auger Other		<u> </u>	low land surface. elb/sq. in.	Date_/2// Date	3/97
(4) BORE HOLE CONSTRUCTION			ADDIC ZONES.		
Special Standards Yes No. Depth of completed	i well_ <u>95_</u> ft.	(8) WATER BE Depth at which w	AKING ZONES: vater was first found To Ref. Fi	ow Rate	SWI.
	Locking cup	g.c.	95 76	pm	85
0			<u>, , , , , , , , , , , , , , , , , , , </u>		
Protective casing	Protective			······································	
$\sim$	post				
Land surface		(9) WELL LOG	Ground elev	ation	
Monument		() Materi	<b>al</b>	Bener	
<u>'5</u> ft	Casing ~ 3	Silting	and william		10 SWL
	material PVC SLHV	0 7.01			4 82
	Welded Threaded Glued	Graves	sand med	24 a	7 0.5
		fine	toment		
	diameter <u>h</u> in.	Coar	SP.	9	3 8.5
Seal Official Contract	material Welded Threaded Glued				
- 3.			· · · · · · · · · · · · · · · · · · ·		
	Well scal:	Net		· .	
82 n	Amounit 18 SUCK	5			
	Borehole diameter			· · · ·	
$\sim$	in.				
	Bentomite plug at least 2 ft.	thick			
Filter pack	Screen	· · · · · · · · · · · · · · · · · · ·			
82n Brit	material FVC				
	Prom 85 To 95	1			
$95_{\text{m}}$	From To		•••		
		·			
	Material	Date started	12/5/910 c	Completed	13/916
	Shiven un	(unbonded) Monitor	Well Constructor Certifi	ication:	
(5) WELL TEST:		abandonment of this	work I performed on the work I performed on the	construction, altera ith Oregon well con	tion, or Instruction
		standards. Materials	used and information re	ported above are tr	ue to the best
Conductivity DU				MWC N	umber 10023
Temperature of water 54° °F/C Depth artes	sian flow foundft.	Signed Lint	johangen_	Date	-23-97
Was water analysis done? Yes No		(bonded) Monitor W	of Constructor Certifica	tion:	donmort
By whom?	ft to ft	work performed on t	his well during the const	n, and ration, or abai intruction dates repor	ted above. All
Remarks:	1t.	work performed duri	ing this time is in compli-	ance with Oregon	well construction
		Summarus. The repu	RAL.T.	MWC N	umber 10098
Name of supervising Geologist/Engineer		Signed_Phys	PJUND	Date	-28-97_

STATE OF OREGON MUH 52266		<u>-</u>
(as required by ORS 537.765 & OAR 690-240-095) WELL D. # 5.	513 Start Card # 93714	
(1) OWNER/PROJECT: WELL NO. 2 M W 37-0[2	(6) LOCATION OF WELL By legal description	
Name Reynolds metals	Well Location: CountyMulthomah	
Address 5/20 Sundial Md.	Township $/N$ (N or S) Range $3F$ (E or W) Section $/4$	
(2) TYPE OF WORK:	2. Either Street address of well location 5100 SAtal Re	1
	(ro-tdale, or	
New construction     Alteration (Repair/Recondition)     Conversion     Deepening     Abandonment	<ul> <li>3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.</li> </ul>	)
(3) DRILLING METHOD	(7) STATIC WATER LEVEL:	
Rotary Air     Rotary Mud     Cable       Hollow Stem Auger     Other	Y     Ft. below land surface.     Date     76       Artesian Pressure     Ib/sq. in.     Date	
BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES:	
V Yes No Z	Depth at which water was first found	
Special Standards Depth of completed wellft.	17 4	
Now e Vault 2.		
$g^{\prime\prime}$ $3 \text{ ft.}$ Water-tight cover		
$3_{\text{ft.}}$		
Casing 7	(9) WELLLOG: Ground elevation	
300 $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$ $300$	Material From To SWI	L
Welded Threaded Glued	Sand 0 9	
	Silty Sand 4 10	
Seal So C Liner	gray silt 10 12	
$$ ft. $\begin{bmatrix} 0 & S & 0 \\ 0 & D & 0 \end{bmatrix}$ $\begin{bmatrix} 0 & S & 0 & S \\ 0 & D & 0 \end{bmatrix}$ $\begin{bmatrix} 0 & S & 0 & S \\ 0 & D & 0 \end{bmatrix}$ in.		{
Welded Threaded Glued		
	· .	
-ft. de all de la Material Ben fon itc		
20°20 Amount Ychips -		
Grout weight		
Borehole diameter		
$D_{0}$ $D_{0$		
Filter $G^{\otimes} G^{\otimes} = G^{\otimes} G^{\otimes} G^{\otimes} = G^{\otimes} G^{\otimes}$	NOV 2 0 1996	
pack so a log a interval(s):		
5  ft $90002$ $10002$ $10002$ $10002$ $1007$	WATEH RESOURCES DEPT.	
$\sim$ 70 $\langle$ $\sim$ 00 $\rangle$ $\rangle$ $\rangle$ $\sim$ 00 $\rangle$	SALLIN, OALGON	
Sand Material Sand	Date started 10-23-96 Completed 10-23-96	
$\begin{bmatrix} 0.00 \\ 0.00 \\ 0.00 \end{bmatrix} = \begin{bmatrix} 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \end{bmatrix}$ in.	(unbonded) Monitor Well Constructor Certification:	
(5) WELL TEST	<ul> <li>I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction</li> </ul>	
Pump Bailer Air Flowing Artesian	standards. Materials used and information reported above are true to the best	t
PermeabilityYieldGPM	knowledge and belief MWC Number /0 4	108
Conductivity PH Temperature of water <b>SB</b> °F/C Depth artesian flow found ft	Signed	6
Was water analysis done? $\square$ Yes $\square$ No	(bonded) Monitor Well Constructor Certification:	
By whom?	I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above A	11
Depth of strata to be analyzed. From ft. to ft.	work performed during this time is in compliance with Oregon well construct standards. This report is true to the best of my knowledge and belief	tion
	MWC Number 10	011
Name of supervising Geologist/Engineer	Signed Date 1/1/5/9	6



STATE OF OREGON	Received Date 12/23/1996
MONITORING WELL REPORT MULT	52473 Well ID Tag# L 5576
(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this	s report are on the last page of this form. Start Card # 93803
(1) OWNER/PROJECT Well No. NN 27-030	(6) LOCATION OF WELL By legal description
Co Job No.	County Multnomah
Name	Township 1.00 N Range 3.00 E Section 14
REYNOLDS METALS	1. SW 1/4 of SE 1/4 of above section.
Street 5100 SUNDIAL RD	Legal Desc:
	2. Either Street address of well location
(2) TYPE OF WORK	SAME
New Construction	or Tax lot number of well location 100
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arro
(3) DRILLING METHOD	(7) STATIC WATER I EVEL
Rotary Air Rotary Mud Cable	11.0 Ft. below land Date 12/09/1996
Hollow Stem Auger Other *****	Artesian Pressure Ibiso, In. Data
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES
Special Standards Depth of completed well 30 ft.	Depth at which water was first found 12 ft.
Dlameter From To Begin End Material 8.00 0.00 30 Material Depth Units Bentonite 0.00 22.00 9.00 B	
Vault	
fl. Casing Diameter Liner	
fl. Casing or Begin End Construction Location Liner Diameter Depth Gauge Material Weld Threaded	(9) WELLLOG Ground elevation 0 ft.
	Material From To SWL
2 ft. TO	FILL 0 4
<b>A</b> ft.	SAND 22 30
<b>4</b>	
Seal	
ft.	
TO From To Material Amount Seal Onlis	
ft. 0.00 22.00 Bentonite 9.00 B	
Filter Pack Screen	
Diameter From To Gauge Material Type Skot Size	
30 ft.	
Filter Pack	
Material SA	Data started 40/00/4000 Completed 42/00/4000
Size 20.00 in.	Date started 12/09/1996 Completed 12/09/1996
(5) WELL TEST	(unbonded) Monitor Well Constructor Certification:
	I certify that the work I performed on the construction, alteration, or abandonment c
Permeability Yield	this well is in compliance with Oregon well construction standards. Materials used at information recorded above are true to the best knowledge and belief.
Conductivity PH	N/M/C Number 10076
Temperature of water 54 °F/C Depth artesian flow found ft.	Signed By BRADLEY J WIEBERDINK Date
Was water analysis done?	(bonded) Monitor Well Constructor Certification:
By Whom? CH2M	I accept responsibility for the construction, alteration, or abandonment work perform
Depth of strata to be analyzed. From ft, to ft	on this well during the construction dates reported above. All work performed during this, to be appreciated with Ocean and the second during the second dur
Remarks	best of my knowledge and belief.
······	MWC Number 10011
Name of supervising Geologist/Engineer	Signed By GREG MCINNIS Date

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Mult G. 521099 52479-4, 52476-83 52479-83

STATE OF OREGON $MultMONETORING WELL REPORT 57368$	WELL I.D. # 2055-48
(gradured by ORS 537.765 & OAR 690-240-095)	Start Card # 9375-2
Instructions for completing this report are on the last page of this form.	
(1) OWNER/PROJECT: M. WELL NO. 29-023	(6) LOCATION OF WELL By legal description
Address SURA Sun J'AL RA	Thurshin / Mar S) Range 7 (Bor W) Section 14
City Troutdale State OR Zip 97060	1. $5    1/4         $
(2) TYPE OF WORK:	2. Fither Street address of well logation 5/00 Sundia
	Rd. Iroutdale, OR
New construction Alteration (Repair/Recondition)	or Tax lot number of well location
	approximate scale and north arrow.
(3) DRILLING METHOD	(7) STATIC WATER LEVEL:
Rotary Air Rotary Mud Cable	J Ft. below land surface. Date 11/1/95
Hollow Stem Auger 🗌 Other	Artesian Pressure lb/sq. in. Date
4 BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES:
Yes No	Depth at which water was first found3
Special Standards S M Depth of completed well ft.	From To Est. Flow Rate SWL
Locking cap	
Protective casing Protective	
post post	
Land surface	(9) WELLLOG: Ground elevation
Monument Casing	Material Error To SUI
2.5  ft $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0.03$ $0$	$-\frac{1}{10}$
TO OSSO Welded Threaded Glu	red 5/17 7.5 8
$\frac{2.5}{1}$ h $\frac{2.5}{5}$ h	
e o o Liner	
26289	in.
engentille and engentiet and threaded Ghu	ed ·
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TO $OOO$ $Material Ho/ef$	Zuy
= 10 $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.000 $ $ = 0.00$	
Borehole diameter	RECEIVED
eses <u></u> in.	
Filter Call and the set of the se	8 ft. thick NOV-2 0 1996
nack	
2 ft.   20053 目 20053 interval(s):	SALEM OREGON
「70」 [000] 目 [000] From <u>3</u> To <u>客</u>	
$\overline{D}$ ft. $\overline{D}$ $D$	
	Date started /////a Completed ////
(1.2	ica
<u> </u>	(unbonded) Monitor Well Constructor Certification:
(5) WELLTEST:	abandonment of this well is in compliance with Oregon well construction
Pump Bailer Air Flowing Artesian	standards. searchais used and information reported above are true to the best knowledge and belief
Conductivity PH	Signed David Ref
Temperature of water 57 67 Depth artesian flow found	ft.
Was water analysis done? Yes No	(bonded) Monitor Well Constructor Certification:
By whom?	work performed on this well during the construction dates reported above. All
Remarks:	work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
	MWC Number / 00 //
Name of supervising Geologist/Engineer CH_MH;//	Signed Data 11/15/01.

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT DECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER



STATE OF OREGON MONITORING WELL REPORT MULT	52476 Received Date 12/23/1996 Well ID Tag# L
(as required by ORS 537.765 & OAR 690-240-095) . Instructions for completing this	report are on the last page of this form. Start Card # 93798
(1) OWNER/PROJECT Well No. 5578	(6) LOCATION OF WELL By legal description
CO 300 NO. MID 38-039	County Multhomah
Name REYNOLDS METALS	1 SNV 4/4 of SE 4/4 of a base souther
Street 5100 SUNDIAL RD	
City TROUTDALE State OR Zip 97060	
(2) TYPE OF WORK	2. Either Street address of well location
New Construction Alter (Recondition) Alter (Repair)	SAME
Conversion Deepening Abandonment	3 ATTACH MAR WITH I OCATION IDENTIFIED. Man shall include approximate scale and notin arrow
(3) DRILLING METHOD	(7) STATIC WATER LEVEL
	7.0 Ft. below land Date 12/02/1996 surface.
	Artestan Pressure io/sq. in. Date
(4) BORE HOLE CONSTRUCTION	<u>(8) WATER BEARING ZONES</u>
Special Standards Depth of completed well 36 ft.	Depth at which water was first found 7 ft.
Diameter         From         To         Begin         End         Material           10.00         0.00         36         Material         Depth         Depth         Amount         Units           Vault         ft.         Depth         Diameter         Depth         Depth<	·
Casing Diameter Liner TO ft. Casing Begin End or Diameter DepthDepth Gauge Material Weid Threaded Of Shoe Iner Diameter DepthDepth Gauge Material Weid Threaded Of Shoe 1 ft. C. 2.00 Plastic End TO 3 ft. Seal	(9) WELL LOG Ground elevation0 ft.MaterialFromToSILT010SILT WITH SAND1025SAND WITH SILT2530SAND.3036
ft. TO From To Material Amount Seal Units Grout ft. 0.00 28.00 Bentonite 17.00 Height B	
Filter Pack Screen	
Size 40.00 in.	Date started 12/02/1996 Completed 12/02/1996
(5) WELL TEST	(unbonded) Monitor Well Constructor Certification:
Permeability Yield	I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.
Conductivity PH	MWC Number 10189
Temperature of water 54 °F/C Depth artesian flow found ft.	Signed By MICKEY A SCOTT Date
Was water analysis done?	(bonded) Monitor Well Constructor Certification:
By Whom? CH2M	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
Depth of strata to be analyzed. From ft. to ft.	time is in compliance with Oregon well construction standards. This report is true to the
Remarks	Dest or my knowledge and beller.
Name of supervising Geologist/Engineer	Signed By GREG MCINNIS Date



Mult G-521099, 52476 52473-4, 52476 52479.83

	STATE OF OREGON	mult MCC	East W Land	WELL D #	603007	1
/M	IONITORING WELL REPO	)RT 53990 AUG	- 1 1007			
	s required by ORS 537.765 & OAR 690-24 Instructions for completing this report are	on the last page of this form.	# 1997	Start Card # 750		
(1	) OWNER/PROJECT:	WELLNO. WATER RESC	DURCES)DEPC	ATION OF WELL By	legal description	
N	ame REVNOLDS	Metals SALEM,	OREGON Locati	on: County_Mult	nomah	
Ā	ddress 6100 Sund	ial Rd	Township	[N or S) Range	3E (E or W) Se	ction <u>23</u>
C	ity Poutdalestate	<u> </u>		1/4 ofE	_1/4 of above section.	3.5
(2	2) TYPE OF WORK:		2. Enther S	inter address of well locatio		<u>,                                    </u>
	New construction Altera	ation (Repair/Recond SER 2 4 199	or Tax lot n	umber of well location		
	Conversion Deep	ening Abandonment	C DEDT. ATTACH	I MAP WITH LOCATION	IDENTIFIED. Map	shall include
_		SALEM OREG	ON (7) STAT	te scale and north arrow.		
(.	3) DRILLING METHOD		() SIAI 8.83	Ft below land surface	Date 6/210	197
	Hollow Stem Auger		Artesian Pro	essure lb/sq. in.	Date	<u></u>
1	BORE HOLE CONSTRUCTI	ON	(8) WAT	ER BEARING ZONI	ES:	
	Yes No		Depth at v	which water was first found	t Flow Pate	
$\mathbf{S}_{j}$	pecial Standards [] X Depth of	completed well <u>73</u> It.	40	95	st. How Kate	F.83
P	rotective casing	Locking cap				Y
		post				·
	ment monument					
		Ň	(9) WEL	LLOG: Ground e	elevation	
	Land surface	Casing -	()			
Μ	Ionument	diameter Z	in.	Material	From T	SWL
		material <u>PVC</u>		KOCK		
	~?<	Welded Threaded Gi		-hanavay	- 5 2	3
4			San	d <silt.< td=""><td>58</td><td>3</td></silt.<>	58	3
	50,50	D D diameter	in. 574	-vellowishb	rn 8 40	
		material	S	d akgnyt	ne 40 194	8.83
	Q <sup>8</sup> Q <sup>8</sup>	CR C Welded Threaded Glu	ued	<u>0_</u> ·		
		Well seal:	-]	n n n n n n n n n n n n n n n n n n n		
6	TO	Material PureC	old			
	<b>82</b> ft. ) 869	Amount 15 CU	ft			
		Grout weight _/O				— <u> </u>
		Borenole diameter		4		
•.		DD 32 Bentonite plug at least	3 ft. thick	······································		
	Filter	CIR CI Screen				
	pack os a a	material PYC				
		10-30 interval(s): Erom <b>RA</b> To <b>9</b>	a —			
	95n 1 2024	₩ From				
		Slot size .10 ir	n.			
		Filter pack:	Date start	ed <u><b>C</b>-23-97</u>	Completed <u>6-2</u>	6-91
		Clean Material	(unbonded)	Monitor Well Constructor	Certification:	
7	5) WELLTEST N/A		abandonme	that the work I performed on the of this well is in compliant	on the construction, alter nce with Oregon well co	ation, or Instruction
(	Pump Bailer	Air Flowing Artesian	standards.	Materials used and informa	tion reported above are	rue to the best
	PermeabilityY	ieldGPM	knowledge		MWC N	umber 10398
	Conductivity I	H	Signed	yeng 11	Date	וידןסבוו
	Temperature of water *	No	(bonded) M	Ionitor Well Constructor Ce	rtification:	
	By whom?		I accept	responsibility for the constr	nuction, alteration, or ab	andonment
	Depth of strata to be analyzed. From	ft. to	ft. work perfo	rmed during this time is in c	compliance with Oregon	well construction
	Remarks:		standards.	This report is true to the be	st of my knowledge and	belief.
	Name of supervising Geologies/Engine	۵r	Signad	MANTAD	MWCN	1/20101
		COPY WATER RESOURCES DEPAR	TMENT SECOND	COPY-CONSTRUCTOR	THIRD COPY-CUSTO	MER .

ORIGINAL & FIRST COPY-WATER R

1.



STATE OF OREGON MONITORING WELL REPORT	53786 Received Date Uter Vell Tag# L 1
(as regulred by ORS 537.765 & OAR 690-240-095) Instructions for completing thi	s report are on the last page of this form. Start Card # 100165
(1) OWNER/PROJECT     Well No.     5781       Co Job No.     400     41-0200	(6) LOCATION OF WELL By legal description County Multnomah
REYNOLDS METALS Street 5100 SUNDIAL RD City TROUTDALE State OR Zip 97060	1. NE 1/4 of NW 1/4 of above section. Legal Desc:
(2) TYPE OF WORK	2. Either Street address of well location
Image: Conversion       Image: Alter (Recondition       Alter (Repair)         Image: Conversion       Image: Deepening       Abandonmen	SAME or Tax lot number of well location 3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow
(3) DRILLING METHOD	(7) STATIC WATER LEVEL
🗌 Rotary Air 📄 Rotary Mud 📄 Cable	8.0 Ft. below land surface. Date 6/13/1997
Hollow Stem Auger Other	Artesian Pressure Ib/sq. in. Date
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES
Special Standards Denth of completed well 20 ft	Denth at which water was first found 0. #
Diameter     From     To       Vault     11.00     0       0     ft.     Casing control	From To Est. Flow Rate SWL 8 20 8
TO 1 ft. Diameter From To Gauge Material Welded Glued Threaded Monument PL	(0) WELL LOC
то	Material     From     To     SWL       SILT     0     12     8       SILTY SAND     12     20
Seal ft. TO 0 1 CO 2 S ft. 1 20 BE 8 S	
Screen Diameter From To Gauge Material Type Slot Size Filter Pack 1 ft. TO	
15 ft.	
Filter Pack	
Size 20.00 in.	Date started 6/13/1997 Completed 6/13/1997
(5) WELL TEST	(unbonded) Monitor Well Constructor Certification:
Permeability Yield	I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.
Conductivity PH	MWC Number 10189
Temperature of water 57 °F/C Depth artesian flow found ft.	Signed By MICKEY A SCOTT Date
Was water analysis done?	
By Whom? CH2M HILL Depth of strata to be analyzed. From ft. to ft.	Locnated Monitor 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 well construction standards. This report is true to the best environment and the state.
Relidins	pest or my knowledge and belief.
Name of supervising Geologist/Engineer	MWC Number 10011 Signed By Date





STATE OF OREGON	Received Date
MONITORING WELL REPORT MULT	53785 Well Tag# L
(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this	s report are on the last page of this form. Start Card # 100164
(1) OWNER/PROJECT MV4 033 Well No. 5780 5	(6) LOCATION OF WELL By legal description
Name METALS REYNOLDS REYNOLDS METALS Street 5100 SUNDIAL RD City TROUTDALE State OR Zip 97060	County Multnomah Township 1.00 N Range 3.00 E Section 14 1. NE 1/4 of NW 1/4 of above section. Legal Desc:
(2) TYPE OF WORK	2. Either Street address of well location
New Construction       Alter (Recondition       Alter (Repair)         Conversion       Deepening       Abandonmen	SAME or Tax lot number of well location 3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow,
(3) DRILLING METHOD	(7) STATIC WATER LEVEL
Rotary Alr Rotary Mud Cable	8.0 Ft. below land surface. Date 6/12/1997
Hollow Stem Auger Other	Artesian Pressure Ib/sq. in. Date
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES
Special Standards Depth of completed well 35 ft.	Depth at which water was first found <b>8</b> ft.
Diameter From To	From To Est. Flow Rate SWL
	8 35 8
0 ft. Casi [11.00 0 [35] TO 1 ft. Diameter From To Gauge Material Welded Glued Threaded Monument 2.00 PL [X]	
	(9) WELL LOG Ground elevation 0.4
то	
	SILT 0 12 8
Seal ft. From To Material Amount Seal Units Grout Weight Units ft. 1 35 BE 14 S	SILTY SAND 12 35
Screen Diameter From To Gauge Material Type Slot Size Diameter From To Gauge Material Type Slot Size 1 ft. TO 28 ft.	
Filter Pack	
Material SA	
Size 20.00 in.	Date started 6/12/1997 Completed 6/12/1997
(5) WELL TEST	(unbonded) Monitor Well Constructor Certification:
	I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and
Permeability Yield	information reported above are true to the best knowledge and belief.
Conductivity PH	MWC Number 10189
Temperature of water 57 °F/C Depth artesian flow found ft.	Signed By MICKEY A SCOTT Date
Was water analysis done?	(bonded) Monitor Well Constructor Certification:
By Whom? CH2M HILL	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
Remarks	time is in compliance with Oregon well construction standards. This report is true to the
	MW/C Number 10011
Name of supervising Geologist/Engineer	Signed By Date







STATE OF OREGON	Received Date
MONITORING WELL REPORT	53788 Well Tag# L
(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing thi	s report are on the last page of this form. Start Card # 100167
(1) OWNER/PROJECT Well No. 5783 Co. Job No. 400	(6) LOCATION OF WELL By legal description
Name METALS REYNOLDS MW 43-15 REYNOLDS METALS Street 5100 SUNDIAL RD	County Multnomah Township 1.00 N Range 3.00 E Section 14 1. NE 1/4 of NW 1/4 of above section. Legal Desc:
City TROUTDALE State OR Zip 97060	2 Fither Street address of well location
(2) TYPE OF WORK         New Construction       Alter (Recondition         Conversion       Deepening         Abandonmen	SAME or Tax lot number of well location 3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow
(3) DRILLING METHOD	(7) STATIC WATER LEVEL
Rotary Alr Rotary Mud Cable	8.0 Ft. below land surface. Date 6/13/1997
Hollow Stem Auger Other	Artesian Pressure Ib/sq. in. Date
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES
Special Standards Depth of completed well 15 ft.	Depth at which water was first found <b>8</b> ft.
Diamotor From To	From To Est. Flow Rate SWL
Vault	8 15 8
ft. Casing 0 15	
TO	
ft. 2.00 PL	
то	(9) WELL LOG Ground elevation 0 ft.
3	Material From To SWL
	SILT 0 12 8 SILTY SAND 12 15
Seal From To Material Amount Seal Units ft. Grout Weight	
TO 0 1 CO 4 S ft. 1 15 BE 6 S	
Screen Diameter From To Gauge Material Type Slot Size Filter Pack 1 ft. TO	
10 ft.	
Filter Pack	
Size 20.00 in	
	Date started 6/13/1997 Completed 6/13/1997
(5) WELL TEST	(unbonded) Monitor Well Constructor Certification:
Permeability Yield	I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.
Conductivity PH	MWC Number 10189
Temperature of water 57 °F/C Depth artesian flow found ft.	Signed By MICKEY A SCOTT Date
Was water analysis done?	(bonded) Monitor Well Constructor Certification
By Whom? CH2M HILL	I accept responsibility for the construction, alteration, or abandomment work performed
Depth of strata to be analyzed. From ft. to ft.	time is in compliance with Oregon well construction standards. This report is true to the
Remarks	best of my knowledge and belief.
Name of supervising Geologist/Engineer	MWC Number 10011 Signed By Date



STATE OF OREGON	Received Date
MONITORING WELL REPORT MULT	53787 Well Tag# L
(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this	s report are on the last page of this form. Start Card # 100166
(I) OWNER/PROJECT Well No. 5782	(6) LOCATION OF WELL By legal description
Co Job No. 400 $\nu(3-0)-1$	County Multnomah
Name METALS REYNOLDS	Township 1.00 N Range 3.00 E Section 14
REYNOLDS METALS	1. NE 1/4 of NW 1/4 of above section.
Street 5100 SUNDIAL RD	Legal Desc:
	2 Fither Street address of well location
(2) TYPE OF WORK	SAME
New Construction Alter (Recondition Alter (Repair)	or Tax lot number of well location
Conversion Deepening Abandonmen	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
(3) DRILLING METHOD	
Rotary Air ["" Rotary Mud ["] Cable	[/] STATIC WATER LEVEL
	8.0 Ft. below land surface. Date 6/13/1997
	Artesian Pressure Ib/sq. in. Date
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES
Special Standards Depth of completed well 29 ft.	Depth at which water was first found 8 ft.
Diameter From To	From To Est. Flow Rate SWL
Vault	8 29 8
ft. Casing commence [ 29	
TO	
ft. 2.00 PL	
Monument	
-1	(9) WELL LOG Ground elevation 0 ft.
3	Material From To SWL
•	SILT 0 12 8
	SILTY SAND 12 29
Seal From To Material Amount Seal Units	
ft. Grout Weight	
TO 0 1 CO 3 S	
ft. 2015 11 5	
Screen	
Diameter From To Gauge Material Type Slot Size	
то	
22 ft.	
Filter Pack	
Material SA	
Size 20.00 in.	Date started 6/13/1997 Completed 6/13/1997
(5) WELL TEST	(unbonded) Monitor Well Constructor Certification:
	I certify that the work I performed on the construction, alteration, or abandonment of
Permeability Yield	this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.
Conductivity PH	MM/C Number 10490
Temperature of water 57 °F/C Depth artesian flow found ft	
Was water analysis done?	
By Whom? CH2M HILL	(bonded) Monitor Well Constructor Certification:
Depth of strata to be analyzed. From ft. to ft.	on this well during the construction dates reported above. All work performed during the
Remarks	time is in compliance with Oregon well construction standards. This report is true to the
Name of supervising Geologist/Engineer	Signed By Data
Humo of supervising Ocologias Englineer	

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STATE OF OREGON	Received Date
MONITORING WELL REPORT MULT	53791 Well Tag# L
(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this	s report are on the last page of this form. Start Card # 100170
(1) OWNER/PROJECT MW45-017 Well No. 5786	(6) LOCATION OF WELL By legal description
Name METALS REYNOLDS REYNOLDS METALS Street 5100 SUNDIAL RD City TROUTDALE State OR Zip 97060	County Multnomah Township 1.00 N Range 3.00 E Section 14 1. NE 1/4 of NW 1/4 of above section. Legal Desc:
(2) TYPE OF WORK	2. Either Street address of well location
New Construction       Alter (Recondition       Alter (Repair)         Conversion       Deepening       Abandonmen	SAME or Tax lot number of well location 3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
<u>(3) DRILLING METHOD</u>	(7) STATIC WATER LEVEL
🗋 Rotary Air 📋 Rotary Mud 📄 Cable	8.0 Ft. below land surface. Date 6/17/1997
Hollow Stem Auger Other	Artesian Pressure Ib/sq. in. Date
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES
Special Standards Depth of completed well 18 ft.	Depth at which water was first found <b>8</b> ft.
Diameter From To Vault 11.00 0 18	From To Est. Flow Rate SWL
Casily - numerical     Casily - numerical       TO     TO       ft.     Diameter       2.00     PL       PL     Image: Casily - numerical       -1     Casily - numerical	(0) WELL LOC
то <b>3</b>	Material     From     To     SWL       SILT     0     12     8       SILTY SAND     12     18
Seal ft. From To Material Amount Seal Units Grout Weight Units TO 0 1 CO 3 S ft. 1 18 BE 7 S	
Screen Diameter From To Gauge Material Type Slot Size Diameter From To Gauge Material Type Slot Size 1 ft. TO 12 ft. Filter Pack Material SA Size 20.00 in	
Size 20.00 m.	Date started 6/17/1997 Completed 6/17/1997
(5) WELL TEST	(unbonded) Monitor Well Constructor Certification:
Permeability Yield	I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.
Conductivity PH	MWC Number 10189
Temperature of water 57 °F/C Depth artesian flow found ft.	Signed By MICKEY A SCOTT Date
Was water analysis done?	(bonded) Monitor Well Constructor Continuetion
By Whom? CH2M HILL Depth of strata to be analyzed. From ft. to ft. Remarks	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 well construction standards. This report is true to the best of my knowledge and belief.
Name of supervising Geologist/Engineer	MWC Number 10011 Signed By Date



STATE OF OREGON	Received Date
MONITORING WELL REPORT MULT	53792 Well Tag# L
(as required by ORS 537.765 & OAR 690-240-095) instructions for completing thi	s report are on the last page of this form. Start Card # 100171
(1) OWNER/PROJECT Well No. 5787	(6) LOCATION OF WELL By legal description
Co Job No. 400	County Multhomab
Name METALS REYNOLDS	Township 100 N Range 300 E Section 14
REYNOLDS METALS	
Street 5100 SUNDIAL RD	t and Deser
City TROUTDALE State OR Zip 97060	Lega Dest.
(2) TYPE OF WORK	2. Either Street address of well location
Alter (Becondition ) Alter (Becondition )	SAME
	or Tax lot number of well location
Conversion Deepening Abandonmen	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow
(3) DRILLING METHOD	
Botan Air      Retan Mud     [7] Cabla	(7) STATIC WATER LEVEL
	8.0 Ft. below land surface. Date 6/16/1997
Hollow Stem Auger Other	Artesian Pressure Ib/sq. in. Date
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES
Special Standards Depth of completed well 43 ft	Depth at which water was first found <b>9</b> ft
Diameter From To	
Vault 11.00 0 43	
ft. Casiling and C	
TO	
ft. 2.00 PL	
Monument	
-1	(9) WELL LOG Ground elevation 0 ft
то	
3	Material From 10 SVVL
	SILTY SAND 12 43
Seal	
From To Material Amount Seal Units	
1 43BE 19 S	
ft.	
Screen	
Diameter From To Gauge Material Type Slot Size	
Filter Pack 37 43 PL .01	
1 ft.	
то	
<b>37</b> ft.	
Filter Pack	
Material SA	
Size <b>20.00</b> in.	Data started 6/16/1997 Completed 6/16/1997
	Date started 6/16/1997 Completed 6/16/1997
(5) WELL TEST	(unbonded) Monitor Well Constructor Certification:
	I ceruly that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and
Permeability Yield	information reported above are true to the best knowledge and belief.
Conductivity PH	MWC Number 10189
Temperature of water 57 °F/C Depth artesian flow found ft.	Signed By MICKEY A SCOTT Date
Was water analysis done?	
	(bonded) Monitor Well Constructor Certification:
Depth of strata to be analyzed. From # to ft	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 well construction standards. This report is true to the
Remarks	best of my knowledge and belief.
	MWC Number 10011

Name of supervising Geologist/Engineer

Signed By

Date



.# <u>L16368</u> Start Card #_	104245		
Start Card #_	104245		
Start Card #_	101043		
(6) LOCATION OF W	ELL By legal descrip	otion	
Well Location: County	nultnoma	h	
Township / (N or S	) Range 36 (E or	W) Section	23
1. SE 1/4 of A	E 1/4 of above sec	ction.	
2. Either Street address of w	ell location	asi	nailir
DEPT			
or Tax lot number of well loc	ation		
3. ATTACH MAP WITH LC	CATION IDENTIFIED.	. Map shal	l include
approximate scale and north	1 arrow.		
(7) STATIC WATER L	EVEL:	120 la	27
Ft. below land s	urface. Date <u>C</u>	<u>72979</u>	1
Artesian Pressure	_ lb/sq. in. Date		
(8) WATER BEARING	ZONES:		
Denth at which water was fi	rst found 25		
From To	Est. Flow Rate		SWL
25 55	unknownde	e .	
	to heaving s	ands	
	5		
(9) WELLLOG:	Ground elevation		
n.	Erom	T To	5W/I
Material		10	SWL
Sandy Si		10	
Dan anis hi	× 18	10	
Sind Sind	L	50	+
		00	
6			
		ļ	
· · · ·			
thick			+
		+	
			1
Date started 828	Completed	8/29	197
		/	1 * *
I certify that the work I per	formed on the construction	n, alteration	, or
abandonment of this well is in	compliance with Oregon	well constru	iction
standards. Materials used and knowledge and belief	i information reported abo	ve are true t	o the best
		IWC Numbe	10400
Signed_Uno	flyndda 1	Date 12	21911-
IL (bonded) Monitor Well Const	-		
Laccent responsibility for t	the construction, alteration	, or abando	nment
i accept responsionity for			4 4 4 4
- work performed on this weight	luring the construction dat	es reported	above. All
<ul> <li>work performed on this well</li> <li>work performed during the ti standards. This report i une</li> </ul>	during the construction date the is in compliance with ( to the best of my knowled	es reported Dregon well lge and belie	above. All construction of.
	Township	Iownship /// (N or S) Range 32 (E or         1. SE 1/4 of 1/4 of above sec         2. Either Street address of well location         DEPT.         or Tax lot number of well location         3. ATTACH MAP WITH LOCATION IDENTIFIED.         approximate scale and north arrow.         (7) STATIC WATER LEVEL:         1.1.11 Ft. below land surface.         Date	Township (N or S) Range (E or W) Section         1. SE 1/4 of 1/4 of above section.         2. Either Street address of well location SAMA_AAI /         DEPT         1 or Tax lot number of well location         3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall approximate scale and north arrow.         (7) STATIC WATER LEVEL:         1 T.T.T. Ft. below land surface.         Artesian Pressure Ib/sq. in.         Date         (8) WATER BEARING ZONES:         Depth at which water was first found         (9) WELL LOG:         Ground clevation         (9) WELL LOG:         Ground clevation         (9) WELL LOG:         Ground clevation         10         Material From To         Darx Gay's blx         18         Darx Gay's blx         18         Darx Gay's blx         18         Darx Gay's blx

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER



STATE OF OREGON	Received Date
MONITORING WELL REPORT MULT	54610 Well ID Tag# L 17736
(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this	report are on the last page of this form. Start Card # 100613
(1) OWINER/PROJECT Well No. 17736	(6) LOCATION OF WELL By legal description
Name .	County Multhomah
REYNOLDS METALS	1. NF 1/4 of NW 1/4 of above section
Street 5100 SUNDIAL RD	Legal Desc:
City TROUTDALE State OR Zip 97060	
(2) TYPE OF WORK	2. Either Street address of well location
New Construction 🗌 Alter (Recondition) 🗌 Alter (Repair)	SAME
Conversion Deepening Abandonment	3 ATTACH MAP WITH LOCATION IDENTIFIED Man shall include approximate scale and path arms
(3) DRILLING METHOD	(7) STATIC WATER LEVEL
Dotany Alr Dotany Mud Cobio	
	Ft. below land surface. Date
	Artesian Pressure Ib/sq. in. Date
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES
Special Standards Depth of completed weil 70 ft.	Depth at which water was first found ft.
DiameterFromToBeginEndMaterial13.000.0070MaterialDepthDepthAmountUnitsBentonite0.0057.0030.00SVauit	
ft. Cosian Diameter	
TO	
ft. Casing or Begin End Construction Location Liner Diameter Depth Gauge Material Weld Threaded	(9) WELL LOG
Monument	
	SAND 0 70
-3 ft.	
Seal	
ft. TO From To Material Amount Seal Units	
ft. 0.00 57.00 Bentonite 30.00 Weight S	
Filter Pack Screen	
TO 68 69 PL .010	
70 ft. Filter Pack	
Material SA	
Size 20.00 in.	Date started 10/30/1997 Completed 10/30/1997
(5) WELL TEST	(unbounded) Monitor Wall Constructor Contidention
	(unbonded) Mondor Well Constructor Certification:
Permeability Yield	I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.
	MWC Number 10411
remperature of water *F/C Depth artesian flow found ft.	Signed By THOMAS N ROGERS Date
	(bonded) Monitor Well Constructor Certification:
By Whom? CH2M HILL	this well during the construction dates reported above. All work performed during this
Departer II. II. II. II. II. II. II. II. II. II	time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
	MWC Number 10011
Name of supervising Geologist/Engineer	Signed By GREG MCINNIS Date
>	

• ·

SITE MAP River 100613 S 100611-5003 Q 10061Z. Multhomah 54608.54610 . · . ;

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STATE OF OREGON MU	ILT 62323 40369
MONITORING WELL REPORT	Sturt Court # 1225 89
(as required by ORS 557.765 & OAR 690-240-075) Instructions for completing this report are on the last page of this form.	Start Card #3 CS 7 8
(1) OWNER/PROJECTE WELL NO 16-1 54-050	(6) LOCATION OF WELL By legal description
(1) OWNERSTROJECT. WELLING. THE STOP	Well Location: County Mailbours h
Address Silvo ANE Successil Pro	Township (Nor S) Range 3 (Ebr W) Section 24
City Two Flats State OR Zin 9704.0	1. NW 1/4 of SW 1/4 of above section.
(2) TYPE OF WORK:	2. Either Street address of well location
New construction   Alteration (Repair/Recondition)	or Tax lot number of well location 400
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include
	approximate scale and north arrow.
(3) DRILLING METHOD	(7) STATIC WATER LEVEL: $9 - 18 - 00$
Rotary Air   Rotary Mud   Cable	17 Ft, below land surface. Date
K Hollow Stem Auger	Artesian Pressure lb/sq. in. Date
	(8) WATER REARING ZONES.
We Ne Ale Ale Ale Ale Ale Ale Ale Ale Ale Al	(b) WATER DEARING ZOMES.
Yes No <b>50</b> ft	From To Est Flow Rate SWI
Special standards [] V Departor completed wear	0 12 N/A 12
Protective casing Locking cap	
Protective nost	
ement monument	
Land surface	(9) WELLLOG: Ground elevation
Casing 7"	
Monument Signature diameter in.	Pitt man from 16 SWL
$\underline{O}_{n}$	fill material 0 3 12
$\frac{70}{2}$ $\langle 0.82$ $\langle 0.82$ Welded Threaded Glued	Vork proy Jul 3 20
$\frac{1}{2}$ $\mathbb{C}$	Set att of Cursing 76 75
	Jafarared function 20 39
$\square \square $	Schurated Sult 351 45'
Walded Thereford Ched	fine send 45' 50'
TO BOOD Material ment Chip	2
34 a call the a og Amount 2 Days.	
Grout weight 915 161	901
e e e Borehole diameter	0
2000 10 10 10 10 10 10 10 10 10 10 10 10	RECEIVED
DDDD DDD DDDD Bentonite plug at least 3 ft. th	ick
Filter $G^{\&} G$ $G^{\&} G$ Screen $G_{1/C}$	
pack $0.90$ $\Xi \leftarrow 0.90$ material $1VC$	
$3I_{\text{fl}}$   $2V_{00,\text{cl}}$     $2V_{00,\text{cl}}$ interval(s):	WATER RESOURCES DEPT
~70 J \$000 E \$000 From 40 To 50	SALEM, OREGON
$\frac{50}{10}$ h $\frac{1}{10}$ $\frac{1}{1$	
	9 18- 80 0 - 19 - 00
on of Tono on of Hiter pack	Date started Completed
	(unbonded) Monitor Well Constructor Certification:
	<ul> <li>I certify that the work I performed on the construction, alteration, or abundant at this well is in according with Occurrence II and the second second</li></ul>
(5) WELL LEDI:	standards. Materials used and information reported above are true to the best
Permeability Yield GPM	knowledge and belief. MWC Number 10440
Conductivity PH	Signed Jule Vill Date 10-11-00
Temperature of water 53° (FC Depth artesian flow found ft.	
Was water analysis done?   Yes   No	(bonded) Monitor Well Constructor Certification:
By whom?	I accept responsibility for the construction, alteration, or abandonment
Depth of strata to be analyzed. From ft. to ft.	work performed on this wen during the construction dates reported above. All work performed during this time is in compliance with Orecon well construction
Remarks:	standards. This report is true to the best of my knowledge and belief.
	MWC Number /0442
Name of supervising Geologist/Engineer	Signed Dry Month Date 10/11/00
ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT	SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

MULI 02323



STATE OF OREGON	Received Date 11/25/97
MONITORING WELL REPORT MULT	54670 Well Tag# L 17730
(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this	s report are on the last page of this form. Start Card # 100606
(I) OWNER/PROJECT Well No. '	(6) LOCATION OF WELL By legal description
Co Job No. PZ17F ~ උද්ී Name REYNOLDS METALS Street 5100 SUNDIAL RD	County Multnomak Township 1.00 N Range 3.00 E Section 14 1. NE 1/4 of NW 1/4 of above section. Legal Desc:
City TROUTDALE State OR Zip 97060	2. Either Street address of well leaster
(2) TYPE OF WORK	2. Either Street address of well location
New Construction       Alter (Recondition       Alter (Repair)         Conversion       Deepening       Abandonmen	or Tax lot number of well location 100 3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
(3) DRILLING METHOD	(7) STATIC WATER LEVEL
🗌 Rotary Air 🔄 Rotary Mud 📄 Cable	12.5 Ft. below land surface. Date 0/29/1997
Hollow Stem Auger Other PUSH PROBE	Artesian Pressure Ib/sq. in. Date
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES
Special Standards Denth of completed well 19 ft	Denth at which water was first found to
Diameter     From     To       Vault     2.00     0     19       TO     To     119       To     1 ft.     Diameter     From     To Gauge     Material     Welded     Glued     Threaded       Monument     0.75     PL     Image     Image     Image     Image	
то	(9) WELLLOG Ground elevation ft.
	Material From To SWL
	SAND 0 8
Seal ft. To Material Amount Seal Units Grout Weight Grout Weight ft. Grout Weight G	
Screen	
Filter Pack	
Material SA	
Size <b>20.00</b> in.	Date started 0/20/1007
<u>(5) WELL TEST</u>	(unbonded) Monitor Well Constructor Certification:
Permeability Yield	I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.
Conductivity PH	MWC Number 10402
Temperature of water 51 °F/C Depth artesian flow found ft.	Signed By KEITH D VIDOS Date
Was water analysis done? 🛛 🔀	
By Whom? CH2M HILL Depth of strata to be analyzed. From ft. to ft. Remarks	(Donaea) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief
	MAC Number 40044
Name of supervising Geologist/Engineer	Signed By GREG MCINNIS Date



STATE OF OREGON	Received Date 11/25/97
MONITORING WELL REPORT MULT	54669 Well Tag# L 17729
(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing the	s report are on the last page of this form. Start Card # 100605
(I) UW NEK/FRUJECT Well No Co Job No. P717D	(6) LOCATION OF WELL By legal description
Name P2/17-0 31 REYNOLDS METALS Street 5100 SUNDIAL RD	County Multhoman Township 1.00 N Range 3.00 E Section 14 1. NE 1/4 of NW 1/4 of above section.
City TROUTDALE State OR Zip 97060	
(2) TYPE OF WORK	2. Either Street address of well location
New Construction       Alter (Recondition       Alter (Repair)         Conversion       Deepening       Abandonmen	SAME or Tax lot number of well location 100 3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
(3) DRILLING METHOD	(7) STATIC WATER LEVEL
Rotary Air Rotary Mud Cable	12.5 Ft. below land surface. Date 0/29/1997
Hollow Stem Auger Other PUSH PROBE	Artesian Pressure Ib/sq. in. Date
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES
Special Standards Depth of completed well 39 ft	Depth at which water use first found the
Diameter     From     To       Vauit     2.00     0     39       TO     TO     1     ft.       Diameter     From     To     Gauge       Monument     0.75     PL     Image	
то	(9) WELL LOG Ground elevation ft.
	Material From To SWL
Seal ft. TO 0 36 BE 12 G ft.	SANDS U 8 SILTS 8 28 SANDS 28 39
Screen	
39 ft. Filter Pack	
Material SA	
Size 20.00 in.	
	Date started 0/29/1997 Completed 10/29/1997
( <u>5) WELL TEST</u>	(unbonded) Monitor Well Constructor Certification:
	I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and
Permeability Yield	information reported above are true to the best knowledge and belief.
Conductivity PH	MWC Number 10402
Temperature of water 51 °F/C Depth artesian flow found ft.	Signed By KEITH D VIDOS Date
was water analysis cone r	(bonded) Monitor Well Constructor Certification:
by WIGHT CHIMMILL	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
Remarks	time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief
	ARAP Number 40044
Name of supervising Geologist/Engineer	Signed By GREG MCINNIS Date

GEOTECHEXPLORATIONS 6924759



STATE OF OREGON	Received Date 11/25/97	
MONITORING WELL REPORT MULT	54668 Well Tag# L 17728	
(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing th	is report are on the last page of this form. Start Card # 100604	
(1) OWNER/PROJECT Well No.	(6) LOCATION OF WELL By legal description	
Co Job No. PZ18S ~ 223	County Multhomah	
Name	Township 100 N Range 300 E Section 14	
REYNOLDS METALS	1. NE 1/4 of NW 1/4 of above section	
Street 5100 SUNDIAL RD	Legal Desc:	
City TROUTDALE State OR Zip 97060		
(2) TYPE OF WORK	2. Either Street address of well location	
New Construction Alter (Recondition Alter (Repair)	SAME	
	or Tax lot number of well location 100	
	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.	
(3) DRILLING METHOD	(7) STATIC WATER LEVEL	
Rotary Air Rotary Mud Cable	13 5 Et below land surface Date 0/24/4007	
Hollow Stem Auger     Other PUSH PROBE	Artesian Proseure iblas in Date	
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES	
Special Standards Depth of completed well 20 ft.	Depth at which water was first found ft.	
Diameter From To		
Vault		
0 ft car 2.00 0 20		
1 ft. Diameter From To Gauge Material Welded Glued Threaded		
Monument 0.75 PL		
	(A) WELL LOC	
то	(9) WELL LOG Ground elevation ft.	
	Material From To SWL	
	SAND 0 8	
Cool	SILTS 8 20	
From To Material Amount Seal Units		
ft. Grout Weight		
TO 0 14BE 10 G		
ft.		
x		
Screen [		
Diameter From To Gauge Material Type Slot Size		
Filter Pack 17 20 ST .010		
14 ft.		
то		
20 fl.		
Filter Pack		
Material SA		
Size 20.00 in.	Date started 0/31/1997 Completed 10/31/1997	
(5) WELL TEST	(unbonded) Monitor Well Constructor Certification:	
	Loopily that the work I not comed on the construction of any loss of a standard by	
Domoshilis Vield	this well is in compliance with Oregon well construction standards. Materials used and	
reambaumity Tk8k0	mornation reported above are true to the best knowledge and belief.	
Conductivity PH	MWC Number 10402	
Temperature of water <b>51</b> °F/C Depth artesian flow found ft.	Signed By KEITH D VIDOS Date	
Was water analysis done?		
By Whom? CH2M HILL (DONATED MONITOR Well Constructor Certification: I accept responsibility for the construction, alteration, or abandonment work perf		
Depth of strata to be analyzed. From ft. to ft.	on this well during the construction dates reported above. All work performed during this	
Remarks	time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.	
	MWC Number 40044	
Name of supervising Geologist/Engineer		

STATE OF OREGON MONITORING WELL REPORT MULT	Received Date         11/25/97           54671         Well Tag#         L 17731
(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this	s report are on the last page of this form. Start Card # 100607
(I) OWNER/PROJECT Well No.	(6) LOCATION OF WELL By legal description
Co Job No. PZ18D	County <b>Multnomah</b> Township <b>1.00 N</b> Range <b>3.00 E</b> Section <b>14</b> 1. NE 1/4 of NW 1/4 of above section. Legal Desc:
City TROUTDALE State OR Zip 97060	
(2) TYPE OF WORK         New Construction       Alter (Recondition         Conversion       Deepening         Abandonmen	2. Either Street address of well location     SAME     or Tax lot number of well location     100     3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
(3) DRILLING METHOD	(7) STATIC WATER LEVEL
Rotary Air Rotary Mud Cable	17.5 Ft. below land surface. Date 0/30/1997
Hollow Stem Auger Other PUSH PROBE	Artesian Pressure Ib/sq. in. Date
	(8) WATED READING ZONES
(4) BORE HOLE CONSTRUCTION	(0) WATER DEARING ZONES
Special Standards Depth of completed well 40 ft.	Depth at which water was first found ft.
Diameter     From     To       Vault     0     ft.     2.00     0     40       TO     TO     Immetrial     Weided     Glued     Threaded       1     ft.     0.75     PL     Immetrial     Immetrial       TO     TO     Immetrial     Weided     Glued     Threaded       Seal     ft.     From     Io     Material     Amount     Seal       ft.     0     34 BE     12     G     ft.	(2) WELLLOG Ground elevation ft. Material From To SWL SAND 0 20 SILTS 20 32 SAND 32 40
Screen Diameter From To Gauge Material Type Slot Size Filter Pack 34 ft. TO 40 ft. Filter Pack Material SA Size 20 00 in	
	Date started 0/30/1997 Completed 10/30/1997
(5) WELL TEST	(unbonded) Monitor Well Constructor Certification:
Permeability Yield	I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.
Conductivity PH	MWC Number 10402
Temperature of water 51 °F/C Depth artesian flow found ft.	Signed By KEITH D VIDOS Date
Was water analysis done?	
By Whom? CH2M HILL Depth of strata to be analyzed. From ft. to ft. Remarks	(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.
	MWC Number 10011
Name of supervising Geologist/Engineer	Signed By GREG MCINNIS Date

GEOTECHEXPLORATIONS 6924759



STATE OF OREGON	Received Date 11/25/97
MONITORING WELL REPORT MULT	54673 Well Tag# L 17733
(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this	s report are on the last page of this form. Start Card # 100609
(1) OWNER/PROJECT Well No	(6) LOCATION OF WELL By legal description
Co Job No. PZ19S ~ ? M Name REYNOLDS METALS Street 5100 SUNDIAL RD City TROUTDALE State OR Zip 97060	County <b>Multnomah</b> Township <b>1.00 N</b> Range <b>3.00 E</b> Section <b>14</b> 1. <b>NE</b> 1/4 of <b>NW</b> 1/4 of above section. Legal Desc:
(2) TYPE OF WORK	2. Either Street address of well location
New Construction       Alter (Recondition       Alter (Repair)         Conversion       Deepening       Abandonmen	SAME or Tax lot number of well location 100 3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
(3) DRILLING METHOD	(7) STATIC WATER LEVEL
Rotary Air Rotary Mud Cable	9.0 Ft. below land surface. Date 0/31/1997
Hollow Stem Auger Other PUSH PROBE	Artesian Pressure Ib/sq. in. Date
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES
Special Standards Depth of completed well 14 ft.	Depth at which water was first found ft.
Diameter     From     To       0     ft.     Casing       TO     1     4       TO     1     1       Monument     0.75     PL       TO     1     0       Seal     ft.     From       TO     8     8       ft.     0     8       BE     4     G       ft.     Diameter     From       To     8     8	(9) WELLLOG Ground elevation fL Material From To SWL SAND 0 6 SILTS 6 12 SAND 12 14
Filter Pack 11 14 ST .010	
7 π. ΤΟ	
14 ft. Filter Pack Material SA Size 20.00 in.	Date started 0/31/1997 Completed 10/31/1997
(5) WELL TEST	(unbonded) Monitor Well Constructor Certification:
	Certify that the work   performed on the construction alteration or abandonment of
Permeability Yield	this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.
Conductivity PH	MWC Number 10402
Temperature of water <b>51</b> °F/C Depth artesian flow found ft.	Signed By KEITH D VIDOS Date
Was water analysis done?       Image: Chi analysis done?         By Whom?       CH2M HILL         Depth of strata to be analyzed. From       ft. to         Remarks       ft.	(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.
	MWC Number 10011
Name of supervising Geologist/Engineer	Signed By GREG MCINNIS Date



GEOTECHEXPLORATIONS 6924759

STATE OF OREGON	Received Date 11/25/97
MONITORING WELL REPORT MULT	54672 Well Tag# L 17734
(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing thi	s report are on the last page of this form. Start Card # 100608
(1) OWNER/PROJECT Well No. ·	(6) LOCATION OF WELL By legal description
Co Job No. PZ19B ~ U 40	County Multnomah
Name REYNOLDS METALS	Township 1.00 N Range 3.00 E Section 14
Street 5100 SUNDIAL RD	1. NE 1/4 of NWW 1/4 of above section.
City TROUTDALE State OR Zip 97060	בקצמ ניפאנ.
(2) TYPE OF WORK	2. Either Street address of well location
🖂 New Construction 🦳 Alter (Recondition 🦳 Alter (Repair)	
Conversion Deepening Abandonmen	
(3) DPULLING METHOD	
	(7) STATIC WATER LEVEL
	17.0 Ft. below land surface. Date 0/31/1997
Hollow Stem Auger Other PUSH PROBE	Artesian Pressure Ib/sq. in. Date
(4) BORE HOLE CONSTRUCTION	<u>(8) WATER BEARING ZONES</u>
Special Standards Depth of completed well 40 ft.	Depth at which water was first found ft.
Diameter From To	
TO Diameter From To Gauge Material Welded Glued Threaded	
1 π. 0.75 PL .	
то	(9) WELLLOG Ground elevation fL
	Material From To SWL
	SAND 0 9 SILTS 9 21
Seal	SAND 21 40
ft. From To Material Amount Seal Units	
TO 0 34 BE 12 G	
ft.	
Screen	
Diameter From To Gauge Material Type Slot Size	
Filter Pack 35 40 ST 0.010	
J4 IL	
40 ft.	
Filter Pack	
Material SA	
Size <b>20.00</b> in.	Date started 0/31/1997 Completed 10/31/1997
(5) WELL TEST	
	<u>(undonaea) Monuor Well Constructor Certification:</u>
	I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and
Permeability Yield	information reported above are true to the best knowledge and belief.
Conductivity PH	MWC Number 10402
Temperature of water <b>51</b> °F/C Depth artesian flow found ft.	Signed By KEITH D VIDOS Date
Was water analysis done?	(bonded) Monitor Well Constructor Certification:
By Whom? CH2M HILL	I accept responsibility for the construction, atteration, or abandonment work performed on this well during the construction dates reported shows. All work performed during this
Deput of strata to be analyzed, FIOTR the to TL	time is in compliance with Oregon well construction standards. This report is true to the
I CETIKU AS	Dest of my knowledge and belief.
Name of supervising Geologist/Engineer	MWC Number 10011

Name of supervising Geologist/Engineer

Signed By GREG MCINNIS

Date




	n qua tonn.	CAUTE				
(1) OWNER/PROJECT	MW-31R	(6) LOCATION	OF <sub>1</sub> WELL By	legal descrip	tion:	
Nume Keynolds Metals		County / Control	heh Latitude	2F 0	.ongitude _	2
Address SIDD Jundial Kd.		Township	_(Nor S) Range.		W) Section	
City Toutdale State OK	<u>Zip 77000</u>	<u> </u>	<u> </u>	1/4 of above sect	ion. ວ <b>ຕ</b>	
(2) TYPE OF WORK		Street address of well	location <u>rak</u>	Trait	1.10	OF
· · ·		5100 Jun	dial Ka		an 1e 1	211
New construction	condition) Abandonment	ATTACH MAP WITH	LOCATION JDEN	ITIFIED. Map sl	hall include	<u> </u>
(3) DRILLING METHOD	Cable	(7) STATIC WAT	ER LEVEL:	Dute	7/22	205
A Hollow Stem Auger Dother		Ariesium Pressure _		117. Daie		
(4) BORE HOLE CONSTRUCTION:	$\sim$	(8) WATER BEA	RING ZONES	:		
Special Standards	<u> </u>	Depth at which water v	was first found To	Est. Floy	v Rafe	sv
Mult	Lond surface	15	48			10
	t					-
	urface flugh vault	•				
	ocking cap					
		, <sup>1</sup> L		<u> </u>		
( Se 12 ) Se 24	diameter in.	(9) WELL LOG:				
	material <u>VV</u>	Grou	nd Elevation			
	felded Threaded Glued	Mater	'inf	From	· To	SV
		SIL		0	10	
	inneter in	Scen 9		1.0	98	1
	Interial					
	kelded Threaded Glued					
35 ) acare Algea						<u> </u>
3-3 n 8990 W	li scal:					
	Interial DONDA					
	mount 120(au.					<u> </u>
	rout weight					†
	in.					-
	entonite plug at least 3 ft. thick					
Dep <mark>D</mark>	creen O					ļ
Pilter 0.0 m	naterial PVC					<u> </u>
08 000 E 0500 "	terval(s):					·
	om XX To IQ					<u> </u>
481 Port H Port H	om to	· · · · · · · · · · · · · · · · · · ·	•			
	ot size <u>IOIO</u> in.					
	aterial Scim O	Date started 2/22	TIT Com	plated 7	2.21.	<u></u>
Guea Guea si	ze 10 2 20 in.		Constant Contiffe			
<u> </u>		I certify that the work	L performed on the c	onstruction, alter	ntion, or aba	undou-
5) WELL TESTS:	[] Flowing Artesian	ment of this well is in con standards. MatQuals used	apliance with Oregor and information repo	water supply we orted above are tra	ll constructi ie to the bes	on t of my
PermanhilityYield	GPM	knowledge and belief.	8 +	MWC Num	her 105	511°
ConductivityPH		Signed Inl K.	Jusit	Di	ate 8/4	Tar T
Tunnantum of union 61 (OE/C Duath artes	ian flow found ft.	(bonded) Monitor Well Co	onstructor Certification			l
remperature of water Yerc Depth artes		· · · ·				
Was water analysis done? Yes ANo		Laccept responsibility	for the construction	, alteration, or abs	andonment a	wark
Was water analysis done? Yes No By whom?		I accept responsibility performed on this well due performed during this time	for the construction ring the construction c is in compliance of	, alteration, or aba dates reported aba th Oregon water «	andonment v ove. All wor annly wot	wark 'k
By whom? Yr. Depth artes By whom? Yes Depth of strata to be analyzed. From ft, to Remarks:	ofi.	I accept responsibility performed on this well due performed during this time construction standards. The	for the construction ring the construction e is in compliance wi is report is true to the	, alteration, or aba dates reported aba th Oregon water s 2 best of my know	andonment v ove. All wor supply well viedge and b	wark rk clief.

# ATTACHMENT 4 OWRD Decommissioning Reports

ON CD

#### STATE OF OREGON MONITO (as required by

MONITORING	WELL REI	PORT	Well I.D. #: L
(as required by ORS 537.765 & OAR 690-240-095)			Start Card #: 167835(amended)
Instructions for comp	pleting this repor	t are on the last page of this form.	Surreurs <u>Toroco(uniended)</u>
(1) OWNER/PRO	)JECT:	WELL NO. MW03-017	(6) LOCATION OF WELL By legal description
Name Reynolds Metals	;		
Address 5100 Sundial Re	d		Weil Location: County Multhoman
City Troutdale	State OR	Zip 97080	Township <u>1</u> N Range <u>3</u> E Section <u>14</u>
(2) TYPE OF WO	DRK:		1. SW ¼ of SE ¼ of above section.

treet address of well location same as owner ot number of well location 100

H MAP WITH LOCATION IDENTIFIED. Map shall include mate scale and north arrow.

#### C WATER LEVEL:

below land surface

Date lb/sq in. Date \_

#### **BEARING ZONES:**

water was first found

From	To	Est. Flow Rate	SWL

#### LOG: Ground clevation \_

Material SWL From То ginal start 67349 for letails. t and backfilled w/ 0 18 ut Completed 12/22/2004 22/2004

tor Well Constructor Certification:

work I performed on the construction, alteration, or abandonment of compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

and information reported above and	MWC Number	10402
Signed	Date 10/21/05	
~ ~ ~ ~		

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

(2) TYPE	E OF WORK:		1. <u>SW</u>
(-)			2. Either S
Γ.	New construction	Alteration (Repair/Recondition	
	Conversion		opment 2 ATTACI
L			approxir
(3) DRIL	LING METHOD:		(7) STATIC
m	Rotary Air	Rotary Mud Cable	Ft
	Hollow Stem Auger	Other grout in place	Artecian Pressure
	, nonon otom rugor	<b>•</b> Outer <u><b>3</b></u>	
(4) BORI	E HOLE CONSTR	UCTION:	(8) WATER
Special Stand	ards 🚺 🛄 Depth o	of completed well 18 ft.	Depth at which y
Vault	(0)	j.e	From
Valit		Water-tight Cove	r
ft.,		Surface flush vau	lt
TO		Locking cap	
ft.			
	Cao o ca	Casing	
		diameter 2	in. (D) AVELLI
		material	(9) WELLI
		Welded Threade	d Glued
	2020	Card D	Reference oriç
		Liner	construction d
Scal	0205	diameter	in
<b>0</b> ft.	12 0 12 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	naterial	
TO $\prec$	5000 M	Welded Threader	d Glued
<u>18</u> ft.	0 ª 0		
		Well Seal:	
	000	Material Bent. 0	Grout Pull monumen
	20°C	Amount 11 Gals	Bentonite Gro
	000	Grout Weight 9.	7
		Borchole diameter	
	000	0100	
,		Bentonite Plug at least	3 ft thick
,	0000	0.9.0.4 Serror	5 m. unex
Filter	20,20	BD SD material	
pack	Jos E		
ft	Para =	From To	)
TO		From To	,
ft. ]	5°0 E -	Slot size	in.
	<b>2</b> ~~~ 日	Page Filter Pack:	
	2000	Material	in Date started 12/
l	603 L	Size	III. (unbouded) Menii
5) WELL	_ TEST:		l certify that the
			this well is in com

Pump	Bailer	Air	Flowing Art	esian	
Permeability	Yi	eld	GPM		
Conductivity	pI	I			
Temperature of Wa	ter°F	Depth artes	ian flow found	1	ft
Was water analysis	donc? Yes	✓ No			
By whom?					
Depth of strata to b	c analyzed. From	nf	ì. to	ft.	
Remarks					

Name of supervising Geologist/Engineer

MWC Number 10442 Date 10/21/05 Signed

STATE OF OREGON	
MONITORING WELL REPORT	
(as required by ORS 537.765 & OAR 690-240-095)	

well	LD.	#:	L
			_

Start Card #: 167843(amended)

Instructions for completing this report are on the last page of this form.	
(1) OWNER/PROJECT: WELL NO. MW03-098	(6) LOCATION OF WELL By legal description
Name Reynolds Metals	Well Location: County Multnomah
City Troutdale State OR 7in 97080	Township 1 N Range 3 E Section 14
(2) TVPE OF WORK:	1. <u>SW</u> ¼ of <u>SE</u> ¼ of above section.
	2. Either Street address of well location same as owner
New construction Alteration (Repair/Recondition)	or Tax lot number of well location 100
$\Box$ Conversion $\Box$ Deepening $\Box$ Abandonment	3 ATTACH MAP WITH LOCATION IDENTIFIED Man shall includ
	approximate scale and north arrow.
(3) DRILLING METHOD:	(7) STATIC WATER LEVEL:
Rotary Air Rotary Mud Cable	Ft, below land surface Date
Hollow Stem Auger  Other grout in place	Artesian Pressure lb/sq in. Date
(4) BORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES:
Special Standards 🗹 🗋 Depth of completed well 100 ft.	Depth at which water was first found
Vault Standard M	From To Est. Flow Rate SWL
Water-tight Cover	
- $ft$ . Surface flush vault	
$f = \frac{1}{2}$	
Casing	
diameter 2	(9) WELLLOG: Ground elevation
Car material	
Welded Threaded Glued	Petersnep ericipal start 95677 for
a 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	construction details
Seal Seal	
po po	n
$\frac{0}{1}$ (i.) $\omega \circ \omega$ (material $\omega \circ \omega$ )	-
100 c Care and Care a	
Git cert	Pull monument and backfilled w/
Paga Alanda A	Bentonite Grout 0 100
a o a o a Amount 30 Gais	
orout weight sh	-
Son	
	· · · · · · · · · · · · · · · · · · ·
Bentomite Plug at least 3 ft. this	ж
Filter ( 20, 20 - Screen	
pack So a material	
- $        -$	
$f_{L} = \begin{bmatrix} 3^{\alpha} & 3^{\alpha} \\ \hline 3^{\alpha} & 5^{\alpha} \end{bmatrix} = \begin{bmatrix} 3^{\alpha} & 3^{\alpha} \\ \hline 3^{\alpha} & 5^{\alpha} \end{bmatrix} = \begin{bmatrix} 3^{\alpha} & 3^{\alpha} \\ \hline 3^{\alpha} & 5^{\alpha} \end{bmatrix}$	
$0 \alpha^{\circ} q \square$ $1 \alpha^{\circ} q \square$ Filter Pack:	
Material	- Data started 12/22/2004 Completed 12/22/2004
Size in.	Completed Terrarely Completed Terrarely
(5) WELL TEST:	<ul> <li>(unbonded) Monitor well Constructor Certification:</li> <li>I certify that the work I performed or the construction, alteration, or abandonme</li> </ul>
	this well is in compliance with Oregon well construction standards. Materials use

Signed

Pump Bail	ler	Air	Flowing	Artesian	
Permeability	Yie	d	GI	PM	
Conductivity	pH				
Temperature of Water	°F	Dcpth a	rtesian flow fo	ound	f
Was water analysis donc?	Yes	🗸 No			
By whom?					
Depth of strata to be analyz	zed. From		ft. to	ft.	
Remarks					
Name of supervising Geolo	ogist/Engin	eer			

performed during this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief. MWC Number 10442 Date 10/25/05 Signed

and information reported above are true to the best knowledge and belief. MWC Number 10402

(bonded) Monitor Well Constructor Certification: I accept responsibility for the construction, alteration, or abandonment work

Date 10/21/05

STATE OF OREGON MONITORING WELL REPOI (as required by ORS 537.765 & OAR 690-240-0	<b>RT</b> 95)	Well I.D. #: L	24/2022		
Instructions for completing this report are	on the last page of this form.	Start Card #: <u>1678</u>	34(amended	)	
(1) OWNER/PROJECT: W Name Reynolds Metals	ELL NO. MW05-025	(6) LOCATION OF WELL B	y legal desc	ription	
Address 5100 Sundial Rd		Well Location: County Multnomah			
City Troutdale State OR	Zip 97080	I ownship I IN Range J		Section	14
(2) TYPE OF WORK:		2. Either Street address of well location	on same as ow	ner	
New construction   A     Conversion   D	Iteration (Repair/Recondition) eepening <b>v</b> Abandonment	or Tax lot number of well location 3. ATTACH MAP WITH LOCATIO	100 )N IDENTIFIE	D. Map sha	all include
(2) DBU LINC METHOD.	······································	approximate scale and north arro	w.		
(5) DRILLING METHOD:		(7) STATIC WATER LEVEL			
Rotary Air R	otary Mud Cable	Ft. below land surface	Date		
Hollow Stem Auger 🗹 O	ther grout in place	Artesian Pressure lb/sq in.	Date		
(4) BORE HOLE CONSTRUCTION	ON:	(8) WATER BEARING ZONE	ES:		
Special Standards $\boxed{\square}$ Depth of comple	ted well 25 ft.	Depth at which water was first found			
Vault	04	From To Est	. Flow Rate		SWL
· · · · · · · · · · · · · · · · · · ·	Water-tight Cover				
$-\pi^{\mu}$	Surface flush vault				
	Locking cap				
E's all Est	Casing		N 80		
3°50	diameter <u>2</u> in.	(9) WELL LOG: Ground el	evation		
$\Box_0 \simeq$	3 material				011/1
200 m 00	Welded Threaded Glued	Material	From	10	SWL
000		Reference original start 67348 for			
500 Stall 100 Stall	Liner	construction details.			
	diameter in.				
	material				
TO Y 0000	Welded Threaded Glued				
$\frac{25}{10}$ ft. $30$					
000 00 00 000 000 000	Well Seal:	Pull monument and backfilled w/			
000	Material Bent. Grout	Bentonite Grout	0	25	
O ROLLING OR	Amount 12 Gals				
	Grout Weight 9.7				
2005	Borchole diameter				
000000000000000000000000000000000000000	Din.				
50 2 B 50 2	Bentonite Plug at least 3 ft. thick				
0000	Screen				
Filter	material				
	2 interval(s):				
n. Grod E one	From To				
	From To				
n.) 500 E - 600	Slot size in.				
100°00 1 100°0	Filter Pack:				
0000 H 0000	Material	Data start 12/22/2004	Completed 12	22/2004	
6000 1 000	Size in.		Completed 12	22/2004	
(5) WELL TEST.		(unbonded) Monitor Well Constructor Certif	ication:	ation or ab	andonment of
		this well is in compliance with Oregon well of	construction stan	dards. Mate	rials used
Pump Bailer Air	Flowing Artesian	and information reported above are true to th	c best knowledge	e and belief.	0402
PermeabilityYield	GPM	Signad PCC		Number <u>1</u>	0402
Conductivity pH		Signed -	Date	.0.21/00	

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

MWC Number 10442 Date 10/21/05

Name of su	pervisi	ng Geolo	gist/En	gineer	

Depth of strata to be analyzed. From \_\_\_\_\_\_ ft. to \_\_\_\_\_

Temperature of Water

By whom?

Remarks\_

Was water analysis done?

°F

🗸 No

Ycs

Depth artesian flow found \_

ft.

Signed

\_\_\_\_ ît.

STATE OF ORE	GON	Weli I.D. #: I.			
(as required by ORS 537.765 & O/ Instructions for completing thi	J RUFORT AR 690-240-095) is report are on the last page of this form	Start Card #: 16	7833(amend	ed)	
(1) OWNER/PROJECT: Name Reynolds Metals	WELL NO. <u>MW06-024</u>	(6) LOCATION OF WELL	By legal de	scription	
Address 5100 Sundial Rd		Township 1 N Bange	3 F	Section	14
City Troutdale Sta	te OR Zip 97080	1 SW ½ of SE ½ of	f above section	Dection	
(2) TYPE OF WORK:		2. Either Street address of well loca	ation same as	owner	
New construction	Alteration (Repair/Recondition)	or Tax lot number of well location	n <b>100</b>		
Conversion	Deepening Abandonment	3. ATTACH MAP WITH LOCAT approximate scale and north an	ION IDENTIF	IED. Map sh	all include
(3) DRILLING METHO	D:	(7) STATIC WATER LEVE	L:		
Rotary Air Hollow Stem Auger	<ul> <li>Rotary Mud</li> <li>Cable</li> <li>Other grout in place</li> </ul>	Ft. below land surface Artesian Pressure lb/sq in.	Date Date		
(4) BORE HOLE CONS	TRUCTION:	(8) WATER BEARING ZON	VES:		
Special Standards 🗹 🗋 De	pth of completed well 25 ft.	Depth at which water was first found			
		From To I	Est. Flow Rate		SWL
vaun p	Water-tight Cover				
n./ 😝	Surface flush vault				
	Locking cap				
n. [6]	0				
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Casing				
0000	diameter <u>2</u> in.	(9) WELL LOG: Ground	clevation		
000	Welded Threaded Glued	Material	From	То	SWL
Jand		Reference original start 67347 for			
eso o	Liner	construction details.			
Seal 000	diameter in				
	nD material				
TO	Welded Threaded Glued				
25 ft at at					
Ger	Well Scal:	Pull monument and backfilled w/			
2022	Material Bent. Grout	Bentonite Grout	0	25	
0 A O	Amount 12 Gais				
Soc	Grout Weight 9.7				
200	Borehole diameter				
	in.	•			
0000	Bentonite Plug at least 3 ft. thick				
	Screen				
Filter 🖉 🖉	a naterial				
pack 0000 E	interval(s):				
n. 0°°C =	G & G From To				
TO < Si SI E	From To				
n	Slot size in.				
	Page Filter Pack:				
2000	Material	Date started 12/22/2004	Completed	12/22/2004	
Lovos L	512¢111.	(unbouded) Monitor Well Constructor Co	tification		
5) WELL TEST:		I certify that the work I performed on the	e construction. a	Iteration, or ab	andonment of
-,		this well is in compliance with Oregon we	II construction st	andards. Mat	erials used
Pump Bailer	Air Flowing Artesian	and information reported above are true to	the best knowle	dge and belief	10402
Permeability	YieldGPM	Signed		ate 10/21/05	10402
Conductivity	pH	orgineu	Di		
Temperature of Water	The Depth artesian flow found ft.	(headsh) Maritas W-11 Constants Const	insticut		
Was water analysis done?	Yes 🖌 No	Laccent responsibility for the construct	ion. alteration o	r abandonmen	t work
By whom?		nerformed on this well during the construct	tion dates report	ted above. All	work

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 well construction standards.
 This report is true to the best of my knowl dge and belief.

MWC Number 10442 Date 10/21/05 Signed

Name of supervising Geologist/Engineer

Depth of strata to be analyzed. From \_

Remarks \_

\_ ft. to \_\_\_

fi.

STATE OF OREGO		Well D # I		
(as required by ORS 537.765 & OAR 6	90-240-095)	Start Card #:	147843	
(1) OWNER/PROJECT	WELL NO. MW06-094		Des la sel des serie dis	
Name Reynolds Metals	WELLING.	(6) LOCATION OF WELL	J By legal description	n
Address 5100 Sundial Road		Well Location: County Multhoman	2 E Gui	
City Troutdale State OI	R Zip 97080	1 SW K of SF	of above section	10n 14
(2) TYPE OF WORK:		2. Either Street address of well lo	cation	
		5100 Sundial Road		
New construction	Alteration (Repair/Recondition)	or Tax lot number of well locat	ion 100	
Conversion	Deepening Abandonment	3. ATTACH MAP WITH LOCA approximate scale and north a	TION IDENTIFIED. Maj arrow.	p shall include
(3) DRILLING METHOD:		(7) STATIC WATER LEVI	EL:	
🔲 Rotary Air	Rotary Mud Cable	Ft. below land surface	Date	· · · · · · · · · · · · · · · · · · ·
Hollow Stem Auger	Other Grout in place	Artesian Pressure lb/sq in.	Date	
(4) BORE HOLE CONSTRI	UCTION	(8) WATER REARING 70	NFS	
Yes No		(6) WATER DEARING 20	1120.	
Special Standards 🚺 🔲 Depth of	f completed well 96 ft.	Depth at which water was first found		-
Vault C	09	From To	Est. Flow Rate	SWL
	Water-tight Cover			
	Surface flush vault			
ft. 0	Locking cap			
	Casing	······································		
	diameter 2 in			
	So So material	(9) WELL LOG: Groun	d clevation	
	Welded Threaded Glued	Material	From To	SWL
Sono		Pulled monument and backfilled		
So o	Liner	Bentonite Grout		
Scal 020	diameter in.			
	nu material			
TO $\prec$ $\circ \delta \circ$	Welded Threaded Glued	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
<u>96</u> ft. 37 C		Old Start Card: 479940		
Ca e All	Git age Well Seal:	Old Start Card. /175540		
	Material Bent. Grout	· · · · · · · · · · · · · · · · · · ·		
	Amount 17.5 Gals			
So 2	Grout Weight 9.7	the second s		
	Borehole diameter			
	in.			
6008	Bentonite Plug at least 3 ft. thick			
	Screen			
pack Co	a material			
0000 E	interval(s):			
	From To			
	Slot size in.			
	Filter Pack:			
0000	Size in	Date started 01/13/2005	Completed 01/13/200	5
	6706 SIZE III.	(unbonded) Monitor Well Constructor Co	ertification:	
(5) WELL TEST:		I certify that the work I performed on the	he construction, alteration, o	r abandonment of
Pump Bailer	Air Flowing Artesian	this well is in compliance with Oregon w and information reported above are true t	o the best knowledge and be	viateriais used
PermeabilityYie	ldGPM		MWC Numb	er 1042
Conductivity pH	· · · · · · · · · · · · · · · · · · ·	Signed V 2	Däte <u>4</u>	190
Temperature of Water °F	Depth artesian flow found ft.			

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

appe Signed

MWC Number

Name of supervising Geologist/Engineer

Depth of strata to be analyzed. From \_\_\_\_

Yes

No

ft. to \_\_\_\_

ft.

Was water analysis done?

By whom?

Remarks

MUL	Γ 75514	
STATE OF OREGON MONITODING WELL DEPOD	Wall ID the I	
MONITORING WELL REPORT	weil I.D. #: L	
Instructions for completing this report are on the last page of this form.	Start Card #: <u>167880</u>	-
(1) OWNER/PROJECT: WELL NO. MW06-176	(6) LOCATION OF WELL By legal description	
Name Reynolds Metals	Well Location County Multinemak	
Address 5100 Sundial Rd	Towachin 1 N Pance 3 F Section 14	
City Troutdale State OR Zip 97080	1 SW Karge V Range V Section	august.
(2) TYPE OF WORK:	1. Stv 24 bi www 24 of Boove section.	
	2. Either Street address of well location Same as owner	( <b>1</b>
New construction Alteration (Repair/Recondition)	or Tax lot number of well location 100	
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include	
	approximate scale and north arrow.	
(1) DDILLING METHOD.	(7) STATIC WATED I EVEL	-[]]
(5) DRILLING METHOD:	(7) STATIC WATER LEVEL:	
Rotary Air Rotary Mud Cable	Fi. below land surface Date	
Hollow Stem Augor	Artesian Pressure Ib/sg in. Date	
(4) BORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES:	•
Yes No		
Special Standards 💋 🔲 Depth of completed well 176 ft.	Depth at which water was first found	ല
	From To Est. Flow Rate SWL	1121
Vault Valer-tight Cover		115
		ודיון
TO Jos		
ft lot Locking cap		1
		1
Casing		,
0084 diameter	(9) WELLLOG: Ground elevation	
CO D <sup>2</sup> material		1
Welded Threaded Glued	Material From To SWL	
	Reference MULT 52874 for original	
Liner	construction.	
Seal as a diameter i	Glue fitting to the top of pvc and	
	pressure grout in place.	ㅋ
	Cut off PVC below ground surfance	
Verded Threaded Glued	(30 gallons)	
Other Well Scal:		
Material	Monument Removed	
Ora or Amount		
Grout Weight		
Borehole diameter		D
5000 in.		2
CAC Bentanite Plug at least 3 ft thic	k mar in work in Frank han	
	5 d'you en crea a c'anatoria	
pack CAR H		
o co interval(s):	FEB 0 4 (903	
	- WATER RESOURCES OLE 1	
	SALEM, OREGON	
	Date started 01/18/05 Completed 01/18/05	
	- (unbonded) Monitor Well Constructor Certification:	
(5) WELL TEST:	I certify that the work I performed on the construction, alteration, or abandonment of	
	this well is in compliance with Oregon well construction standards. Materials used	
Pump Baller Air Flowing Artesian	and information-reported above are true to the best knowledge and benef. MWC Number 10453	
	Signed Durchan Sum Date 2/01/05	
Conductivity pH		
Temperature of Water P Depth artesian flow found ft.	(handed) Manitor Well Constructor Certification	
Was water analysis done? Yes 🖌 No	Laccent responsibility for the construction, alteration, or abandonment work	
By whom?	performed on this well during the construction dates reported above. All work	
Depth of strata to be analyzed. From ft. to ft.	performed during this time is in compliance with Oregon well construction standards.	
Remarks	This report is true to the best of my knowledge and belief.	
-	K MWC Number 10442	
Name of supervising Geologist/Engineer	Signed / Un MAL Date 2/01/05	
	//	

#### STATE OF OREGON MONITORING WELL REPORT

(as required by Instructions f	ORS 537.765 & OAR or completing this r	690-240-095) eport are on the last p	age of this form.		Start (	Card #:
(1) OWNE Name Reynold	R/PROJECT: s Metals	WELL NO. MW	/08-027	(6) LOCA	ATION OI	F WE
Address 5100 St	undial Rd			Townshin "	1 N	R
City Troutdale	State C	R	Zip 97080	1. NW	Vi of NE	
(2) <b>TYPE</b> (	<b>DF WORK:</b>	_		2. Either	r Street address	s of wel
	ew construction	Alteration (Repa	ir/Recondition)	or Tay	k lot number of	f well lo
	onversion	Deepening	Abandonment	3. ATTA appro	CH MAP WI	TH LO and nor
(3) DRILL	ING METHOD:	n and a second		(7) STAT	IC WATE	R LE
R R	otary Air	Rotary Mud	Cable	,	Ft. below land	surface
Пн	ollow Stem Auger	Other		Artesian Press	ure	lh/sa in
				Antesian Press		oraq m.
(4) BORE I	HOLE CONSTR	UCTION:		(8) WATE	ER BEARI	ING Z
Special Standard	s Depth	of completed well 30	ft.	Depth at whic	h water was fi	rst foun
Vault	0	<u>ارم</u>		From	To	
vulit	2	Wate	er-tight Cover			
n./	D	ot Surfa	ace flush vault			
TO		Lock	ting cap			
<u> </u>		0				
2	~ 0 %	Casi	ing			
		dia	meter <b>2</b> in. terial	(9) WELI	LOG:	Gr
	005	Wel Wel	ded Threaded Glued		Material	
	Sond M	Dand r		Reference M	AULT 4280 fo	or origi
	2000	a o o o		construction	n.	
Seal		dia dia	meter in			
0	20, 20	0 20 <u>20</u>	tarial	6" Overdrill	of 2" well	
TO	Ro Rolling		dad Threaded Chuad	Backfill with	Bentonite G	Grout
( <sup>0</sup> )					(40 gal	lons)
	0 0 0 0000 000 0000 0000 0000 0000 0000 0000	Neo e		Bentonite C	hips (5 sacl	ks)
	OF CONTRACTOR	Well	Seal:			
	A XING S	Mate	erial	Monument F	Removed	
	0000	Domog Amo	ount			
	So 2	Grou	at Weight			
	200	Bord	chole diameter			
			in.		•	
	000	Bentonite	Plug at least 3 ft. thick			
C	0000	Scre Scre	cn			
Filter	8081	a mat	crial			
pack	0700 E	0000 inter	val(s):			
ft.	E Dool	Ge G Fron	1 To			
TO	Done al	From From	1 To			

## Well I.D. #: L

Start Card #: 167854 (amended)

`own	ship <u>1</u>	N	Range 3	E	Section 14
	NW	_ ¼ of _NE	¼ of above sec	ction.	
. 1	Either St	reet address of	well location sam	e as ow	ner
ē	or Tax lo	t number of we	ell location 100		
	ATTACH	I MAP WITH	LOCATION IDE	NTIFIE	D. Map shall include

Date \_\_\_\_

Date

#### 8) WATER BEARING ZONES:

Depth at which water was first found \_

From	То	Est. Flow Rate	SWL

#### 9) WELLLOG: Ground clevation

Material From То SWL Reference MULT 4280 for original construction. 6" Overdrill of 2" well 30' 0 30' Backfill with Bentonite Grout 5 (40 gallons) 5' Bentonite Chips (5 sacks) 0 Monument Removed . Date started 01/06/05 Completed 01/06/05

(unbonded) Monitor Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief. MWC Number 10453

Date 10/21/05 Signed

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

ft.

Pump	Bailer		Air	Flowing	Artesian	
Permeability		Yiel	d	G	PM	
Conductivity		pH				
Temperature of Wat	cr	_°F	Depth a	artesian flow f	ound	f
Was water analysis	done?	Yes	🗸 No			
By whom?						
Depth of strata to be	analyzed.	From		ft. to	ft.	
Remarks						

Slot size

Filter Pack: Material

Size

in.

in.

Name of supervising Geologist/Engineer \_

MWC Number 10442 Date 10/21/05 Signed

STATE OF ORE	GON				
(as required by ORS 537.765 & O	L REPORT DAR 690-240-095)	Start Card #: 1675	70		
Instructions for completing th	is report are on the last page of this form.	Start Card #: 1070			
(1) OWNER/PROJECT	WELL NO. MW08-127	(6) LOCATION OF WELL B	y legal de	scription	
ess 5100 Sundial Rd		Well Location: County Multnomah			
City Troutdale St	ate OR Zip 97080	Township 1 N Range 3	ΕΕ	Section	14
(2) TYPE OF WORK:	· · · · · · · · · · · · · · · · · · ·	1. <u>SW</u> ¼ of <u>SE</u> ¼ of a	bove section.		
		<b>2.</b> Either Street address of well locate	on same as	owner	
New construction	Alteration (Repair/Recondition)	or Tax lot number of well location	100		
Conversion	Deepening Abandonment	<ol> <li>ATTACH MAP WITH LOCATIOn approximate scale and north arrows</li> </ol>	DN IDENTIF w.	IED. Map sh	all include
(3) DRILLING METHO	DD:	(7) STATIC WATER LEVEL	:		
🗹 Rotary Air	🔲 Rotary Mud 🚺 Cable	Ft. below land surface	Date		
Hollow Stem Auger	Other	Artesian Pressure lb/sq in.	Date		
(4) BORE HOLE CONS	TRUCTION:	(8) WATER BEARING ZONI	ES:		
Special Standards	epth of completed well <b>130</b> ft.	Depth at which water was first found			
Vault 0		From To Est	. Flow Rate		SWL
vatin og	Water-tight Cover				
	Surface flush vault				
	Locking cap				
- CPol			· · · · · · · · · · · · · · · · · · ·		
	Casing Good diamater in	La construction and the second descent of the second second second second second second second second second se			
	diameter material	(9) WELL LOG: Ground cl	evation		
O a B	Welded Threaded Glued	Material	From	То	SWL
Sand		Reference MULT 52872 for original		-	
20°2	Liner	construction.			
Scal	diameter in.				
n pD pD	pD, pD material	6" Overdrill of 2" well to 130'	0	130'	
TO	Welded Threaded Glued	Backfill with Bentonite Grout	10	130'	
n 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.		(200 gallons)	+	4.01	
	Well Scal:	Bentonite Chips (10 sacks)	0	10	
000	Material	Manumant Removed			
	Amount	Monument Kenioved			
Bo Co	Grout Weight			1	
800	Borchole diameter				
6 0 8 0	in.				
50 G	Bentonite Plug at least 3 ft. thick				
	Screen				· ·
Filter 20 cm	ad O ad material				<i></i>
e no H	o o interval(s):				
	<b>G From To</b>				
	Slot size in.				
	I a I a Filter Pack:				
0000	Material	Date started 01/03/05	Completed (	01/04/05	
000	Sizein.	(unbouded) Monitor Well Constructor Certifi	cation:		
5) WELL TEST:		I certify that the work I performed on the co	onstruction, al	teration, or ab	andonment of
		this well is in compliance with Oregon well of	onstruction st	andards. Mat	erials used
Pump Bailer Permeability	Air Flowing Artesian	and information reported above are true to th	M	WC Number	10453
Conductivity	nH	Signed dana for	Da	te 2/01/05	
Temperature of Water	°F Depth artesian flow found ft.				
Was water analysis done?	Ycs VNo	(bonded) Monitor Well Constructor Certifica	tion:		(
By whom?		I accept responsibility for the construction	, alteration, or	abandonmen	t work

Name of supervising Geologist/Engineer _	

Remarks

Depth of strata to be analyzed. From \_\_\_\_\_ fl. to \_\_\_\_\_ fl.

.

STATE OF OREGON MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095)	Well I.D. #: L
Instructions for completing this report are on the last page of this form.           (1) OWNER/PROJECT:         WELL NO. MW08-169           Name Reynolds Metals         Name Reynolds Metals	(6) LOCATION OF WELL By legal description Well Location: County Multnomah
ess 5100 Sundial Rd	Township 1 N Range 3 E Section 14
(2) TYPE OF WORK:	1. SW ½ of SE ¼ of above section.
	2. Either Street address of well location same as owner
New construction Alteration (Repair/Recondition)	or Tax lot number of well location 100
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
(3) DRILLING METHOD:	(7) STATIC WATER LEVEL:
🗹 Rotary Air 🗌 Rotary Mud 🔲 Cable	Ft. below land surface Date
Hollow Stem Auger Other	Artesian Pressure lb/sq in. Date
(4) BORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES:
Special Standards $\prod_{i=1}^{Yes} V_i$ Depth of completed well <u>172</u> ft.	Depth at which water was first found
Vault (	From To Est. Flow Rate SWL
Water-tight Cover	
TO $V$ Surface flush vault	
ft. 0 Locking cap	
Casing	
diameter	in. (9) WELL LOG: Ground elevation
Welded Threaded Glue	d Material From To SWL
	Reference MULT 52871 for original
	construction.
Seal 02.00 diameter	in
1. $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$	6" Overdrill of 2" well 0 172'
$TO \prec 0000$ Welded Threaded Glues	Backfill with Bentonite Grout 10 172
	Bentonite Chins (10 sacks) 0 10'
Ga well Seal:	
A Starting Material	Monument Removed
o a o a da Amount	
Grout Weight	
Sop	
Charles and the second	NL
Filter DO T Filter material	
pack 0000 E over interval(s):	
ft To	
- II. $000$ $ 1000$ $  1000$ $  1000$ $         -$	
Ora Ora Material	
<b>000 S Size</b> in.	Date started 01/05/05 Completed 01/06/05
(5) WELL TEST:	<ul> <li>(unbonded) Monitor Weil Constructor Certification: I certify that the work I performed on the construction, alteration, or abandonment of the construction standard. Materials used</li> </ul>
Pump Bailer Air Flowing Artesian	and information reported above are true to the best-knowledge and belief.
PermeabilityYieldGPM	Simul Say Jan Bus MWC Number 10453
Conductivity pH	Signed Anna Date 200105
Temperature of Water °F Depth artesian flow found ft.	(handed) Manitas Wall Constructor Cartification
Was water analysis done? Yes 🗸 No	I accept responsibility for the construction, alteration, or abandonment work
By whom?	performed on this well during the construction dates reported above. All work
Remarks II. 10 II. 10 II.	This report is true to the best of my knowledge and belief.

This report is true	to the best of m	y knowledge and be	elief.	
- ()	-11			
	YL	1.	MWC Number	10442
Signed My	. Mo	N	Date 2/01/05	

Name of supervising Geologist/Engineer

## STATE OF OREGON MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095)

We	eII	I.D. #:	L	
a.		~ • •	4070	

167855(amo (hab)

Instructions for completing this report are on the last page of this form.	Start Cald #. 10/055(amended)	
(1) OWNER/PROJECT: WELL NO. MW09-030 Name Reynolds Metals	(6) LOCATION OF WELL By legal description	
Address 5100 Sundial Rd	Well Location: County Multnomah	
City Troutdale State OR Zip 97080	Township <u>1</u> N Range <u>3</u> E Section <u>14</u>	
(2) TYPE OF WORK:	<ol> <li>SW ¼ of SE ¼ of above section.</li> <li>Either Street address of well location same as owner</li> </ol>	
New construction Alteration (Repair/Recondition)	as Tay lat number of well logation 100	
Conversion Deepening ZAbandonment	ATTACH MAD WITH LOCATION IDENTIFIED. Man shall inclu	
	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.	
(3) DRILLING METHOD:	(7) STATIC WATER LEVEL:	
Rotary Air Rotary Mud Cable	Ft. below land surface Date	
Hollow Stem Auger Other	Artesian Pressure lb/sq in. Date	
(A) DODE HOLE CONSTRUCTION		
(4) BORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES:	
Special Standards $\square \square \square \square \square \square \square$ Depth of completed well <u>32</u> ft.	Depth at which water was first found	
Vault (2)	From To Est. Flow Rate SWL	
Water-tight Cover		
fl. Surface flush vault		
TO D		
Casing		
diameter <u>2</u> in.	(9) WELLLOG: Ground elevation	
	Material From To SW	/1
	Material From 10 Sw	<u> </u>
Liner	construction détails.	
Scal 0.0 control diameter in.		
0 ft. a O co material		
$TO \prec 000$ Welded Threaded Glued		
Con co Well Seal:		
a a b Material Bent.	Pull monument, overdrilled to well	
Card Card Amount 140 gallons	depth & backfilled w/ bentonite 0 32	
o o o o o o o o o o o o o o o o o o o		
Borchole diameter		
in.		
DDD Bentonite Plug at least 3 ft. thick		
Sercen		,
Filter		
$pack = 0^{\circ} 2_{0}^{\circ}$ $\exists a = 0^{\circ} 2_{0}^{\circ}$ interval(s):		
ftCCCCCCToTo		
TO Z PAR B TO TO		
ft. So $ft.$ Slot size in.		
$2^\circ 2^\circ 2$ $\exists$ $2^\circ 2^\circ 2^\circ 2^\circ$ Filter Pack:		
a o o d o d Material	Date started 12/07/05	
(5) WELL TEST	(unbonded) Monitor Well Constructor Certification:	ent of
	this well is in compliance with Oregon well construction standards. Materials use	ed
Pump Bailer Air Flowing Artesian	and information reported above are true to the best knowledge and belief.	
PermeabilityYieldGPM	MWC Number 10402	
Conductivity pH	Signed Date 10/21/05	
Temperature of Water °F Depth artesian flow found ft.		
Was water analysis done? Yes 🗸 No	(bonded) Monitor Well Constructor Certification:	
By whom?	I accept responsibility for the construction, alteration, or abandonment work	
Depth of strata to be analyzed. From ft. to ft.	performed during this time is in compliance with Oregon well construction standa	ırds.
Remarks	This report is true to the best of my knowledge and belief.	
Name of supervising Geologist/Engineer	Signed The South Date 10/21/05	
	Date Date Date	

MONITORING WELL I	REPORT	Well I.D. #: L		
Instructions for completing this r	o90-240-095) eport are on the last page of this form.	Start Card #: 167	840(amended)	
1) OWNER/PROJECT: ame Reynolds Metals	WELL NO. MW12-184	(6) LOCATION OF WELL	By legal description	n
ddress 5100 Sundial Rd		Well Location: County Multhoman	2	. 11
ty Troutdale State C	OR Zip 97080	Township I IN Range		tion <u>14</u>
) TYPE OF WORK:		2. Either Street address of well local	tion same as owner	
	Alteration (Repair/Recondition)	or Tax lot number of well location	1 100	
Conversion		3. ATTACH MAP WITH LOCATI approximate scale and north arr	ION IDENTIFIED. Maj 'ow.	p shall include
) DRILLING METHOD:		(7) STATIC WATER LEVEI	L:	
Rotary Air	🔲 Rotary Mud 🛛 🗌 Cable	Ft. below land surface	Date	
Hollow Stem Auger	Other grout in place	Artesian Pressure lb/sq in.	Date	
) BORE HOLE CONSTR	RUCTION:	(8) WATER BEARING ZON	ES:	
ecial Standards 🗹 🔲 Depth	of completed well <b>184.5</b> ft.	Depth at which water was first found		-
Vault (	0	From To E	st. Flow Rate	SWL
	Water-tight Cover			
	Surface flush vault			
	Locking cap			
	0			
C Sold K	Casing			L
0000	diameter 2 in	(9) WELLLOG: Ground	elevation	
	material			011/1
2004	Welded Threaded Glued	Material	From 10	SWL
0000		Reference original start 856/6 for		
Seal So S	Liner	construction details.		
	nD nD diameter in	•		
	material			
	Welded Threaded Glued			
38 20	Well Scal:	Pull monument and backfilled w/		
Color A	Material Bent. Grout	Bentonite Grout	0 184.5	
0 A O A	Amount 30 Gais	-		
So S	Grout Weight 9.7			
	Borchole diameter			
	in.			
000	Bentonite Plug at least 3 ft. thick			
	Screen Screen			
Filter do d	🖉 Ö 🤕 e material			
	interval(s):			
ft.	From To			
70~ 200 2 日	From To			
	Silter Pack			
	Material			
Sog	Sizein.	Date started 12/09/2004	Completed 12/09/200	)4
WELL TEST:		<ul> <li>(unbonded) Monitor Well Constructor Cert I certify that the work I performed on the</li> </ul>	ification: construction, alteration, of	or abandonment
		this well is in compliance with Oregon wel	l construction standards.	Materials used
Pump Bailer	Air Flowing Artesian	and information reported above are true to-	the best knowledge and be	clief. or 10402
Permeability Y	GPM	Signed	Date 10/21/	05
Conductivity p				
Was water analysis dans?	No	(bonded) Monitor Well Constructor Certific	cation:	
was water analysis cone? Yes				

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

MWC Number 10442 Date 10/21/05 Signed

Name of supervising Geologist/Engineer

Depth of strata to be analyzed. From \_

By whom?

Remarks \_

ft. to \_\_\_\_

\_\_\_ ft.

STATE OF OREGON MONITORING WELL RI	N E <b>PORT</b>	Well I.D. #: L			
(as required by ORS 537.765 & OAR 69 Instructions for completing this rep	20-240-095) Port are on the last name of this form	Start Card #: <u>16</u>	7836(amend	ed)	
(1) OWNER/PROJECT: Name Reynolds Metals	WELL NO. MW15-024	(6) LOCATION OF WELL	By legal de	scription	
Address 5100 Sundial Rd		Well Location: County Multnomah			
City Troutdale State OR	Zip 97080	Township <u>1</u> N Range	<u>3</u> E	Section	14
(2) TYPE OF WORK:		1. <u>SW</u> ¼ of <u>SE</u> ¼ o	f above section.		
		2. Either Street address of well loc	ation same as	owner	
New construction	Alteration (Repair/Recondition)	or Tax lot number of well location	on <u>100</u>		
Conversion	Deepening Abandonment	3. ATTACH MAP WITH LOCAT approximate scale and north a	ION IDENTIF	IED. Map sh	ali include
(3) DRILLING METHOD:		(7) STATIC WATER LEVE	L:		
Rotary Air	Rotary Mud Cable	Ft, below land surface	Date		
Hollow Stem Auger	☑ Other grout in place	Artesian Pressure lb/sq in.	Date		
(4) BORE HOLE CONSTRU	JCTION:	(8) WATER BEARING ZOI	NES:		
Special Standards <b>V</b> Depth of	completed well <b>24</b> ft	Depth at which water was first found			
	I.	From To	Est Flow Pate		SWI
Vault (	Water tight Cover	1011 10	Sat. Flow Rate		5 WL
n.) 🛐	Surface fluck yearlt				
TO	Surface Hush vault				
ft. 10	Locking cap				
	0				
Es 2	Casing				
3000	diameter $2$ in.	(9) WELL LOG: Ground	l clevation		
$\nabla_{\Delta} \approx 100$	material				
a 0 0 m	Welded Threaded Glued	Material	From	To	SWL
0 0 0 0		Reference original start 80229 for			
So 3	Liner	construction details.			
Seal 020	diameter in.				
	D D material				
TO	Welded Threaded Glued				
24 ft 28 2					
OB CONTRACTOR	Well Scal:	Pull monument and backfilled w/			
	Material Bent. Grout	Bentonite Grout	0	24	
on on the	Amount 12 Gals				
	Grout Weight 9.7				
	Borchole diameter				
50 2 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	JODD in				
	Bentonite Plug at least 3 ft, thick				
	Bentomite Flug at least 5 ft, tillek				
	BD BD Screen				
	material				
	o o interval(s):				
ft. ] So S E	From To				
TO Y ON WILL	Prom To				
fl. 🛛 🛜 🖓 🖓 🗄 🗲	Slot size in.				
	Para Filter Pack:				
200%	Material	Date started 12/09/2004	Completed	12/09/2004	
C NOG L	5120 in.	(unhanded) Manitar Wall Constructor Co	rtification		
(5) WELL TEST:		I certify that the work I performed as the	e construction a	Iteration, or al-	bandonment of
		this well is in compliance with Oregon we	ell construction si	tandards. Mat	crials used
Pump Bailer	Air Flowing Artesian	and information reported above are true to	the best knowle	dgc and belief	10402
Permeability Yiel	ldGPM			WC Number	10402
Conductivity pH	No	Signed	Da	10/21/05	
Temperature of Water °F	Depth artesian flow found ft.				
Was water analysis done? Yes	✓ No	(bonded) Monitor Well Constructor Certin	lication:	- about	t work-
By whom?		i accept responsibility for the construct	tion, alteration, of	r abandonmen	t work

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 well construction standards. This report is true to the best of my knowledge and belief.

MWC Number 10442 Date 10/21/05 Signed

Name of supervising Geologist/Engineer

Depth of strata to be analyzed. From \_\_\_\_

Remarks\_

\_ ft. to \_\_\_\_

ft.

## STATE OF OREGON

(1) OWNER/PROJECT: WELL NO. MW15-086		
Name Reynolds Metals	(6) LOCATION OF WELL By legal description	1
Address 5100 Sundial Rd	Townshin 1 N Range 3 F Section	on 14
(2) TVPE OF WORK:	1. SW ¼ of SE ¼ of above section.	
	2. Either Street address of well location same as owner	
New construction Alteration (Repair/Recondition)	or Tax lot number of well location 100	
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map approximate scale and north arrow.	shall include
(3) DRILLING METHOD:	(7) STATIC WATER LEVEL:	
Rotary Air Cable	Ft. below land surface Date	
Hollow Stem Auger I Other grout in place	Artesian Pressure lb/sq in. Date	
(4) BORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES:	
Special Standards $\mathbf{V}^{\text{res}}$ Depth of completed well <b>87</b> ft.	Depth at which water was first found	
Vault	From To Est. Flow Rate	SWL
ft Surface flush vault		
$\begin{array}{c c} & & & & \\ \hline & & & & \\ \hline & & & & \\ \hline & & & &$		
a $b$ $c$	(9) WELLLOG: Ground elevation	
Welded Threaded Glued	Material From To	SWL
Dave Dave Dave	Reference original start 85672 for	
	construction details.	
Seal 02.6 diameter in.		
0 ft. $20$ $20$ material		
$TO \prec OO_{OO}$ Welded Threaded Glued		
On we Well Seal:	Pull monument and backfilled w/	
A Contraction of the second se	Bentonite Grout 0 87	
ora ora Amount 20 Gals		
Grout Weight 9.1		
Sopol		
Do Clarke Bastonite Plug at least 3 ft, thick	· · · · · · · · · · · · · · · · · · ·	
Filter		
pack $\nabla \lambda_0 \nabla$ $\Xi$ interval(s):		
ft. ] Good E Good From To		
- tt = 0.000  Stot size m.		
Da og H Da og Material		
500 S Size in.	Date started 12/09/2004 Completed 12/09/2004	
5) WELL TEST:	(unbonded) Monitor Well Constructor Certification: I certify that the work I performed on the construction, alteration, or this well is in compliance with Oregon well construction standards.	abandonment o
Pump Bailer Air Flowing Artesian	and information reported above are true to the best knowledge and bel	ef.
Permeability Yield GPM	Signed MWC Numbe	r 10402
Conductivity pH	DigitedDate 102403	
Competentiation of Water T Depth artesian flow found ft.	(bonded) Monitor Well Constructor Certification:	
was water analysis done? Yes V NO By whom?	I accept responsibility for the construction, alteration, or abandonm	ent work
Depth of strata to be analyzed. From ft. to ft.	performed on this well during the construction dates reported above. A performed during this time is in compliance with Oregon well construct	<ol> <li>work</li> <li>tion standards.</li> </ol>

Signed

performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief. MWC Number 10442 Date 10/24/05

Name of supervising Geologist/Engineer

Remarks

STATE OF ORE MONITORING WEL	CGON LREPORT Amenda	Well I.D. #: L	
(as required by ORS 537.765 & O Instructions for completing th	OAR 690-240-095)	Start Card #:	341
(1) OWNER/PROJECT Name Reynolds Metals	WELL NO. MW15-175	(6) LOCATION OF WELL By leg	al description
Address 5100 Sundlal Road		Well Location: County Multnomah	E a .: 44
City Troutdale St	ate OR Zip 97080	Township 1 IN Range 3	E Section 14
(2) TYPE OF WORK:		Sw 4 of SE 4 of above se     Either Street address of well location	ction.
New construction	Alteration (Repair/Recondition)	or Tax lot number of well location 100	
Conversion	Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDE	ENTIFIED. Map shall include
(3) DRILLING METHO	)D:	(7) STATIC WATER LEVEL:	
Rotary Air	Rotary Mud Cable	Ft, below land surface Date	
Hollow Stem Auger	Other Grout in place	Artesian Pressure lb/sq in. Date	
(4) BORE HOLE CONS	TRUCTION:	(8) WATER BEARING ZONES:	
Special Standards 🗹 🗍 De	epth of completed well <b>178.5</b> ft.	Depth at which water was first found	
Vault (	DA D	From To Est. Flow	Rate SWL
er l	Water-tight Cover		
	Surface flush vault		
	Locking cap		
	e Casing		
	0.000 diameter 2 in.	(9) WELL LOG: Ground elevation	
000	Waldad Threaded Churd	Material	irom To SWL
Card		Pulled monument and backfilled	
200		Bentonite Grout	
Seal	diameter in		
	n D nD material		
	Welded Threaded Glued		
175.8 ft. 0.0 C			
	G O G	Old Start Card: 85678	
000	Material Bent, Grout		
0000	Amount 30 Gals		
a 0°	Grout Weight 9.7		
	Borchole diameter		
5000	in.		
En g	Bentonite Plug at least 3 ft. thick		
(0205	o Sercen		
Filter	material		
pack OooO	interval(s):		
f. 0°°C 目	6 From To		
TO Y SA SI E	From To		
n   500	Slot size in.		
	CA Filter Pack:		
So C	Sizein.	Date started 12/09/2004 Comp	leted 12/09/2004
(5) WELL TEST:		(unbonded) Monitor Well Constructor Certification: I certify that the work I performed on the construction this well is in compliance with Oregon well construction	tion, alteration, or abandonment of ction standards. Materials used
Permeability Baller	Yield GPM	and information reported above are true to the best k	MWC Number
Conductivity	pH	Signed	Date 418 05
Temperature of Water	°F Depth artesian flow found ft.		
Was water analysis done?	Ycs No	(bonded) Monitor Well Constructor Certification:	
By whom?		I accept responsibility for the construction, altera	tion, or abandonment work
Depth of strata to be analyzed.	From ft. to ft.	performed during this time is in compliance with Ore	egon well construction standards.
Remarks		This report is true to the best of my knowledge and b	elicf.

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and the factor
Signed

MWC Number 10211 Date 4/19/05

Name of supervising Geologist/Engineer

#### STATE OF OREGON MONITORING WELL REPORT (as required Instruction

Well I.D. #:	L
Start Card #	167856/amon/

(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this report are on the last page of this form.	Start Card #: <u>167856(amended)</u>
(1) OWNER/PROJECT: WELL NO. MW20-026	(6) LOCATION OF WELL By legal description
Name Reynolds Metals	Well Location: County Multhomah
Address 5100 Sundial Rd	Township 1 N Range 3 E Section 14
(1) TVPE OF WORK:	1. SW ¼ of SE ¼ of above section.
(2) THE OF WORK:	2. Either Street address of well location same as owner
New construction Alteration (Repair/Recondition)	or Tax lot number of well location 100
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
(3) DRILLING METHOD:	(7) STATIC WATER LEVEL:
Rotary Air Rotary Mud Cable	Ft. below land surface Date
Hollow Stem Auger Other	Artesian Pressure Ib/sq in. Date
(4) BORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES:
Special Standards $\square \square \square \square \square$ Depth of completed well <u>26.5</u> ft.	Depth at which water was first found
Vault Vault Water-tight Cover	From To Est. Flow Rate SWL
n. Surface flush vault	
TO DE Locking cap	
Casing	
a = 0 $a = 0$ $a =$	(9) WELL LOG: Ground elevation
Welded Threaded Glued	Material From To SWL
	Reference original start 81122 for
	construction details.
Seal a company for the seal of	
<b>0</b> ft. $0$	
$TO \prec 0$	
Grief went Seal:	Pull monument, overdrilled to well
CONCENTRATION Amount 17 bags	depth & backfilled w/ bentonite 0 26.5
and a Grout Weight	
Borcholc diameter	
5020 in.	
DOD Bentonite Plug at least 3 ft. thick	
Sercen	
Filter Hore material	
0 $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$	
$- \underbrace{ft}_{TO} = \underbrace{S_{0}}_{S_{0}} \underbrace{S_{0}}_{S_{0}} \underbrace{From}_{TO} \underbrace{From}_{TO} \underbrace{TO}_{TO} \underbrace{From}_{TO} \underbrace{From}_$	
f. $[3, 5]$	
a a a a a a a a a a a a a a a a a a a	
Solution     Solution     Material       Solution     Size     in.	Date started 12/07/05 Completed 12/07/05
	(unbonded) Monitor Well Constructor Certification:
(5) WELL TEST:	I certify that the work I performed orghe construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used

Signed

Pump Bailer Flowing Artesian Air Permeability Yield GPM Conductivity pН °F Temperature of Water Depth artesian flow found ft. ✓ No Was water analysis done? Yes By whom? Depth of strata to be analyzed. From \_\_\_\_\_ \_\_\_\_ ft. to \_\_\_\_ ft. Remarks\_

Name of s	upervising	Geolog	ist/Engincer
-----------	------------	--------	--------------

This report is true to the best of my knowledge and belief. Signed

(bonded) Monitor Well Constructor Certification:

and information reported above are true to the best knowledge and belief. MWC Number 10402

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 well construction standards.

> MWC Number 10442 Date 10/21/05

Date 10/21/05

STATE OF OREGO MONITORING WELL R (as required by ORS 537.765 & OAR 6	N EPORT 90-240-095) Amer	Nacel Well I.D. #: L		
Instructions for completing this rep (1) OWNER/PROJECT: Name Reynolds Metals	port are on the last page of this form. WELL NO. MW21-063	(6) LOCATION OF WELL By	legal description	on
Address 5100 Sundial Road		Well Location: County Multnomah		
City Troutdale State O	R Zip 97080 2 2	Township <u>1</u> N Range <u>3</u>	E Sec	tion 14
(2) TYPE OF WORK:		SW       ¼ of SE       ¼ of ab         Either Street address of well location	ove section. n	
	Alteration (Banair/Basandition)	5100 Sundial Road	100	
		or lax lot number of well location		
		3. ATTACH MAP WITH LOCATIO approximate scale and north arroy	N IDENTIFIED. Ma v.	p snall include
(3) DRILLING METHOD:		(7) STATIC WATER LEVEL:		
Rotary Air	Rotary Mud Cable	Ft. below land surface	Date	
Hollow Stem Auger	Other	Artesian Pressure lb/sq in.	Date	
(4) BORE HOLE CONSTRU	UCTION:	(8) WATER BEARING ZONE	S:	
Special Standards 🔲 🗹 Depth o	f completed well <u>65</u> ft.	Depth at which water was first found		
Vault	01	From To Est.	Flow Rate	SWL
	Water-tight Cover			
	Surface flush vault			
	Locking cap			
	e Casina			
	diameter 2 in.			
	material	(9) WELLLOG: Ground cle	vation	
	Welded Threaded Glued	Material	From To	SWL
Do a D		Pulled monument and overdrilled		
S° C	Liner	well to depth. Backfilled with		
Seal og Seal	diameter in,	Bentonite		
0 0 0	naterial			
TO Y SUS	Welded Threaded Glued			
65 ft. dt d				
	Well Seal:	Old Start Card: 79938		
000	Material Bent. Grout			
	Amount 160 Gals			
	Grout Weight 9.7			
	Borchole diameter			
200 <sup>1</sup>	000 <u>10</u> in.			
So 2	Bentonite Plug at least 3 ft. thick			
(000)	Screen			1
Filter	and material			÷
	interval(s):			
ft.	00 From To			
TO Y PAR E	P∩n ∞ From To			
ft.   500 H	Slot sizein.			
	NAVA Plack			
2002	Sizein.	Date started 01/04/2005	Completed 01/04/20	05
(5) WELL TEST: Pump Bailer	Air Flowing Artesian	(unbonded) Monitor Well Constructor Certifi I certify that the work I performed on the co this well is in compliance with Oregon well c and information reported above are tuie to the	cation: onstruction, alteration, o onstruction standards. ; best knowledge and b	or abandonment of Materials used belief.
PermeabilityYio	eldGPM	NOT	) MWC Num	ber 1042-
Conductivity pH	I	Signed	Date	18105
Temperature of Water °F	Dcpth artesian flow foundft.			
Was water analysis done? Yes No (bonded) Monitor Well Constructor (		(bonded) Monitor Well Constructor Certificat	ion:	ment work
By whom?		performed on this well during the construction	n dates reported above.	. All work
Depth of strata to be analyzed. From	n ft. to ft.	performed during this time is in compliance w	ith Oregon well constr	uction standards.
Remarks		This report is true to the best of my bhowledge	e and belief.	1 - 200 - 1 - 1

Name of supervising Geologist/Engineer

Signed Maymes

MWC Number / 2 Date \_\_\_\_\_ 105

Start Card #	STATE OF OREGON MONITORING WELL REPORT	Well I.D. #: L
Instructions for completions for completions for completed wereals in the last page of the form.         Winge Repurchers         Winge Repurchers         US DIVERAPROLECT:         Is 3005 animal ref.         Controlations	(as required by ORS 537.765 & OAR 690-240-095)	Start Card #: 167882
	Instructions for completing this report are on the last page of this form.           (1) OWNER/PROJECT:         WELL NO. MW21-176	(6) LOCATION OF WELL By legal description
Low Troutlation       Sinte OR       Zip 97080       Township 1       N Rongs 3       E Section 14         (a) TYPE OF WORK:	Name Reynolds Metals	Well Location: County Multnomah
(2) TYPE OF WORK:       1. SW       Not SE       Well Se       Not SE       Well See Section            Sw       Not SE       Well Section Barrows       Section Section Section Section       Section Sectin Section Section Section Section Section Sectin Sectin	City Troutdale State OR Zip 97080	Township 1 N Range 3 E Section 14
1. Either Strett address of vell location 100         Conversion       Despening         [] Alteration (Repair/Recondition)         [] Conversion       Despening         [] Antary Air       [] Catary Air         [] Hollew Stein Auger       Other         [] Hollew Stein Auger       Depth of completed well B4       Depth of completed well B4         [] Hollew Stein Auger       Depth of completed well B4       Depth of demter         [] Hollew Stein Bartial       Depth of completed well B4       Depth of demter         [] Hollew Stein Bartial       Depth of completed Well B4       Depth of d	(2) TYPE OF WORK:	I. SW 1/4 of SE 1/4 of above section.
Image: Conversion       Interation (Repair/Recondition)       To F Tax Iorumsher of well location 190         (3) DRILLING METHOD:       (7) STATU WATER LEVEL:         Image: Conversion       Image: Conversion       Image: Conversion         (4) BORE HOLE CONSTRUCTION:       (7) STATU WATER BEARING ZONES:         Special Standards       Image: Conversion       Image: Conversion         (4) BORE HOLE CONSTRUCTION:       (8) WATER BEARING ZONES:         Special Standards       Image: Conversion       Image: Conversion         (9) WELL LOG:       Ground elevation         (9) WELL LOG:       Ground elevation         (9) WELL LOG:       Ground elevation         (10) Well (10) (10) (10) (10) (10) (10) (10) (10)		2. Either Street address of well location same as owner
Conversion     Despening     Zhandonment     So ATTACH MAP WITH LOCKHIPTED. Mag shall include     approximate case and north arrow.     (7) STATIC WATER LEVEL:	New construction Alteration (Repair/Recondition)	or Tax lot number of well location 100
(3) DRILLING METHOD:       (7) STATIC WATER LEVEL:	Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
I Rotary Air	(3) DRILLING METHOD:	(7) STATIC WATER LEVEL:
Artesian Pressure       Iblog in.       Date         (4) BORE HOLE CONSTRUCTION:       (8) WATER BEARING ZONES:         Special Standards       Depth of completed well 84       ft.         Valit       Image: Completed well 84       ft.         Scal       Image: Completed well 84       ft.         Scal       Image: Completed well 84       ft.         Vertrial       To ft.       Vertrial         Vertrial       Material       image: Completed well 84         To ft.       Vertrial       Material       image: Completed 911206         Complete       Vertrial       Material       image: Completed 911206         To ft.       Vertrial       Manument Removed<	🗹 Rotary Air 🔲 Rotary Mud 🔲 Cable	Ft. below land surface Date
(4) BORE HOLE CONSTRUCTION:       (5) WATER BEARING ZONES:         Special Standard:       Depth of completed well 84	Hollow Stem Auger Other	Artesian Pressure lb/sq in. Date
(c) DURLING TOUCHART (C) MALEN DEPART DURLICHER (C) MALEN DURLICHER (C) MALE	(4) BORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES:
Special Standards       Depth of completed well 84       ft.       Depth at which water was first found         Mult       Water-tight Cover       Surface flush vault       Locking cap         To       Surface flush vault       Locking cap         To       Surface flush vault       Locking cap         Seal       Surface flush vault       Locking cap         Seal       Surface flush vault       Locking cap         To       Surface flush vault       Locking cap         Seal       Surface flush vault       Locking cap         To       Surface flush vault       Locking cap         Seal       Surface flush vault       Locking cap         To       Surface flush vault       Locking cap         Seal       Surface flush vault       Material         To       Surface flush vault       Material         To       Surface flush vault       Bentonite Grout       5' B4'         Bentonite Flug at least 3 R. thick       Store of the work locatruction, alterial       Material         Surface flush valter valls)       Store of the work locatruction can, alterial, alterial       Interval(s):         To       Store of the work locatruction can, alterial, alterial       Interval(s):         To       Store of the work locatruction cante	Yes No	(b) WATER DEARING ZONES.
Vault       Prominent Removed       State of the state of th	Special Standards 🚺 🔲 Depth of completed well <u>84</u> ft.	Depth at which water was first found
Image: Seal file of the second sec	Vault	From To Est. Flow Rate SWL
To       File       File       Casing       Gameter       in         material       material       material       (9) WELL LOG:       Ground elevation         Scal       Gameter       in       material       (9) WELL LOG:       Ground elevation         To       So at       Gameter       in       (1)       (2)       (2)       (2)         To       So at       Gameter       in       (2)	Water-tight Cover	
Image: Construction of the second	$ \frac{f}{f}$ Surface flush vault	
Scal	ft D	
Scal       Clsing         Scal       Welded Threaded Glued        R       Welded Threaded Glued <td></td> <td></td>		
Seal       3.8 gr	Casing Casing	
Seal       Seal       Seal       Internation       Internation       Internation	Co 8 diameter in the second se	(9) WELLLOG: Ground elevation
Scal       Scal       Scal       Image: Scal	Welded Threaded Glued	Material From To SWL
Scal		Reference MULT 52864 for original
Seal       0       0       84'		construction.
n.       moderation	Scal diameter in.	
TO       SO by       Welded Threaded Glued	p U, p U material material	6" Overdrill of 2" well 0 84'
	$TO \prec Obo$ Welded Threaded Glued	Backfill with Bentonite Grout 5' 84'
Filter       Point of the chips (5 sacks)       0       5         Filter       Point of the chips (5 sacks)       0       5         Print of the chips (5 sacks)       0       0         Print of the chips (5 sacks) <td></td> <td>(440 gallons)</td>		(440 gallons)
Filter       Air       Flowing Artesian         Permebility       Yield       GPM         Permebility       Yield       GPM         Signed       Air       Flowing Artesian         Permebility       Yield       GPM         Signed       Air       Flowing Artesian         Permebility       Yield       GPM         Signed       Air       Flowing Artesian         Permebility       Yield       GPM         Signed       Air       Signed         Signed       Monument Removed       Image: Air         Signed       Monument Removed       Image: Air         Pump       Bailer       Air         Porteolity       GPM       Signed       Image: Air         Signed       Yield       Monument Removed       Image: Air         Pump       Bailer       Air       Flowing Artesian         Permebility       Pil       Monument Removed       Image: Air         Signed       Monument Removed       Image: Air       Image: Air         Signed       Monument Removed       Image: Air       Image: Air         Signed       Monument Removed       Image: Air       Image: Air         Signed	at a well Seal:	Bentonite Chips (5 sacks) 0 5
Filter       So of a gradient conductivity       Grout Weight       Immediate conductivity         Filter       So of a gradient conductivity       Grout Weight       Immediate conductivity         Filter       So of a gradient conductivity       Grout Weight       Immediate conductivity         Filter       So of a gradient conductivity       Gradient conductivity       Immediate conductivity         Pump       Bailer       Air       Flowing Artesian         Permeability       Yield       GPM         Conductivity       pH       GPM	G d o Material	Monument Removed
Filter       Borchole diameter         Borchole diameter       in.         Borchole diameter       interval(s):         Filter       From         Go G	OR OR AMOUNT	
Filler       Borchole diameter         Filler       Bentonite Plug at least 3 ft. thick         Store at the total set at the set the best knowledge and be	Grout Weight	
Filter       Image: Solution of the second material interval(s):         Filter       Image: Solution of the second material interval(s):         Fr.       Image: Solution of the second material interval(s):         Fr.       Image: Solution of the second material interval(s):         Fr.       Image: Solution of the second material interval(s):         From       To         Image: Solution of the second material interval(s):       Image: Solution of the second material interval(s):         From       To         Image: Solution of the second material interval(s):       Image: Solution of the second material interval(s):         Filter Pack:       Solution of the second material interval(s):         Material       Image: Solution of the second material interval(s):         Solution of the second material interval inter	a o c Borchole diameter	
Filter pack       So of the second seco	in.	
Filter pack       Screen        ft.	Bentonite Plug at least 3 ft. thick	
interval (s):       interval (s):         ft.       interval (s):	Filter $pO_p pQ = rO_p pQ$	
ft.       Good Good Good Good Good Good Good Goo	pack Do H H Do H Haterial	
TO       To       To	f	· · · · · · · · · · · · · · · · · · ·
ft.       Good       Slot sizein.         Filter Pack:       Filter Pack:         Material	TO < So S E From To	
Image: Construction of the sector of the	ft. 500 H	
(5) WELL TEST:       Date started 01/12/05       Completed 01/19/05         Pump       Bailer       Air       Flowing Artesian         Permeability       Yield       GPM         Conductivity       pH       GPM	$0 \bigcirc 0 \bigcirc$	
(5) WELL TEST: Pump Bailer Air Flowing Artesian Permeability Yield GPM Conductivity pH	Gro Size in.	Date started 01/12/05 Completed 01/19/05
(5) WELLTEST:       I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.         Pump       Bailer       Air       Flowing Artesian       and information reported above are true to the best knowledge and belief.         Permeability       Yield       GPM       MWC Number       10453         Conductivity       pH       Signed       Date 2/01/05       Date 2/01/05		(unbonded) Monitor Well Constructor Certification:
Pump       Bailer       Air       Flowing Artesian       and information reported above are true to the best knowledge and belief.         Permeability       Yield       GPM       MWC Number       10453         Conductivity       pH       Signed       Date 2/01/05       Date 2/01/05	(5) WELL TEST:	I certify that the work I performed on the construction, alteration, or abandonment o this well is in compliance with Oregon well construction standards. Materials used
Permeability     Yield     GPM     MWC Number     10453       Conductivity     pH      Date 2/01/05	Pump Bailer Air Flowing Artesian	and information reported above are true to the best knowledge and belief.
Conductivity pH	Permeability Yield GPM	Signed Sandon One Date 2/01/05
Temperature of Water °F Depth artesian flow found ft	Temperature of Water °F Depth artesian flow found 9	

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

> MWC Number 10442 Date 2/01/05

Name of supervising Geologist/Engineer

Depth of strata to be analyzed. From \_

Yes

🖌 No

ft. to \_\_

\_\_\_ft.

Signed

Was water analysis done?

By whom?

Remarks

#### STATE OF OREGON MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 69 Instructions for completing this rep	0-240-095)	Start Card #: 1678	57(amended)	
(1) OWNER/PROJECT: Name Reynolds Metals	WELL NO. MW22-027	(6) LOCATION OF WELL B	y legal descripti	on
Address 5100 Sundial Rd		Township 1 N Range 3	E Sec	tion 14
City Troutdale State OF	<u>Zip 97080</u>	1. SW ¼ of SE ¼ of al	bove section.	
(2) TYPE OF WORK:		2. Either Street address of well location	on same as owner	
	Alteration (Repair/Recondition)	or Tax lot number of well location	100	
Conversion		3. ATTACH MAP WITH LOCATIC approximate scale and north arro	)N IDENTIFIED. Ma w.	p shall include
(3) DRILLING METHOD:		(7) STATIC WATER LEVEL	:	
Rotary Air	Rotary Mud Cable	Ft. below land surface	Date	
Hollow Stem Auger	Other	Artesian Pressure Ib/sq in.	Date	
(4) BORF HOLE CONSTRU		(9) WATED DEADING ZONI	79.	
Yes No		(6) WATER DEARING 2011	2.3.	
Special Standards Depth of	completed well 27 It.	From To Fet	Flow Rate	- SWI
Vault S	Water tight Cover		. I low Itale	0 WL
n 8	Surface flush yault			
TO	Looking can			
ft.   [9]	Locking cap			
	Casing			
	diameter 2 in.			
	a contential	(9) WELL LOG: Ground el	evation	
	Welded Threaded Glued	Material	From To	SWL
Sond Million		Reference original start 81473 for		
20°0	Liner	construction details.		
Seal O Seal	diameter in.			
	naterial			
TO	Welded Threaded Glued			
27 ft. 20 00 000				
	Well Seal			
Geo	Material Bent. Grout	Pull monument, overdrilled to well		
0000	Amount 140 gallons	depth & backfilled w/ bentonite	0 27	
2000	Grout Weight 9.7			
	Borchole diameter			
000	10 in			
	Bentonite Plug at least 3 ft thick			
-0.00				
Filter Don't	material			
pack Dan E	DDD interval(s)-			
ft Groce E	From To			
TO Z SISI I	50 S From To			
n.   0000 = =	Slot size in.			
<b>して、</b>	Para Filter Pack:			
1 200	Material	Date started 1/03/05	Completed 1/03/05	
	6706 SIZE III.	(unbonded) Monitor Well Constructor Certif	fication:	
(5) WELL TEST:		I certify that the work I performed on the	construction, alteration,	or abandonment of
		this well is in compliance with Oregon well	construction standards.	Materials used

Signed

Well I.D. #: L

Pump	Bailer		Air	Flowing Arte	esian
Permeability		Yield		GPM	
Conductivity		_ pH _			
Temperature of Wa	tcr	°F	Depth artes	ian flow found	ft.
Was water analysis	done?	Yes	✓ No		
By whom?					
Depth of strata to b	e analyzed.	From _	f	ì. to	ft.
Remarks					

Name of supervising Geologist/Engineer

performed on and went during are constructed and opportunity
performed during this time is in compliance with Oregon well construction standards.
This report is true to the best of my knowledge and belief.
1 vitte
7. MWC Number 10442
Signed My North Date 10/21/05

and information reported above are true to the best knowledge and belief. MWC Number 10402

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work

(bonded) Monitor Well Constructor Certification:

Date 10/21/05

STATE OF OREGON MONITORING WELL REPORT	Well I.D. #: L
(as required by ORS 537.765 & OAR 690-240-095)	Start Card #: 167858(amended)
(1) OWNER/PROJECT: WELL NO. MW25-035 Name Reynolds Metals	(6) LOCATION OF WELL By legal description
Address 5100 Sundial Rd	Township 1 N Range 3 E Section 14
City Troutdale State OR Zip 9708	$\frac{0}{1.5}$ 1. SW ¼ of SE ¼ of above section.
(2) TIPE OF WORK:	2. Either Street address of well location same as owner
New construction Alteration (Repair/Recordit	ion)
Conversion Deepening ZAban	donment         3.         ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
(3) DRILLING METHOD:	(7) STATIC WATER LEVEL:
🗌 Rotary Air 📄 Rotary Mud 🔲 Cable	Ft. below land surface Date
Hollow Stem Auger Dther	Artesian Pressure lb/sq in. Date
(4) BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES:
Special Standards $\square \square \square \square$ Depth of completed well <u>35.5</u> ft.	Depth at which water was first found
Vault (2)	From To Est. Flow Rate SWL
Water-tight Cov	er
$- \frac{n}{TO}$ Surface flush va	ult
ft of Locking cap	
Constant Casing Casing Casing Casing Constant Casing	in. (0) W/FLLLOC:
material	
Welded Thread	led Glued Material From To SWL
	Reference original start 80236 for
Seal 000 Liner	construction details.
nD nD nD diameter	in,
$0$ $\mathbf{n}$ $\mathbf{e}$ $0$	
TO < Welded Thread	Ind Glued
Ou a Well Scal:	Pull monument, overdrilled to well
A A A A A A A A A A A A A A A A A A A	Grout depth & backfilled w/ bentonite 0 35.5
o a o a Mount 19 ba	gs
Grout Weight	
Borehole diame	ter
	in
ODS Bentonite Plug at leas	st 3 ft. thick
D nd Screen	
Filter 20 2 material	
0 $0$ $0$ $1$ $1$ $0$ $0$ $0$ $1$ interval(s):	
ft.   [3, 3] H [3, 3] From	Го
It. Soo Stol Size	
Size	in. Date started 12/07/05 Completed 12/07/05
	(unbonded) Monitor Well Constructor Certification:
5) WELL TEST:	I certify that the work I performed on the construction, alteration, or abandonment this well is in compliance with Oregon well construction standards. Materials used
5) WELL TEST: Pump Bailer Air Flowing Artesian	I certify that the work I performed on the construction, alteration, or abandonment this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.
5) WELL TEST: Pump Bailer Air Flowing Artesian PermeabilityYieldGPM	I certify that the work I performed on the construction, alteration, or abandonment this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief. MWC Number 10402

🗸 No

ft. to \_

\_ft.

Yes

Was water analysis done?

Depth of strata to be analyzed. From \_

Name of supervising Geologist/Engincer \_

By whom? \_

Remarks\_

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

 $\square$	Not	
 15.	Kink	MWC Number 10442
 Signed / MM	porte	Date 10/21/05

STATE OF OREG	ON PEPODT			
(as required by ORS 537.765 & OAR	690-240-095)	Start Card # 1678	183	
Instructions for completing this r (1) OWNER/PROJECT:	eport are on the last page of this form. WELL NO. MW27-176	(6) LOCATION OF WELL B	y legal descript	ion
ress 5100 Sundial Rd		Well Location: County Multnomah		
Lity Troutdale State	OR Zip 97080	Township 1 N Range 3	E Se	ection 14
(2) TYPE OF WORK:		I. <u>NW ¼ of NW ¼ of al</u>	bove section.	
		2. Either Street address of well location	on same as owner	
New construction	Alteration (Repair/Recondition)	or Tax lot number of well location	100	
Conversion	Deepening Abandonment	3. ATTACH MAP WITH LOCATIC approximate scale and north arro	)N IDENTIFIED. M w.	ap shall include
3) DRILLING METHOD:		(7) STATIC WATER LEVEL		
🗹 Rotary Air	Rotary Mud Cable	Ft. below land surface	Date	
Hollow Stem Auger	Other	Artesian Pressure lb/sq in.	Date	<u></u>
4) BORE HOLE CONSTR	RUCTION:	(8) WATER BEARING ZONE	S:	
pecial Standards	of completed well <u>176</u> ft.	Depth at which water was first found		
Vault	- Did	From To Est.	Flow Rate	SWL
er l	Water-tight Cover			
	Of Surface flush vault			
	Locking cap			
			<u>.</u>	
	diameterin.			
	material	(9) WELLLOG: Ground eld	evation	
800	Welded Threaded Glued	Material	<sup>5</sup> From T	o SWL
CONT.		Reference MULT 52860 for original		
	Liner	construction.		
	diameter in.		470	
ft.   et o et al	material	6" Overdrill of 2" well	0 1/6	
TO Y 000	Welded Threaded Glued	Backfill with Bentonite Grout	12' 1/6'	
		(270 gallons)	0 401	
Cat a	Well Seal:	Bentonite Chips (11 sacks)	0 12	
G CO	Material	Menument Demoved		
	Amount	Wohument Removed		
	Grout Weight		<u> </u>	
	Borchole diameter			
50 2 V	in.	······································		
So S	Bentonite Plug at least 3 ft. thick			
	Screen			, ,
Filter	a material			/
pack 0000 E	or Dor interval(s):			
ft. ] 0° 0 =	00 From To			
TOY Sign E	From To			
n   600	Slot size in.			
	Filter Pack			
0000	Size in.	Date started 01/09/05	Completed 01/10/05	
WELL TEST:		(unbonded) Monitor Well Constructor Certific I certify that the work I perform I on the co	cation: nstruction, alteration, of	or abandonment
Pump Bailer	Air Flowing Artesian	inis well is in compliance with Oregon well co and information-temported above are true to the	nstruction standards. .heat-knowledge and h	materials used
Permeability Yi	eld GPM		MWC Num	ber 10453
Conductivity pH	ł	Signed - and Sur	Date 2/01/0	5
Temperature of Water °F	Dcpth artesian flow found ft.		-	

✓ No

ft. to

A.

Ycs

Was water analysis done?

Depth of strata to be analyzed. From

Name of supervising Geologist/Engineer

By whom?

Remarks

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

bsterm Signed

MWC Number 10442 Date 2/01/05

#### STATE OF OREGON MONITORING WELL REPORT

Instructions for completing this rep	port are on the last page of this form.
(1) OWNER/PROJECT:	WELL NO. MW31-095
Name Reynolds Metals	
Address 5100 Sundial Rd	
City Troutdale State OI	R Zip 97080
(2) TYPE OF WORK:	
New construction	Alteration (Repair/Recondition)
Conversion	Deepening Abandonment
(3) DRILLING METHOD:	
🔲 Rotary Air	Rotary Mud Cable
Hollow Stem Auger	Other grout in place
(4) BORE HOLE CONSTRU	UCTION:
Special Standards 7 Depth o	f completed well <b>96</b> ft
	recompleted went <u>sou</u> nd
Vault P	
	water-tight Cover
TO	Surface Hush Vault
ft.	Locking cap
	Casing
	diameter 2 in
070 °	Waldad Thrandad Gluad
2000	
Scal	Liner
	$\mathcal{D} \mathcal{D} \mathcal{D} \mathcal{D}$
	material
Co C	A well Seal:
0000	Annual 30 Gals
0 0 0 0 0	
50 5 C	Grout weight
	Borchole diameter
	Bentonite Plug at least 3 ft. thick
	BD SCIECCI
pack	a material
0,00	interval(s):
	From To
	Slot size in.
	Filter Pack:
or or F	Material
	Size in.

#### (5) WELL TEST:

Pump	Bailer	Air	Flowing Arte	sian
Permeability	Yi	eld	GPM	
Conductivity	pI	ΗΗ		
Temperature of Water	•°F	Depth arte	sian flow found	f
Was water analysis de	one? Yes	🗸 No		
By whom?				
Depth of strata to be a	nalyzed. From	n	ft. to	ft.
Remarks				

Name of supervising Geologist/Engineer

Well I.D. #: L\_

Start Card #: 167943 (amended)

. .

Tov	wnship 1	N	Range 3	E	Section 14
1.	SW	4 of SE	¼ of above	section.	
2.	Either Stree	et address of	well location s	ame as ow	ner
	or Tax lot number of well location 100				
			LOCUTION	<b>ENTIFIC</b>	D. Man shall includ
3.	ATTACH N approximat	AAP WITH	north arrow.	JEN HIFTE	D. Map shan menuu
3. (7)	ATTACH N approximat	AAP WITH te scale and WATER	LEVEL:		
3. (7)	ATTACH M approximat STATIC V Ft. be	MAP WITH te scale and WATER	LEVEL:		D. Map snah meluu

#### (8) WATER BEARING ZONES:

Depth at which water was first found

From	То	Est. Flow Rate	SWL

(9) WELL LOG:

Ground elevation

Material	From	То	SWL
Reference original start 89222 for			
construction details.			
Pull monument and backfilled w/			
Bentonite Grout	0	96	
•	<u> </u>		
			2
		12/00/2004	
Date started 12/09/2004	Completed	12/03/2004	

(unbonded) Monitor Well Constructor Certification:

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

MWC Number 10402 Date 10/24/05 Signed

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

MWC Number 10442 Date 10/24/05 lu Signed

STATE OF OREGON	
MONITORING WELL REPORT	
as required by ORS 537.765 & OAR 690-240-095)	

Well I.D. #: I	
Start Card #:	167944 (amended)

That uctions for comproving	on the last page of this form.				
I) OWNER/PROJECT: V	VELL NO. MW31-095	(6) LOCATION OF WELL By	legal desci	ription	
lame Reynolds Metals		Well Location: County Multnomah			
ddress 5100 Sundial Rd		Township 1 N Range 3	E	Section 14	<u>+</u>
ity Troutdale State OR	Zip 97080	1. SW ½ of SE ½ of abo	ve section.		
2) TYPE OF WORK:		2. Either Street address of well location	same as ow	ner	
	Alteration (Repair/Recondition)	or Tax lot number of well location 1	00		
Conversion	Deepening Abandonment	<ol> <li>ATTACH MAP WITH LOCATIO! approximate scale and north arrow</li> </ol>	N IDENTIFIEI '.	D. Map shall	i include
3) DRILLING METHOD:		(7) STATIC WATER LEVEL:			
	Reserve Mund	Ft. below land surface	Date		
Rotary Air		Artesian Pressure Ib/so in.	Date		
Hollow Stem Auger	Other				
4) BORE HOLE CONSTRUCT	ION:	(8) WATER BEARING ZONE	S:		
Special Standards 🗹 🗋 Depth of comp	leted well 95 ft.	Depth at which water was first found	71 D.44		SW/I
	- M	From To Est.	Flow Rate		SWL
	Water-tight Cover		,		
fl.) <b>(3</b>	Surface flush vault				
TO	Locking cap				
ft.   O					
	Casing				
	diameter 2 in				
	inaterial	(9) WELLLOG: Ground el	evation		
	Welded Threaded Glued	Material	From	То	SWL
E o o o o o o o o o o o o o o o o o o o		Reference Mult 52919 for			
a 0 %	201	construction details.			1
	Liner				1
	diameter in		1	}	
					1
	naterial				
TO Y DOD	Welded Threaded Glued				
TO - 0000 95 ft. 0ª 3	Inaterial       Image: Solution of the second s				
TO → 95 ft. 20 00000000000000000000000000000000000	Welded Threaded Glued				
TO → 95_ft. 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Inaterial	Pull monument, overdrill backfilled			
$\begin{array}{c} TO \\ 95 \\ ft. \end{array} \begin{array}{c} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 $	Welded     Threaded     Glued       Welded     Threaded     Glued       Welded     Threaded     Glued       Well Seal:     Material     Bent. Grout       Amount     140 Gals	Pull monument, overdrill backfilled w/ Bentonite Grout and	0	95	
TO - 95 ft. 95 ft. 95 gt 9 gt	Welded Threaded Glued         Welded Threaded Glued         Welded Threaded Glued         Well Seal:         Material         Bent. Grout         Amount         140 Gals         Cont         Grout Weight         Sole	Pull monument, overdrill backfilled w/ Bentonite Grout and topped w/ 3.5 sacks bent chips	0	95	
TO → 95 ft. 95 ft. 95 gt 9 gt	Welded Threaded Glued         Welded Threaded Glued         Welded Threaded Glued         Well Seal:         Material         Bent. Grout         Grout Weight         Grout Weight         Brankels diamater	Pull monument, overdrill backfilled w/ Bentonite Grout and topped w/ 3.5 sacks bent chips	0	95	
TO → 95 ft. 00000000000000000000000000000000000	a       inaterial         b       Welded Threaded Glued         b       Image: Constraint of the second secon	Pull monument, overdrill backfilled w/ Bentonite Grout and topped w/ 3.5 sacks bent chips	0	95	
ТО - 95 ft. 95 ft. 95 ft.	Inaterial	Pull monument, overdrill backfilled w/ Bentonite Grout and topped w/ 3.5 sacks bent chips	0	95	
ТО - 95 ft. 95 ft.	Inaterial	Pull monument, overdrill backfilled w/ Bentonite Grout and topped w/ 3.5 sacks bent chips	0	95	
TO     95     ft       95     ft       95     ft       95     ft	Inaterial         Welded Threaded Glued         Welded Threaded Glued         Well Seal:         Material         Bent. Grout         Grout Weight         Borchole diameter         Image: Serie for the seciency         Image: Serie for the secience	Pull monument, overdrill backfilled w/ Bentonite Grout and topped w/ 3.5 sacks bent chips	0	95	
TO     000000000000000000000000000000000000	Inaterial         Welded Threaded Glued         Welded Threaded Glued         Well Seal:         Material         Bent. Grout         Grout Weight         Grout Weight         Borchole diameter         Image: Series         Bentonite Plug at least 3 fl. (hic)         Screen         Material	Pull monument, overdrill backfilled w/ Bentonite Grout and topped w/ 3.5 sacks bent chips	0	95	
TO     D </td <td>Inaterial         Welded Threaded Glued         Weldseal:         Material         Bent. Grout         Image: Grout Weight         Grout Weight         Borehole diameter         Image: Grout Weight         Borehole diameter         Image: Grout Weight         Borehole diameter         Image: Grout Weight         Image: Grout</td> <td>Pull monument, overdrill backfilled w/ Bentonite Grout and topped w/ 3.5 sacks bent chips</td> <td>0</td> <td>95</td> <td></td>	Inaterial         Welded Threaded Glued         Weldseal:         Material         Bent. Grout         Image: Grout Weight         Grout Weight         Borehole diameter         Image: Grout Weight         Borehole diameter         Image: Grout Weight         Borehole diameter         Image: Grout Weight         Image: Grout	Pull monument, overdrill backfilled w/ Bentonite Grout and topped w/ 3.5 sacks bent chips	0	95	
TO     D<	Inaterial         Welded Threaded Glued         Well Seal:         Material         Bent. Grout         Image: Seal Structure	Pull monument, overdrill backfilled w/ Bentonite Grout and topped w/ 3.5 sacks bent chips	0	95	
TO     D<	Inaterial         Welded Threaded Glued         Welded Threaded Glued         Well Seal:         Material         Bent. Grout         Image: Seal:         Material         Bent. Grout         Image: Seal:         Material         Bentomite Plug at least 3 fl. thick         Series         Material         Image: Series         I	Pull monument, overdrill backfilled w/ Bentonite Grout and topped w/ 3.5 sacks bent chips	0	95	
TO     35     ft.       95     ft.       100     ft.	inaterial         Welded Threaded Glued         Welded Threaded Glued         Well Seal:         Material         Bent. Grout         Material         Borehole diameter         DD         DD         Borehole diameter         DD         DD         Bentonite Plug at least 3 fl. thick         Sereen         material         Sereen         Seren         Seren<	Pull monument, overdrill backfilled w/ Bentonite Grout and topped w/ 3.5 sacks bent chips	0	95	
TO     95     ft.       100     ft.	inaterial         Welded Threaded Glued         Welded Threaded Glued         Well Seal:         Material         Bent. Grout         Amount         140 Gals         Grout Weight         9.7         Borehole diameter         0.9         Bentonite Plug at least 3 fl. thick         Sereen         material         interval(s):         From         To         Slot size         Slot size         Miterval(s):         From         To         Slot size         Material         To         Slot size         Material         Stot size         Material	Pull monument, overdrill backfilled w/ Bentonite Grout and topped w/ 3.5 sacks bent chips	0	95	
TO     95     ft.       100     ft.       110     ft.	inaterial         Welded Threaded Glued         Welded Threaded Glued         Well Seal:         Material         Bent. Grout         Amount         140 Gals         Grout Weight         9.7         Borehole diameter         0.9         Bentonite Plug at least 3 fl. thick         Sereen         material         interval(s):         From         To         Slot size         Material         Grout         Noterval(s):         From         To         Slot size         Material         Grout         Size         Size         Stot size         Material         Size	Pull monument, overdrill backfilled w/ Bentonite Grout and topped w/ 3.5 sacks bent chips	0 0 Completed 7	95	

#### (5) WELL TEST:

Քստթ	Bailer		Air	Flowing	Artesian	
Permeability		_ Yield	l	G	PM	
Conductivity		pH				
Temperature of Water		۴F	Depth a	rtesian flow fo	ound	វា
Was water analysis do	nc?	Yes	🗸 No			
By whom?						
Depth of strata to be a	nalyzed.	From_		fl. 10	<u>f</u> î.	
Pamarka						

Date 11/21/05 Signe

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

MWC Number 10402

MWC Number 10442 Signe Date 11/21/05

) OWNER/PROJECT; ne Reynolds Metals	WELL NO. MW37-012	(O LOCATION OF WELL			
tress 5100 Sundial Boad		(0) LUCATION OF WELL	By legal desci	ription	
		Well Location: County Multnomah			
v Troutdale State OF	7:- 07080	Township 1 N Range	3 E	Section	14
TYPE OF WORK:	Σιβ 97080	1. SW ¼ of SE ¼ of	fabove section.	-	
		2. Either Street address of well loca	ation		
New construction	Alteration (Repair/Recondition)	or Tax lot number of well location	n 100		
Conversion	Deepening Abandonment	3. ATTACH MAP WITH LOCAT	ION IDENTIFIED	). Man sha	ll includ
		approximate scale and north as	row.		
<b>DRILLING METHOD:</b>		(7) STATIC WATER LEVE	L:		
Rotary Air	Rotary Mud Cable	Ft. below land surface	Date		
Hollow Stem Auger	Other	Artesian Pressure lb/sq in.	Date		
BORE HOLE CONSTRU	UCTION:	(8) WATER BEARING ZON	VES:		
cial Standards 🔲 🗹 Depth of	f completed well 12.5 ft.	Depth at which water was first found			
Vault	04	From To I	ist. Flow Rate		SWL
	Water-tight Cover				
	Surface flush vault				
ft. 6 F	Locking cap		<u> </u>		
	Casing				
	diameter 2 in.	(9) WELLLOG: Ground	elevation		
	CARE Wolded Threaded Cheed	Material	Erom	То	SW
Box all		Pulled menument and overdrilled	110/11	10	011
2000		well to depth. Backfilled with			
Seal 000		Bentonite			
100 DO					
	er o er o				
	Welded Inreaded Glued				
		Old Start Card: 93714			
Gi G	Well Seal:				
	Material Bent.				
0 0 0 0	Amount 4.5 Bags				
So 2	Grout Weight				
200	Borchole diameter				
	60 BG 10 in.				
000 C	Bentonite Plug at least 3 ft. thick				
	Screen				1
Filter So a	material				
Pack 0000	0 20 interval(s):				
f.   [36 3] =	G G From To				
TOY BUD I	From To				
ft.	Slot size in.				
	VA Filter Pack:				
Soco S	Size in.	Date started 12/21/2004	Completed 12/2	21/2004	
WELL TEST.		(unbonded) Monitor Well Constructor Cer	tification:	tion at at-	ndonm
WELL ILOI:		this well is in compliance with Oregon we	l construction, altera	ards. Mate	rials use
Pump Bailer	Air Flowing Artesian	and information reported above are true to	the best knowledge	and belief.	
Permeability Yiel	dGPM	2 De-	MWC	Number	QY0.
Conductivity pH		Signed	Date	41810	<u>ى</u>
Temperature of Water °F	Depth artesian flow found ft.				
Was water analysis done? Yes	No	(bonded) Monitor Well Constructor Certifi	cation:	ndonment	work
		accept responsionity for the construction	on, ancration, or abi	anuounicni	WOLK

Name of supervising Geologist/Engineer	_
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Signed \_\_\_\_\_\_\_ MWC Number 2001 Date \_\_\_\_\_\_\_ Date \_\_\_\_\_\_ JIY/25

#### STATE OF OREGON MONITORING WELL REPORT

(as required by C Instructions for	ORS 537.765 & OAI	R 690-240-095)	the last nage of this form
(1) OWNER Name Reynolds	R/PROJECT: Metals	WELI	NO. <u>MW37-030</u>
Address 5100 Su	ndial Rd		
City Troutdale	State	OR	Zip 97080
(2) <b>TYPE O</b>	F WORK:		
Ne	ew construction nversion	Altera	tion (Repair/Recondition) ning <b>[</b> Abandonment
(3) DRILLI	NG METHOD	):	
☐ Ro ☑ Ho	tary Air Ilow Stem Auger	Rotary	Mud Cable
(4) BORE H	OLE CONST	RUCTION	
Special Standards	Yes No Dept	h of completed w	rell 30.5 ft.
Vault TO fi. Scal O fi. TO 30.5 fi.		Qu Qu Qu So	<ul> <li>Water-tight Cover</li> <li>Surface flush vault</li> <li>Locking cap</li> <li>Casing <ul> <li>diameter 2</li> <li>in.</li> <li>material</li> <li>Welded Threaded Glued</li> <li>Liner</li> <li>diameter in.</li> <li>material</li> <li>Welded Threaded Glued</li> <li>Liner</li> <li>diameter in.</li> </ul> </li> <li>Welded Threaded Glued</li> <li>Welded Threaded Glued</li> <li>Welded Threaded Glued</li> <li>Welded Threaded Glued</li> <li>Weldes Threaded Glued</li> <li>Weldes Threaded Glued</li> <li>Giameter in.</li> <li>material</li> <li>Welded Threaded Glued</li> <li>Glued Threaded Glued</li> <li>Bentonic Seal:</li> <li>Material Bent. Grout</li> <li>Amount 14 bags</li> <li>Grout Weight</li> <li>Borehole diameter</li> <li> in.</li> <li>Bentonic Plug at least 3 ft, thick</li> </ul>
Filter pack ft. ft.	20 02 02 02 02 00 00 00 00 00 00 00 00 0	20000000000000000000000000000000000000	Sercen

## Well I.D. #: L

Start Card #: 167859(amended)

(6) LOCATION OF WEI	L By legal description
Well Location: County Multnoma	h
Township <u>1</u> N Ra	nge <u>3</u> E Section <u>14</u>
1. <u>SW</u> ¼ of <u>SE</u>	4 of above section.
2. Either Street address of well	location same as owner
or Tax lot number of well loc	ation 100
3. ATTACH MAP WITH LOC approximate scale and north	CATION IDENTIFIED. Map shall include h arrow.
(7) STATIC WATER LEV	VEL:
Ft. below land surface	Date
Artesian Pressure lb/sq in.	Date

#### (8) WATER BEARING ZONES:

Depth at which water was first found

From	To	Est. Flow Rate	SWL

#### (9) WELLLOG: Ground elevation

Material	From	То	SWL
Reference original start 93603 for			
construction details.			
Pull monument, overdrilled to well			
depth & backfilled w/ bentonite	0	30.5	
•			
Date started 12/21/05	Completed 1	2/21/05	

(unbonded) Monitor Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used

and information reported above are true to the best knowledge and belief. MWC Number 10402 Date 10/21/05 Signed

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

#### (5) WELL TEST:

000

Ритр В	Bailer	Air Flow	ing Artesian
Permeability	Yiel	d	GPM
Conductivity	pH	ANT	
Temperature of Water		Depth artesian flow	w found ft
Was water analysis done	? Yes	✓ No	
By whom?			
Depth of strata to be ana	lyzed. From	ft. to	ft.
Remarks			

Size

in.

Sec.

Name of supervising Geologist/Engineer

Signed

MWC Number 10442 Date 10/21/05

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## STATE OF OREGON MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095)

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l								)			)	i					-		[	[	I	I		[	[	[																																																				

Start Card #: 167837(amended)

Instructions for completing this report are on the last page of this form. (1) OWNER/PROJECT: WELLING MW38.007	
Name Reynolds Metais	(6) LOCATION OF WELL By legal description
Address 5100 Sundial Rd	Well Location: County Multnomah
City Troutdale State OR Zip 97080	$\frac{1}{10000000000000000000000000000000000$
(2) TYPE OF WORK:	<ol> <li>Sw 24 of SE 24 of above section.</li> <li>Either Street address of well location same as owner</li> </ol>
New construction Alteration (Repair/Recondition)	or Tax lot number of well location 100
Conversion Deepening Abandonment	3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
(3) DRILLING METHOD:	(7) STATIC WATER LEVEL:
Rotary Air Rotary Mud Cable	Ft. below land surface Date
Hollow Stem Auger Other grout in place	Artesian Pressure lb/sq in. Date
(4) BORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES:
Special Standards $\mathbf{V}^{\text{Yes}}$ Depth of completed well $7_{\text{Yes}}$ ft.	Depth at which water was first found
Vault P	From To Est. Flow Rate SWL
Water-tight Cover	
TO DI Surrace riush vauit	
Casing	
3 $3$ $3$ $3$ $3$ $3$ $3$ $3$ $3$ $3$	(9) WELL LOG: Ground elevation
Welded Threaded Glued	Material From To SWL
	Reference original start 93752 for
Liner	construction details.
5 cal $3$ $3$ $3$ $3$ $3$ $3$ $3$ $3$ $3$ $3$	
0 ii. wow material	
$TO \prec$ Welded Threaded Glued	
Ge a Well Seal:	Pull monument and backfilled w/
David Anterial Bent. Grout	Bentonite Grout 0 7
Solution of the second	
Sopol	
Do Charles and the set of the set	· · · · · · · · · · · · · · · · · · ·
Filter D D D Filter material	
pack $\nabla \rho_0 \nabla$ $\Xi$ $\nabla \rho_0 \nabla$ interval(s):	
ft. 0 0 0 0 FromTo	
$TO \prec e_{\alpha} = E e_{\alpha} = From_{TO} = TO$	
$- ft. \qquad Stot size u.$	
Dragg F Dragg Material	
$\Box \Box $	Date started 12/22/2004 Completed 12/22/2004
(5) WELL TEST:	(unbonded) Monitor Well Constructor Certification: I certify that the work I performed on the construction, alteration, or abandonment of
	this well is in compliance with Oregon well construction standards. Materials used
Pump Bailer Air Flowing Artesian	and information reported above are true to the best knowledge and belief. MWC Number 10402
Conductivity nH	Signed Date 10/21/05
Temperature of Water °F Depth artesian flow found ft	
Was water analysis done? Yes $\checkmark$ No	(bonded) Monitor Well Constructor Certification:
By whom?	I accept responsibility for the construction, alteration, or abandonment work
Depth of strata to be analyzed. From fl. to ft.	performed during this time is in compliance with Oregon well construction standards.
Remarks	This report is trang to the best of my knowledge and belief.
	MWC Number 10442
Name of supervising Geologist/Engincer	Signed My yes Date 10/21/05

#### STATE OF OREGON MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095)

Well I.D. #:	L
Start Card #:	167838(amended)

Instructions for completing this report are on the last page of this form.	
(1) OWNER/PROJECT: WELL NO. MW38-035	(6) LOCATION OF WELL By legal description
	Well Location: County Multnomah
Address 5100 Sundial Rd	Township 1 N Range 3 E Section 14
$\frac{\text{Chy Holdare}}{2 \text{ (2) TVPF OF WORK}}$	1. SW 1/4 of SE 1/4 of above section.
(2) THE OF WORK.	2. Either Street address of well location same as owner
New construction Alteration (Repair/Recondition)	
	or lax lot number of well location 100
	<ol> <li>AFFACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.</li> </ol>
(3) DRILLING METHOD:	(7) STATIC WATER LEVEL:
	Ft below land surface. Date
Hollow Stem Auger	Artesian Bressure III (valian Date
Thorow Stein Auger	Ariesian Pressure 10/sq in. Date
(4) BORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES:
Special Standards $\boxed{2}$ $\boxed{10}$ Depth of completed well <u>36</u> ft.	Depth at which water was first found
Vault 2	From To Est. Flow Rate SWL
Water-tight Cover	
-11 Surface flush vault	
ft D Locking cap	
Casing	
$diameter \frac{2}{diameter}$ in.	(9) WELLLOG: Ground elevation
Do a material	
Welded Threaded Glued	Material From To SWL
	Reference original start 93798 for
Saal	construction details.
build a bar diameter in.	
0 ft. $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$ material	
$TO \prec OOO$ Welded Threaded Glued	
Car a Well Seal:	Pull monument and backfilled w/
Con Material Bent. Grout	Bentonite Grout 0 36
Ora or Amount 35 Gals	
$\mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} $	
ar o o	
in.	·
$\nabla D \nabla$ Bentonite Plug at least 3 ft. thick	
Screen	
Filter	· · · · · · · · · · · · · · · · · · ·
$\rho^{\text{mark}}$ $\rho^{\text{mark}}$ $\rho^{\text{mark}}$ $\rho^{\text{mark}}$ interval(s):	
ft. 30 G H G G From To	
$TO \prec [au ] = H [au ] From To$	
$- ft. \qquad Stot size in.$	
Material	
Soc Sizein.	Date started 12/22/2004 Completed 12/22/2004
	(unbonded) Monitor Well Constructor Certification:
(5) WELL TEST:	I certify that the work I performed in the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used
Pump Bailer Air Flowing Artesian	and information reported above are true to the best knowledge and belief.
PermeabilityYieldGPM	MWC Number 10402
Conductivity pH	Signed Date 10/21/05

2

(bonded) Monitor Well Constructor Certification:

Permeability	Yield		GPM		
Conductivity	pH		-		
Temperature of Water	_°F	Depth artesian flow	found		ft.
Was water analysis done?	Ycs	✓ No			
By whom?					_
Depth of strata to be analyzed.	From _	fl. to		ft.	
Remarks					

Name of supervising Geologist/Engineer

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 well construction standards. This report is true to the best of my knowledge and belief. MWC Number 10442 Date 10/21/05 Signed 4

STATE OF OPECON	
MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this report are on the last page of	Well I.D. #: L           Start Card #:         167844(amended)
(1) OWNER/PROJECT: WELL NO. MW39-095 Name Reynolds Metals	(6) LOCATION OF WELL By legal description     Well Location: County Multnomah
City Troutdale     State OR     Zip S       (2) TYPE OF WORK:	Township       1       N       Range       3       E       Section       14         1.       SW       ½ of SE       ½ of above section.         2.       Either Street address of well location       same as owner
New construction     Alteration (Repair/Reco       Conversion     Deepening	or Tax lot number of well location 100         .bandonment       3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall includ approximate scale and north arrow.
(3) DRILLING METHOD:	(7) STATIC WATER LEVEL:

Other grout in place

ſt.

Water-tight Cover

Surface flush vault

Locking cap

diameter 2

material

material

Welded Threaded Glued

diameter \_\_\_\_\_ in.

Welded Threaded Glued

Material Bent. Grout

Amount 30 Gals

Grout Weight 9.7

Borchole diameter

\_\_\_\_\_ in,

material

interval(s):

Slot size

Filter Pack: Material

Bentonite Plug at least 3 ft. thick

From \_\_\_\_\_ To \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_

Size in.

in.

\_\_\_ in.

Casing

Screen

Well Seal:

Liner

Depth of completed well 95

2

0

3

0 %

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#### (8) WATER BEARING ZONES:

Artesian Pressure \_\_\_\_\_ lb/sq in.

Depth at which water was first found \_

From	To	Est. Flow Rate	SWL

Date

#### (9) WELLLOG:

Ground elevation

Material	From	To	SWL
Reference original start 95695 for			
construction details.			
Pull monument and backfilled w/			
Bentonite Grout	0	95	
•			
	_		:
Date started 12/22/2004	Completed 1	2/22/2004	

(5) WELL TEST:

Hollow Stem Auger

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001

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Name of supervising Geologist/Engineer

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Special Standards

Vault

ΤO

Scal

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ΤO·

95 ft.

Filter

pack

ΤO

ft.

ft.

0

fì.

ft.

(4) BORE HOLE CONSTRUCTION:

Permeability	Yield	GPM
Conductivity Temperature of Water	PH F Depth artesia	n flow found ft.
Was water analysis done? Ye By whom?	es 🗸 No	
Depth of strata to be analyzed. Fr Remarks	rom ft.	to ft.

(unbonded) Monitor Well Constructor Certification:

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

MWC Number 10402 Date 10/24/05 Signed

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

MWC Number 10442 Date 10/24/05 Signed

Instructions for completing this rep	port are on the last page of	this form.	5	tart Card #:	1821		
1) OWNER/PROJECT:	WELL NO. MW41-020	) (6) I	OCATION	OF WELL B	y legal desc	ription	
ame Reynolds Metals		Wel	Location: Cour	ty Multnomah	, 8	•	
ty Troutdale State OR	7 in f	7080 2	nship 1	N Range 3	E	Section	14
2) TYPE OF WORK:		1.	<u>SW</u> ¼ o	f_SE¼ of at	ove section.		
,		2.	Either Street ad	dress of well locatio	n		
New construction	Alteration (Repair/Reco	ndition)	or Tax lot num	er of well location	100		
Conversion	🔲 Deepening 🛛 🗹 A	bandonment 3.	АТТАСН МА	WITH LOCATIO	N IDENTIFIE	D. Map sha	ll includ
A DELLING METHOD.			approximate so	ale and north arro	w.		
) DRILLING METHOD:				IER LEVEL:	<b>.</b> .		
☐ Rotary Air ☑ Hollow Stem Auger	Other	Artesia	Ft. below land surface Date Artesian Pressure lb/sq in. Date				
BORE HOLE CONSTRU		(8) V	ATED BE	PINC ZONE	·····		
Yes No Yes No		(8) V	ALEA DEA	vas first found	<b>.</b>		
		I. Бора					6110
Vault	04	Fro	m 10	Est.	Flow Rate		SWL
	water-tight	Lover					
TO	Locking cor						
ft		,					
Coo college	Casing						
	diameter	2 in. (9) V	ELL LOG	Ground eld	evation	10 m	
005	Welded Th	readed Glued	Mate	rial	From	То	SWL
Sond	Davo D		I monument ar	d overdrilled			
Co C	Liner	well to	depth. Back	illed with			
Seal 02.5	diameter_	in. Bento	nite				
	material				<u> </u>		
TO Y SO	Welded Th	readed Glued					
$\frac{20.3}{10}$ ft. $\begin{bmatrix} \mathbf{G}_{\mathbf{G}}^{\mathbf{T}} & \mathbf{G}_{\mathbf{G}}^{\mathbf{T}} \end{bmatrix}$			art Card: 1001	65			
Og eg	Well Seal:		art oard. 100				
	Material B	ent.					
0.000	Joaog Amount 19	Bags					
So Call	Grout Weig	ht					
	Borcholc dia	ameter					
		in.					
	Bentonite Plug at	least 3 ft. thick					
Filter Do BD	BD SD Screen						· · · · ·
pack So C	Do d material						
	From	То					
	000						
	From						
	Slot sizc	in.					
f. → 0000 TO → 0000 f. → 00000 000000 000000 000000 000000 000000	Image: Section of the section of t	in.					L
f. → 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Grading     From       Grading     Slot size       Grading     Filter Pack:       Grading     Material       Grading     Size	in. Date st	arted 12/08/200	4	Completed 12/	08/2004	
f. f. 	GB     From       GB     Slot size       GO     Filter Pack:       GO     Material       Size     Size	in. Date st	arted <b>12/08/200</b> ed) Monitor Wel	4 I Constructor Certifi	Completed 12/	08/2004	
R	Git is in the second	in. Date st	arted 12/08/200 ed) Monitor Wel y that the work I is in compliance	4 I Constructor Certifi performed on the co	Completed 12/ cation: onstruction, alter	08/2004 ation, or aba	indonmen
n.     0,000       Group     0,000       Group <td< td=""><td>Air Flowing Artesi</td><td>in. Date st in. Unbond I certi this well an and info</td><td>arted <u>12/08/200</u> ed) Monitor Wel y that the work I is in compliance rmation reported</td><td>4 I Constructor Certifi performed on the co with Oregon well c above are true to the</td><td>Completed 12/ cation: onstruction, alter onstruction state best knowledge</td><td>08/2004 ation, or aba dards. Mate e and belief.</td><td>indonmer rials used</td></td<>	Air Flowing Artesi	in. Date st in. Unbond I certi this well an and info	arted <u>12/08/200</u> ed) Monitor Wel y that the work I is in compliance rmation reported	4 I Constructor Certifi performed on the co with Oregon well c above are true to the	Completed 12/ cation: onstruction, alter onstruction state best knowledge	08/2004 ation, or aba dards. Mate e and belief.	indonmer rials used
ft.    Gu_GU_GU_GU_GU_GU_GU_GU_GU_GU_GU_GU_GU_GU_	Air     Flowing Artesi	in. Date st in. Unbond I certi this well an and info	arted <u>12/08/200</u> ed) Monitor Wel y that the work I is in compliance rmation reported	4 I Constructor Certifi performed on the co with Oregon well c above are true to the	Completed 12/ cation: onstruction, alter onstruction stan- best knowledge MWC	ation, or aba dards. Mate e and belief. C Number	indonmer rials used
ft.    Gtered of the second	Air Flowing Artesi	in. Date st in. Date st in. Unbond I certii this well an and info Signed	arted <u>12/08/200</u> ed) Monitor Wel y that the work I is in compliance rmation reported	4 I Constructor Certifi performed on the co with Oregon well c above are true to the	Completed 12/ cation: onstruction, alter onstruction stand best knowledge MWC Date	ation, or aba dards. Mate e and belief. C Number	indonmer rials used
ft.       Group         TO       Group        ft.       Group         Group       Group         Grou	Air Flowing Artesi Depth artesian flow found	in. Date st in. Date st in. Unbond I certin this well an and info Signed (honded	arted <u>12/08/200</u> ed) Monitor Wel y that the work I is in compliance rmation reported	4 I Constructor Certifi performed on the co with Oregon well c above are true to the constructor Certificat	Completed 12/ cation: onstruction, alter onstruction stand best knowledge MWC Date	ation, or aba dards. Mate e and belief. C Number	indonmer rials used
ft.       Green Gree	Air       Flowing Artesi         Depth artesian flow found	in. Date st in. Uunbond I certi this well an and info Signed (bonded I acco	arted <u>12/08/200</u> ed) Monitor Wel y that the work I is in compliance rmation reported Monitor Well C ept responsibility	4 I Constructor Certifi performed on the co with Oregon well c above are true to the Constructor Certificat for the construction	Completed 12/ cation: onstruction, alter onstruction stan- best knowledge MWC Date ion: , alteration, or alter	ation, or aba dards. Mate e and belief. C Number C J / S pandonment	undonme rials use

Signed

Name of supervising Geologist/Engineer \_\_\_\_

Remarks \_\_\_\_

MWC Number <u>OO</u> Date <u>4/14/05</u> n fino

### STATE OF OREGON MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 6 Instructions for completing this rel	90-240-095) port are on the last page of this form.	Start Card #:
(1) OWNER/PROJECT:	WELL NO. <b>MW41-033</b>	(6) LOCATION OF WE
Name Reynolds Metals		Well Location: County Multnoma
Address 5100 Sundial Rd		Township 1 N R
City Troutdale State Of	R Zip 97080	I. SW ¼ of SE
(2) TYPE OF WORK:		2. Either Street address of well
New construction	Alteration (Repair/Recondition)	
		or Tax lot number of well lo
Conversion	Deepening V Abandonment	3. ATTACH MAP WITH LO
(3) DRILLING METHOD:		(7) STATIC WATER LE
		(7) STATIC WATER LE
Rotary Air	Rotary Mud Cable	Ft. below land surface
Hollow Stem Auger	Other	Artesian Pressure lb/sq in.
(4) BORE HOLE CONSTR	UCTION:	(8) WATER BEARING Z
Yes No	6 I.I.I.I.I. <b>I</b> .	Depth at which water was first four
Special Standards Depth o	I completed well 35 It.	
Vault B.	04	From To
	Water-tight Cover	
$-\tau_0$	Surface flush vault	
ft 6 F	Locking cap	
	Casing	Lauran and the second
	diameter <u>2</u> in	(9) WELL LOG: Gro
So 2	material	- Matarial
200	Welded Threaded Glued	Material
2000		construction details
Scal Scal	Liner	construction details.
	nD_nD diameter in	I.
	a inaterial	-
	Welded Threaded Glued	
St a	Well Seal:	Pull monument, overdrilled to w
8 6°9 6	Material Bent. Grout	depth & backfilled w/ bentonite
0 0 0 0	Amount 19 bags	-
50 S	Grout Weight	-
E o o o o o o o o o o o o o o o o o o o	Borcholc diameter	
	1000 m.	-
	Bentonite Plug at least 3 ft, thick	· · · · · · · · · · · · · · · · · · ·
	Screen Screen	
pack Cor	material	-
00001	mterval(s):	
	From To	-
	Slot size in.	-
	Part Filter Pack:	
	Material	 Data started 12/08/05
6008	Size in.	

#### (5) WELL TEST:

Pump	Bailer	Air	Flowing.	Artesian	
Permeability		Yield	GF	РМ	
Conductivity		рН			
Temperature of W	ater °	F Depth	artesian flow fo	und	ft
Was water analysis	s don <b>c</b> ? Ye	s 🗸 No			
By whom?					
Depth of strata to I	oc analyzed. Fr	om	ft. to	<u> </u>	
Remarks					

Name of supervising Geologist/Engineer

### Well I.D. #: L

Start Card #: 167860(amended)

Точ	vnship <u>1</u>	N	Range 3	E	Section 14
Ι.	SW	4 of SE	¼ of above s	ection.	
2.	Either St	reet address of	well location sa	me as ow	ner
3.	or Tax lo ATTACI	t number of w I MAP WITH	ell location 100 I LOCATION ID north arrow.	ENTIFIE	D. Map shall include

Date \_

Date \_

#### ATER BEARING ZONES:

at which water was first found

From	To	Est. Flow Rate	SWL

#### ELL LOG: Ground elevation \_

Material	From	То	SWL
Reference original start 100164 for			
construction details.			
Pull monument, overdrilled to well			
denth & backfilled w/ bontonite	0	35	
depth & backfined w/ bentonite	0	55	
-			
Datc started 12/08/05	Completed 1	2/08/05	

(unbonded) Monitor Well Constructor Certification:

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

MWC Number 10402 Date 10/21/05 Signed

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

MWC Number 10442 Date 10/21/05 Signed

as required by ORS 537.7 Instructions for comple 1) OWNER/PROJ			Well I.D. #: 1	L		
1) OWNER/PROJ	55 & OAR 690-240-095) ting this report are on (	the last page of this form.	Start Card #:	167855	<b>`</b>	
ame Reynolds Metals	ECT: WELL	NO. <u>MW43-015</u>	(6) LOCATION OF WE	LL By legal descr	iption	
ddress 5100 Sundial Roa	1		Township 1 N P	ange 3 F	Section 1	4
ty Troutdale	State OR	Zip 97080	t SW K of SE	Ange <u>u</u>	Section _	-
2) TYPE OF WOI	łK:		2. Either Street address of wel 5100 Sundial Road	l location		
New constru	tion 🗌 Altera	ation (Repair/Recondition)	or Tax lot number of well lo	ocation 100		
Conversion	Deepe	ening <b>A</b> bandonment	3. ATTACH MAP WITH LO approximate scale and nor	CATION IDENTIFIED th arrow.	). Map sha	ll include
3) DRILLING MI	THOD:		(7) STATIC WATER LE	VEL:		
🔲 Rotary Air	🔲 Rotary	y Mud 🔄 Cable	Ft. below land surface	Date		
🗹 Hollow Sten	Auger Other		Artesian Pressure lb/sq in.	. Date		
4) BORE HOLE (	CONSTRUCTION	:	(8) WATER BEARING 2	ZONES:		
pecial Standards	<ul> <li>Depth of completed v</li> </ul>	well 15.3 ft.	Depth at which water was first foun	1d		
Vault (	100		From To	Est. Flow Rate		SWL
	R0	Water-tight Cover				
ft	04	Surface flush vault				
TO D		Locking cap				
ft. [0]						
2000		Casing	Ll			
0000		diameter <b>2</b> in material	(9) WELL LOG: Gr	round clevation		
0000		Welded Threaded Glued	Material	From	То	SWL
Sond			Pulled monument and overdril	led		
000		Liner	well to depth. Backfilled with		· · · · · · · · · · · · · · · · · · ·	
Seal		Liner	Bentonite			
		diameter in				
0 ft. 0 co co c		material			****	
TO < DO		Welded Threaded Glued				
$\frac{15.3}{15.3}$ ft. $\mathcal{O}_{\mathcal{O}}^{\mathfrak{A}}$ $\mathcal{O}_{\mathcal{O}}^{\mathfrak{A}}$			Old Start Card: 100167			
000 00		Well Seal:				
000	The all a con	Material Bent. Grout	-			
02.02		Amount 12 bags	-			
20.0 m	0°0°	Grout Weight				
0000		Borehole diameter				
5000		10 in				
- Bood	-Dogo	Bentonite Plug at least 3 ft thick			/	
0000	0000	Sorom				
Filter D D	- 100 BD					
pack DAD	E Eo E	interval/a)	-			
ne an	E	From To				
TO	日 2000	From To				
		Slot size in.				
0000	1 2000	Filter Pack:				
0000	- on or	Material	Data starts + 01/03/2005	(	03/2005	
000	200	Size in.	Date started 01/03/2003	Completed Un	03/2003	
) WELL TEST:	Bailer Air Yield pH °F Depth ar	Flowing Artesian GPM tesian flow found ft.	(unbonded) Monitor well Constructor I certify that the work I performed this well is in compliance with Oreg and information reported above are t Signed (bonded) Monitor Well Constructor	on the construction: on well construction stand rue to the best knowledge MWC Certification: struction, alteration, or al	ation, or aba dards. Mate e and belief. C Number <u>4181</u> pandonment	work
Permeability Conductivity Temperature of Water Was water analysis do By whom?	nc? Yes No		performed on this well during the	notmotion datas	above All	work
Permeability Conductivity Temperature of Water Was water analysis do By whom? Depth of strata to be a	nc? Yes No nalyzed. From	ft. toft.	performed on this well during the co performed during this time is in comp This report is true to the best of my k	pliance with Oregon well	above. All construction	work n standards.
Permeability Conductivity Temperature of Water Was water analysis de By whom? Depth of strata to be a Remarks	nc? Yes No	_ ft. to ft.	performed on this well during the con performed during this time is in com This report is true to the best of my k	onstruction dates reported pliance with Oregon well mowledge and beliet.	above. All construction	work n standards.
Permeability Conductivity Temperature of Water Was water analysis de By whom? Depth of strata to be a Remarks	ne? Yes No	_ ft. to ft.	performed on this well during the comperformed during this time is in comp This report is true to the best of my k	nstruction dates reported pliance with Oregon well nowledge and beliet. MWC	above. All construction	work n standards.

#### STATE OF OREGON MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095)

Well I.D. #:	L			
Start Card #:		167842	(amer	nded)

Instructions for completing this report are on the last page of this form.	Start Cald #: 10/042 (amended)	
(1) OWNER/PROJECT: WELL NO. MW43-027	(6) LOCATION OF WELL By legal description	
Name Reynolds Metals	(0) LOCATION OF WELL by legal description	
Address 5100 Sundial Rd	Well Location: County Multhoman	
City Troutdale State OR Zip 97080	Township <u>1</u> N Range <u>3</u> E Section <u>1</u>	4
(2) TYPE OF WORK:	1. <u>SW</u> ¼ of <u>SE</u> ¼ of above section.	
	2. Either Street address of well location same as owner	
New construction Alteration (Repair/Recondition)	or Tax lot number of well location 100	
Conversion Deepening Abandonment	3 ATTACH MAP WITH I OCATION IDENTIFIED Man shall	lincluda
	approximate scale and north arrow.	Include
(3) DRILLING METHOD:	(7) STATIC WATER LEVEL:	
Rotary Air Rotary Mud Cable	Ft below land surface Date	
Hollow Stem Auger	Actanica Decourse II (ac is Data	
	Artesian Pressure Ib/sq tn. Date	
(4) BORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES:	
Special Standards $\square \square \square \square$ Depth of completed well <b>29</b> ft.	Depth at which water was first found	
Vault (e)	From To Est. Flow Rate	SWL
Water-tight Cover		
ft Surface flush vault		
TO De Locking cap		
Casing		
diameter 2 in		
	(9) WELL LOG: Ground elevation	
TA SALL AND TA SALL AND THE ADDRESS AND THE AD	Material From To	SWI
	Peference cricinal start 100166 for	SWL
Scal		
in D D D in the second		
$0$ ft. $\omega \circ \omega$ material		
$TO \prec 000$ Welded Threaded Glued		
Olt of Well Seal:	Dull and the day like	
Material Bent. Grout	Pull monument, overaniled well to	
Amount 20 Gals	depth and backfilled w/ bentonite 0 29	
ar.o.° Grout Weight 9.7		
Borchole diameter		
5020		
	· · · · · · · · · · · · · · · · · · ·	
Case		
Eiller D D D = Screen		
$pack = \alpha \circ \alpha$		
0 $0$ interval(s):		
ft.   So St =ToToTo		
II. Sioi size III.		
Material		
Size in.	Date started 1/03/2004 Completed 1/03/2004	
	(unbonded) Monitor Well Constructor Certification:	
(5) WELL TEST:	I certify that the work I performed or the construction, alteration, or aban	idonment of
Pump Bailer Air Flowing Artesian	this well is in compliance with Oregon well construction standards. Materi and information reported above are true to the best knowledge and belief	ais used
Permeability Yield GPM	MWC Number 10	402

ſt.

and information reported above are that to the best	MWC Number 10402
Signed	Date 10/24/05
C	

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

Name of supervising	Geologist/Engineer	г		

✓ No

\_ <sup>pH</sup> \_ °F

Depth of strata to be analyzed. From \_\_\_\_\_\_ ft. to \_\_\_\_\_\_ ft.

Ycs

Depth artesian flow found

Conductivity \_

By whom?

Remarks

Temperature of Water

Was water analysis done?

MWC Number 10442 Date 10/24/05 Signed

1) OWNER/PROJECT:	WELL NO. MW45-017	(6) LOCATION OF WELL B	y legal description	n
Address 5100 Sundial Road	· · · · · · · · · · · · · · · · · · ·	Well Location: County Multnomah	<b>–</b>	
City Troutdale State OR	Zip 97080 🛫 🚈	Township 1 N Range	bove section	on <u>14</u>
2) I YPE OF WORK:		2. Either Street address of well locati	on	
New construction	Alteration (Repair/Recondition)	5100 Sundial Road	100	
Conversion	Deepening Abandonment	3. ATTACH MAP WITH LOCATIO approximate scale and north arro	ON IDENTIFIED. Map	shall include
3) DRILLING METHOD:	***************************************	(7) STATIC WATER LEVEL	:	
Rotary Air	Rotary Mud Cable	Ft. below land surface	Date	
Hollow Stem Auger	Other	Artesian Pressure lb/sq in.	Date	
4) BORE HOLE CONSTRU	CTION:	(8) WATER BEARING ZON	ES:	
Yes No pecial Standards 🔲 🗹 Depth of c	completed well 17.8 ft.	Depth at which water was first found		
Vault	0	From To Es	. Flow Rate	SWL
ft.	Water-tight Cover			
TO	Locking can			
fl.   [0]	Cocking cap			
	Casing			
	diameter 2 in.	(9) WELLLOG: Ground of	evation	
	Solution inaterial			CIVIT
	Welded Threaded Glued	Material	From To	SWL
000		well to depth Backfilled with		
Scal Scal	Contraction Liner	Bentonite		
	nD nd material			
	Welded Threaded Glued			
17.8 ft. 01 0				
	Well Scal:	Old Start Card: 100170		
	Material Bent.			
O A O A	Amount 15 Bags			
	Grout Weight			
	Borcholc diameter			
	$\frac{10}{1000}$ in.	`		
	Bentonite Plug at least 3 ft. thick			
Filter	BD Screen			
pack So S	Coco material			
ft. CCCC E	From To			
TOY PARSI E	From To			
	Slot size in.			
	Material			
		Date started 12/09/2004	Completed 12/09/2004	
608	Size in.			

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

nha Signed

MWC Number 004 Date 4/14/105

Name of supervising Geologist/Engine	er
--------------------------------------	----

Temperature of Water

By whom?

Remarks \_

Was water analysis done?

°F

Depth of strata to be analyzed. From \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

No

Ycs

Dcpth artesian flow found \_\_\_\_\_ ft.
leynolds Metals	(6) LOCATION OF WELL F	lv legal desc	rintion	
	- Well Location: County Multhomah	J - 6	P	
5100 Sundial Road	Township 1 N Range	3 E	Section	14
VDE OF WODK.	1. SW ½ of SE ½ of a	bove section.	Dection	
ITE OF WORK:	2. Either Street address of well locati	on		
	5100 Sundial Road			
	or Tax lot number of well location	100		
	3. ATTACH MAP WITH LOCATIOn approximate scale and north arrows and state and state and state are a state and state	ON IDENTIFIE )w.	D. Map sh	iall includ
RILLING METHOD:	(7) STATIC WATER LEVEL	:		
Rotary Air Rotary Mud Cable	Ft. below land surface	Date		
Hollow Stem Auger Other	Artesian Pressure lb/sq in	Date		
		2att		
ORE HOLE CONSTRUCTION:	(8) WATER BEARING ZON	ES:		
tandards $\square \square \square$ Depth of completed well <u>43</u> ft.	Depth at which water was first found			
	From To Es	. Flow Rate		SWL
Water-tight Cover				
n. Surface flush vault				
D D Locking cap				
Casing				
diameter 2				
material	(9) WELLLOG: Ground e	evation		
Welded Threaded Gh	d Material	From	То	SWI
	Pulled monument and overdrilled			
So Children	well to depth. Backfilled with			
diameter	in. Bentonite			
n naterial				
$\rightarrow$	d			
n. 00° al 0 0 0	-			
GO G Well Seal	Old Start Card: 100171			
Go Material Bent				
Dand Dand Amanut 22 Bare		_		
2.0 2 All and a contraction of the bags				
orout weight				
Sopo diameter				
Contraction of the sector of t	CK			
aD aD Screen				1
k Boog Boog material				4
or to the interval(s):				
n. 60.5 E G G From To				
To				
II. Story Story Story Story III.				
0 A 0 A Material				

I certify that the work | performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief. MWC Number 1042

MWC Number 1042 Date 4/8/24 Signed

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

Name of supervising Geologist/Engineer \_\_\_\_

Depth of strata to be analyzed. From

Bailer

Air

No

Yield

pH\_

°F

Yes

Flowing Artesian

ft.

GPM

ft. to ft.

Depth artesian flow found

Pump

Permeability

By whom?

Remarks

Conductivity \_\_\_

Temperature of Water

Was water analysis done?

am Signed

MWC Numbe

### STATE OF OREGON MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095)

Well I.D. #: I		
Start Card H.	467966	(amanda

(as required by ORS 537.765 & OAR 690-240-095) Instructions for completing this report are on the last page of this form.	Start Card #: 167866 (amended)	
(1) OWNER/PROJECT: WELL NO. MW48-055	(6) LOCATION OF WELL By legal description	
Name Reynolds Metals	Well Location: County Multnomah	
Address 5100 Sundial Rd	Township 1 N Range 3 E Section 14	
(2) TYPE OF WORK:	1. SW ¼ of SE ¼ of above section.	
(2) THEOF WORK:	2. Either Street address of well location same as owner	
Alteration (Repair/Recondition)	or Tax lot number of well location 100	
☐ Conversion ☐ Deepening ✔Abandonment	<ol> <li>ATTACH MAP WITH LOCATION IDENTIFIED. Map shall i approximate scale and north arrow.</li> </ol>	include
(3) DRILLING METHOD:	(7) STATIC WATER LEVEL:	
🔲 Rotary Air 📄 Rotary Mud 📄 Cable	Ft. below land surface Date	
Hollow Stem Auger I Other grout in place	Artesian Pressure lb/sq in. Date	
(4) BORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES:	
Special Standards Z Depth of completed well 56 ft.	Depth at which water was first found	
	From To Est. Flow Rate 5	SWL
Vault Water-tight Cover		
ft. )		
TO J B		
ft. 0 Locking cap		
Cosing Cosing diamater 2 in		
	(9) WELL LOG: Ground elevation	
Valdad Threaded Churd	Material From To	SWI
	Reference original start 104245 for	0112
2000	construction details	
Scal		
$n D_n D_n D$ diameter in.		
$\frac{0}{1}$ $\frac{1}{10}$		
Velded Threaded Glued		
OR of Well Scal:	Puil monument	
A Starting Bent. Grout	and backfilled w/ bentonite 0 56	
o a o a Amount 9.5 Gals		
Grout Weight 9.7		
Borchole diameter		
in.	· · · · · · · · · · · · · · · · · · ·	
DDD Bentonite Plug at least 3 ft. thick		
Screen Screen		
Filter 😸 0 😅		÷
$\rho_{\alpha}$ $\rho_{\alpha$		
ft.   [30 G] = [30 G] From To		
TO < Pat 是 E Pat & From To		
$- 1.  So \\ So$		
a o o o o o o o o o o o o o o o o o o o	Date started 12/08/2004 Completed 12/08/2004	
	(unbonded) Monitor Well Constructor Certification:	
(5) WELL TEST:	I certify that the work I performed on the construction, alteration, or aband	ionment of
Pump Bailer Air Flowing Artesian	this well is in compliance with Oregon well construction standards. Materia and information reported above are true to the best knowledge and belief	us used
Permeability Yield GPM	MWC Number 104	102
Conductivity pH	Signed Date-10/24/05	
Temperature of Water °F Depth artesian flow found ft.	•	
Was water analysis done? Yes VNo	(bonded) Monitor Well Constructor Certification:	
By whom?	I accept responsibility for the construction, alteration, or abandonment we	ork
Depth of strata to be analyzed. From fl to ft	performed on this well during the construction dates reported above. All we performed during this time is in compliance with Oregon well constructions	tandards.
Remarks	This report is true to the best of my knowledge and belief.	
	n vit	12
Name of supervising Geologist/Engineer	Signed Like Must Date 10/24/05	42
Same of autorytaning Georgian Englineer	Date 1024100	

### STATE OF OREGON MONITORING WELL REPORT

MONITORING WELL REPORT	Well I.D. #: L
(as required by ORS 537.765 & OAR 690-240-095)	Start Card #: 167865(amended)
(1) OWNER/PROJECT: WELL NO. MW51-069	(6) LOCATION OF WELL By logal description
Name Reynolds Metals	(0) LOCATION OF WELL by legal description
Address 5100 Sundial Rd	Taumakin 1 NI Banco 3 E Section 14
City Troutdale State OR Zip 97080	I SW K of SE K of above section
(2) TYPE OF WORK:	Fither Street address of well location Same as owner
New construction	or Tax lot number of well location 100
Conversion Deepening Abandonme	nt 3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include
(3) DRILLING METHOD:	(7) STATIC WATER LEVEL:
Kotary Air Kotary Mud Cable	Ft. below land surface Date
	Artesian Pressure lb/sq in. Date
(4) BORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES:
Special Standards $\square$ $\square$ Depth of completed well <u>69</u> ft.	Depth at which water was first found
Vault S	From To Est. Flow Rate SWL
Water-tight Cover	
ft. Surface flush vault	
ft of Locking cap	
Casing	, .
	(9) WELL LOG: Ground elevation
Sa Sa Walded Threaded Gl	Material From To SWI.
	Reference original start 100613 for
a o o d	construction details.
Seal a g	in.
$p D_{e} p D_$	
$TO \prec OOO$ Welded Threaded G	ued
CR CH Well Scal:	
Material Bent. Grou	t Pull monument, overdrilled well to
Amount 200 gallons	s depth & backlined w/ bentonite 0 03
Grout Weight 9.7	
Borehole diameter	
in.	·
$\nabla D \nabla C$ Bentonite Plug at least 3 ft.	thick
Screen	
Filter a o a material	
0 $0$ interval(s):	
$ T_{0}$ $S_{0}$ $S_{0}$ $F_{rom}$ $T_{0}$	
(t) [30 ℃] [] (10 m 10	
Filter Pack:	
Material	Data started 12/10/04 Completed 12/10/04
$\Box \circ \circ \circ \circ \Box$ $\Box \circ $	(unbanded) Maniter Well Constructor Cartification:
(5) WELL TEST:	I certify that the work I performed or the construction, alteration, or abandonment of

### (5) WELL TEST:

Pump Bai	lcr	Air	Flowing Artesian	
Permeability	Yiel	d	GPM	
Conductivity	pH			
Temperature of Water	°F	Depth artes	ian flow found	ft.
Was water analysis done?	Yes	🖌 No		
By whom?				
Depth of strata to be analy	zed. From		ì. to ft.	
Remarks				

(bonded) Monitor Well Constructor Certification:

Signed

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

this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief. MWC Number 10402

MWC Number 10442  $\mathcal{O}$ Date 10/24/05 Signed

Date 10/24/05

Name of supervising Geologist/Engineer

Instructions for completing thi	is report are on the l	ast page of this form.	Start Card #:	U7862	
(1) OWNER/PROJECT: Name Reynolds Metals	WELL NO	, MW54-050	(6) LOCATION OF WELL F	By legal description	on
Address 5100 Sundial Road			Well Location: County Multnomah		
City Troutdale Sta	te OR	Zip 97080	Township 1 N Range	3E Sec	tion 14
(2) TYPE OF WORK:	Alteration	(Repair/Recondition)	<ol> <li>SW ½ of SE ½ of a</li> <li>Either Street address of well locat</li> <li>5100 Sundial Road</li> <li>or Tax lot number of well location</li> </ol>	bove section.	
		Abandonment	3. ATTACH MAP WITH LOCATI approximate scale and north arr	ON IDENTIFIED, Ma ow.	p shall include
(3) DRILLING METHO	D:		(7) STATIC WATER LEVEL		
☐ Rotary Air ☑ Hollow Stem Auger	🔲 Rotary Mu 🛄 Other	d 🗌 Cable	Ft. below land surface Artesian Pressure lb/sq in.	Date Date	
(4) BORE HOLE CONS	<b>TRUCTION:</b>		(8) WATER BEARING ZON	ES:	
Special Standards	pth of completed well	50 ft.	Depth at which water was first found		_
Vault C	<b>K</b> 04	- Water-tight Cover	From To Es	t. Flow Rate	SWL
n.	0	- Surface flush vault			
	≺	Locking cap		······································	
	0	Casing			
Co Co	008	diameter 2 in.	(9) WELLLOG: Ground e	levation	
000	E S S	material Welded Threaded Glued	Material	From To	SWL
O o nO	Cand		Pulled monument and overdrilled		
Scal	603	Liner	well to depth. Backfilled with	·	
		diameter in.			
TO Y SOO	6000	Welded Threaded Glued			
	Con Gi		Old Start Card: 132598		
Gas	Co S	Well Seal: Material Bent, Grout			
CO CO		Amount 70 Gals	·		
80°0	So Cl	Grout Weight 9.7			
E o a d	Sont	Borcholc diameter			
	Ch Ch Bent	tonite Plug at least 3 ft. thick			
	20 ° 1	Screen			2 *
Filter pack	80 8	material			
	0000	interval(s): From To			
TO	000	From To			
	COOP	Slot size in.			
3000	0000	Material	Date starte/1 01/03/2005	Completed 01/03/200	5
C 208	008	Size in.	(unbonded) Monitor Well Constructor Certif	completed <u>e nooizou</u>	
5) WELL TEST:			I certify that the work I performed on the c	construction, alteration, o	or abandonment of Materials used
Pump Bailer	Air Fl	owing Artesian	and information reported above are true to the	e best knowledge and be	elief.

ft.

\_ ft.

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

m Signed

MWC Number

Name of supervising Geologist/Engineer

Depth of strata to be analyzed. From \_

Temperature of Water

By whom?

Remarks

Was water analysis donc?

°F

Ycs

Depth artesian flow found

\_ ft. to \_

No

### STATE OF OREGON MONITORING WELL REPORT

(1) OWNER/PROJECT:

(2) TYPE OF WORK:

New construction

Conversion

(3) DRILLING METHOD:

Name Reynolds Metals Address 5100 Sundial Rd

City Troutdale

(as required by O	RS 537.765 & O/	AR 690-240-095)	i i i i i i i i i i i i i i i i i i i	
Instructions for	completing thi	s report are on	the last page	of this form.

State OR

Well I.D. #: L17730

Start Card #: 167927

WELL NO. <b>PZ17-019</b>	(6) LOCATION OF WELL By legal description Well Location: County Multnomah
Zip 97060	Township     1     N     Range     3     E     Section     14       SW     ¼ of     SE     ¼ of above section.
	Street address of well location Same as owner
Alteration (Repair/Recondition)         Deepening       Image: Abandonment	Tax lot number of well location
	(7) STATIC WATER LEVEL:
Rotary Mud Cable	Ft. below land surface Date
Other _push probe	Artesian Pressure Ib/sq in. Date

### (8) WATER BEARING ZONES:

Depth at which water was first found

From	To	Est. Flow Rate	SWL

### (9) WELL LOG:

Ground elevation

Material	From	То	SWL
Pulled monument, overdrilled well to	0	20	
depth and backfilled w/ bentonite.			
Amending mult 75334			
Reference Start Card 100606 for			
construction details.			
•			
and a second			
Date started 12/22/04	Completed '	2/22/04	

(unbonded) Monitor Well Constructor Certification:

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

MWC Number 10402 Date 10/21/05 Signed

(bonded) Monitor Well Constructor Certification:

Signed

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 well construction standards. This report is true to the best of my knowledge and belief.

> MWC Number 10442 Date 10/24/2005

🗖 Rotary Air	Rotary Air		Cable
Hollow Stem A	Hollow Stem Auger I Other push probe		
(4) BORE HOLE CO	NSTRUC	TION:	
Yes No	De 1		
opecial Standards	Depth of con		ft.
Protective casing $\rightarrow$		- Locking cap	
	A	Prote	ective
Cement monument		post	
Land surface	$\left  \downarrow \right $		
NILIN SUITACE	1.1.1.1		
Monument		200	
	1	Casing	g eter 1/2 :
TO Z SON	51	D mater	rial in.
ft. ) 0°0°0	1/1/20	Welde	d Threaded Glued
00000	10000		
20, 20 XX	1 1/1/ 20	D Liner	
> She	Ritte S?	diamet	ter in.
Sach		materi	d Threaded Churt
Scal	M Soo	welde	
		Ŭ .	
TO 2 Paralle	AND P	Well se	al Bent
20 ft.		Amoun	1t 30 lbs
502		Grout v	veight
200		Boreho	le diameter
6000		2.5	in.
50 S	00	Bentonite	e plug at least 3 ft. thick
6.00	00	°0	
Filter 20 a	200	Screen	
pack 0000	- 520	materia	ıl
ft. 0000	E 60	d interval	l(s):
TO X ON CON	H 00	From_	To
ft. 000	E So	Sint a	10
20°0	E 200°	Filter o	ack:
8000		Materia	ป
600	000	Size_	in.

### (5) WELL TEST:

Pump Permeability	Bailer	Air Yield	Flowing GF	Artesian M	
Conductivity Temperature of Was water analy	Water	pH _°F · Depth Yes □No	artesian flow fo	und	ft
By whom? Depth of strata t	o be analyzed.	From	ft. to	ft.	
Remarks					

Name of supervising Geologist/Engineer

# STATE OF OREGON

MONITOKING WELL F	KEPUKI	,	Ven 1.D. #. L					
(as required by ORS 537.765 & OAR	(as required by ORS 537.765 & OAR 690-240-095)			Start Card #: 167930				
(1) OWNED/DDO IE CT.	eport are on the last page of this form.	1						
(I) OWNER/PROJECT: Name Reynolds Motals	WELL NO. <b>P217-039</b>	(6) LOCATION	OF WELL B	y legal des	scription			
Address 5100 Sundial Rd		Well Location: Coun	ty Multnomah					
City Troutdale State (	<b>OR</b> 7in 97060	Township 1	N Range 3	E	Section	14		
(2) TVPF OF WORK:		SW ¼ of	SE ¼ of above s	ection.				
(2) THE OF WORK.		Street address of well	location	Same as o	owner			
New construction	Alteration (Repair/Recondition)	Tax lot number of we	Il location	100				
Conversion	Deepening Abandonment	ATTACH MAP WIT	'H LOCATION ID	ENTIFIED.	Map shall in	clude		
		approximate scale a	id north arrow.					
(3) DRILLING METHOD:		(7) STATIC WA	TER LEVEL:	;				
Rotary Air	Rotary Mud Cable	Ft. below	land surface	Date				
Hollow Stein Auger	Other push probe	Artesian Pressure	lb/sq in.	Date				
(4) BORE HOLE CONSTR	UCTION:	(8) WATER BEA	ARING ZONE	CS:				
Special Standards	of completed well 40 ft.	Depth at which water w	as first found					
<b>_</b>	Locking cap	From To	Est	Flow Rate		SWL		
Protective casing								
	Protective							
	post							
Cement monument								
Land surface								
Monument	0000	(9) WELL LOG	Ground ele	evation				
	Casing		· . I			OW		
	$\bigcirc a a D$ material m.	Mater	181	From	10	SWL		
n ) ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	Welded Threaded Glued	Pulled monument, ov	erarilled well to	0	40			
		depth and backfilled	w/ bentonite.					
20, 20, 10, 10, 10, 10, 10, 10, 10, 10, 10, 1	DD DD Liner							
	a o a diameter in.							
	inaterial							
Seal Go C	Welded Threaded Glued	Reference Start Card	100605 for	1				
		construction details.						
	Well seal:							
	Material Bent.	Amending Mult 7533	;					
40 II. 8.0 %	anount 57 lbs	in regards to start ca	d.					
640 5 AMM AMM	Grout weight							

Borcholc diameter

\_\_\_ in. Bentonite plug at least 3 ft. thick

То

To

in.

in.

Date started 12/22/04

Signed

(unbonded) Monitor Well Constructor Certification:

(bonded) Monitor Well Constructor Certification:

2.5

Screen

Froin\_

From

Size

Slot size

Filter pack: Material

material interval(s): Wall 1 D #

### (5) WELL TEST:

Filter

pack

ΤŌ

ft.

A.

00

D 9 2D, 2

à

I

🗌 Pump	🗖 Bailer	Ai	r 🗍 Flow	ing Artesian	
Permeability		Yield _		GPM	
Conductivity		рН			
Temperature of	Water	°F נ	Depth artesian flo	w found	f
Was water anal	ysis done? 🔲 Y	es 🗖	No		
By whom?					
Depth of strata	to be analyzed. F	rom	ft. to	ft.	

R

0

(

6

Name of supervising Geologist/Engineer October 2003 ENF

performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief. MWC Number 10442 Date 10/24/2005 Signed

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work

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

Completed 12/22/04

MWC Number 10443 Date 10/24/05

(as required by ORS 537.765 & OAR) Instructions for completing this re-	090-240-095) eport are on the last nage of this form	Start Card #: 1679	28	
(1) OWNER/PROJECT: Name Reynolds Metals	WELL NO. <b>PZ18-023</b>	(6) LOCATION OF WELL By	y legal descrip	tion
Address 5100 Sundial Rd		Township 1 N Bongo 3	F c	action 14
City Troutdale State C	DR Zip 97060	SW 1/ of SE 1/ of shows of	L S	ection <u>14</u>
2) TYPE OF WORK:		Street address of well location	Same as owner	
New construction Conversion	Alteration (Repair/Recondition)	Tax lot number of well location	100 ENTIFIED. Map sl	all include
A DBULING METHOD		approximate scale and north arrow.		
3) DRILLING METHOD:		(7) STATIC WATER LEVEL:		
🗖 Rotary Air	🗌 Rotary Mud 🔲 Cable	Ft. below land surface	Date	
Hollow Stem Auger	Other push probe	Artesian Pressure Ib/sq in.	Date	
4) BORE HOLE CONSTR	UCTION:	(8) WATER BEARING ZONE	S:	
pecial Standards 🔲 🗹 Depth o	of completed well 24 ft.	Depth at which water was first found		
Protective casing	Locking cap	From To Est.	Flow Rate	SWL
	Destanting			
	■ Protective post			
Cement monument				
and surface				
nument		(9) WELLLOG: Ground ele	vation	
	Casing			r
	$diameter \frac{1/2}{1}$ in.	Material	From	To SWL
n.) @0°0	Welded Threaded Glued	Pulled monument, overdrilled well to	0 24	
0000000		depth and backfilled w/ bentonite.		
20, 20 N	Do D Lincr	Amonding mult 75226		
	diameter in.	Amending mult 75556		
	Page Welded Threaded Chief	Poteropoo Start Card 100604 for		
Seal				
TO 2 Para	Well seal: Material Bent			
24 ft. 0 6 0 6	Amount 35 lbs	······································		
50 S	Grout weight			
	Borehole diameter			
	2.5 in.	•		
	Bentonite plug at least 3 ft. thick			
	nD nD			
onck 🖉 Ö 🕿	ස්ට ස් Screen			
	material			
	Ge Ge Interval(s):			
	From To			
	Slot size in.			
	Filter pack:			
	Material	Date started 12/22/04	Completed 12/24/0	4
	5120 In.	(unbonded) Monitor Well Constructor Certific	cation:	
) WELL TEST:		I certify that the work I performed on the co this well is in compliance with Oregon well co	nstruction, alteration	or abandoninen Materials used
Punp Bailer	Air Flowing Artesian	and information reported above are true to the	best knowledge and	belief.
Permeability V	ield GPM			1001 10102

Signed

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

12

MWC Number 10442 Date 10/24/2005

Puinp	Bailer	🗋 Air	Flowing Arte	sian	
Permeability	Y	ield	GPM		
Conductivity	p	Н			
Temperature of V	Vater °F	Depth artes	ian flow found		ft
Was water analys	sis done? 🔲 Yes	🗆 No			
By whom?					
Depth of strata to	be analyzed. From	m f	t. to	ft.	
Remarks					

October 2003 ENF

### STATE OF OREGON MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 690-240-095) Instruction

Well I.D. #: L17731

Start Card # 167931

Instructions for completing this	report are on the last page of this form.	Statt Cald #. 10/951		
(1) OWNER/PROJECT: Name Reynolds Metals Address 5100 Sundial Rd City Troutdale State (2) TYPE OF WORK:	WELL NO. <b>PZ18-040</b>	(6) LOCATION OF WELL By legal description         Well Location: County Multnomah         Township 1       N       Range 3       E       Section 14        SW ¼ ofSE ¼ of above section.         Street address of well locationSame as owner		
New construction	Alteration (Repair/Recondition)	Tax lot number of well location       100         ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.		
(3) DRILLING METHOD	: ☐ Rotary Mud ☐ Cable ☑ Other <b>push probe</b>	(7) STATIC WATER LEVEL:        Ft. below land surface       Date		
(4) BORE HOLE CONSTI	RUCTION:	(8) WATER BEARING ZONES: Depth at which water was first found		

From

#### Special Standards Depth of completed well 42 L ft. Locking cap Protective casing ---> Protective post Cement monument Land surfac Monument Casing diameter 1/2 ſl. in. ΤO material ft. Welded Threaded Glued ົກ Liner diameter\_ in. inaterial 38 Welded Threaded Glued Seal σ. 0 ft. Well seal: TO · Material Bent. 0.0 0 42\_ft. Amount 53 lbs Grout weight 0 Ó Borehole diameter 202 2.5 \_\_\_ in. Ċ Bentonite plug at least 3 ft. thick 00 יእ 5 00 9. 20,2 DO DE Filter 0000 Screen 208 pack material Ore interval(s): ſt. ο 00 Froin \_\_\_\_\_ To \_\_\_ TO . (18 38 From \_\_\_\_\_ To \_\_\_\_\_ ft. 00 Slot size in. Filter pack: Material \_ а 20 0 Size in.

### (5) WELL TEST:

Pump Permeability	🔲 Bailer	Yiel	Air d	Flowing 🗌 🕞	Artesian PM	
Conductivity		pH				
Temperature of	Water	°F	Depth	artesian flow f	ound	Ո
Was water anal	ysis done? 🔲	Yes	🗌 No			
By whom?						
Depth of strata	to be analyzed.	From		ft. to	fl.	
Remarks						

### (9) WELL LOG: Ground clevation

То

SWL From То Material Pulled monument, overdrilled well to 0 42 depth and backfilled w/ bentonite. Reference Start Card 100607 for construction details. Amending Mult 75337 in regards to start card. Completed 12/22/04 Date started 12/22/04

Est. Flow Rate

SWL

(unbonded) Monitor Well Constructor Certification:

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

MWC Number 10402 Date 10/24/05 Signed

(bonded) Monitor 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 well construction standards. This report is true to the best of my knowledge and belief.

Mu 7 MWC Number 10442 Date 10/24/2005 Signed

Name of supervising Geologist/Engineer October 2003 ENF

### STATE OF OREGON MONITORING WELL REPORT (as required by ORS 537.765 & OAR 690-240-095)

(1) OWNER/PROJECT: Name Reynolds Metals Address 5100 Sundial Rd

(2) TYPE OF WORK:

New construction Conversion

Hollow Stem Auger

(3) DRILLING METHOD Rotary Air

City Troutdale

Instructions for completing this r

Other push probe

State

( 690-240-095) report are on the last page of this form.	Start Card #: <u>167929</u>
WELL NO. <b>PZ19-014</b>	(6) LOCATION OF WELL By legal description
OR Zip 97060 -	Township 1       N       Range 3       E       Section 14         SW 4 of SE       4 of above section.         Street address of well location       Same as owner
Alteration (Repair/Recondition)         Deepening         Abandonment	Tax lot number of well location       100         ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
Rotary Mud Cable	(7) STATIC WATER LEVEL: Ft. below land surface Date

Well I.D. #: L 17732

## (4) BORE HOLE CONSTRUCTION:

Special Standa	rds 🗌 🖸	Depth	of complete	ed well 15	ft.
Durates			Loc	eking cap	
Protect	tive casing		5		
			A.	Protective nost	
Cement mor	ument	┃┍  ■			
<b>T</b> 1 C	λ.				
Land surface	12.2.6.00	HHa	11/11/		
Monument			<u>[]]][]</u>	C22.4	
	Jos		1000	Casing	
<u> </u>	2005		12000	diameter 1/2	in.
TO ~	200		2000	material	
n.	000	$\otimes$	1000	Welded Threaded	I Glued
	0000	X [X]	10200		i
	202	X [X]	20000	Liner	in
2	0000	10 M	20000	inaterial	111.
Seal	08.0		00 000	Welded Threaded	Glued
	0000				
<u>0</u> ft.	000		a S	Well seal:	
$TO \prec$	62,00		10°00	Material Bent.	
<u>15</u> ft.	0.00		0000	Amount 36 lbs	
	0000		0000	Grout weight	
l	0000		CODD	2.5 in	
	. Sood		1000	Boutonita plug at leas	at 2 ft thick
6	0000		0000	Bentomite plug at leas	st 5 ft. unek
Filter	20,20	이 것을	20,20		
pack	808		8080	Screen	
	0000		e no	interval(s):	
- <u>-</u>	000	E	0000	From To	
ft.	000		08 2	From To	
	0000	E	2020	Slot size	in.
	DORO	E	0000	Filter pack:	
l	500	Π	500	Material	
				5126	I.

### (5) WELL TEST:

Pump Permeability	☐ Bailer ☐ Air Yield	Flowing A GP	Artesian M
Conductivity Temperature of V Was water analy. By whom?	pH	cpth artcsian flow fo No	und
Depth of strata to	o be analyzed. From	ft. to	ft.

Name of supervising Geologist/E	ngin
---------------------------------	------

(8) WATER BEARING ZONES: Depth at which water was first found

lb/sq in.

Artesian Pressure \_

From	To	Est. Flow Rate	SWL

Date

### (9) WELL LOG: Ground elevation

SWL Material From То Pulled monument, overdrilled well to 0 15 depth and backfilled w/ bentonite. Reference Start Card 100609 for construction details. Amending Mult 75370 in regards to start card. Completed 12/22/04 Date started 12/22/04

(unbonded) Monitor Well Constructor Certification:

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

MWC Number 10402 Signed Date 1/21/05

(bonded) Monitor 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 well construction standards. This report is trug to the best of my knowledge and belief.

4WC Number 10442 Date 10/24/2005 Signed

October 2003 ENF

### STATE OF OREGON MONITORING WELL REPORT

Well I.D. #: L 17733

(as required by ORS 537.765 & OAR 69 Instructions for completing this rep	0-240-095) ort are on the last page of this form.	Start Card #: <u>167932</u>
(1) OWNER/PROJECT: Name Reynolds Metals Address 5100 Sundial Rd City Troutdale State OR (2) TYPE OF WORK: New construction Conversion	WELL NO. <u>PZ19-040</u> <u>R</u> Zip 97060 Alteration (Repair/Recondition) Decpening <b>M</b> Abandonment	(6) LOCATION OF WELL By legal description         Well Location: County Multnomah         Township 1       N       Range 3       E       Section 14        SW ¼ ofSE ¼ of above section.         Street address of well locationSame as owner        Tax lot number of well location100         ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow.
(3) DRILLING METHOD:	☐ Rotary Mud ☐ Cable ☑ Other <b>push probe</b>	(7) STATIC WATER LEVEL:         Ft, below land surface       Date         Artesian Pressure Ib/sq in.       Date
(4) BORE HOLE CONSTRU	CTION:	(8) WATER BEARING ZONES: Depth at which water was first found
Protective casing Cement monument	Locking cap Protective post	From     To     Est. Flow Rate     SWL

in.

in.

Casing diameter 1/2

material

material

 $\Box$ 

Well seal:

2.5

Screen

material

interval(s):

Slot size

· Filter pack: Material Size\_

From \_\_\_\_\_ To \_\_\_ From

Material Bent.

Amount 51 lbs

Borehole diameter

Grout weight \_

Liner diameter

Welded Threaded Glued

Welded Threaded Glued

\_\_\_in.

Bentonite plug at least 3 ft. thick

\_ To \_

in.

in,

#### (9) WELL LOG: Ground elevation

Material	From	То	SWL
Pulled monument, overdrilled well to	0	40	
depth and backfilled w/ bentonite.			
Reference Start Card 100608 for			
construction details.			
Amending Mult 75339			
in regards to start card.			
•			
	_		
Date started 12/22/04	Completed	12/22/04	

### (unbonded) Monitor Well Constructor Certification:

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

MWC Number 10402 Date 10/24/05 Signed

(bonded) Monitor Well Constructor Certification:

l 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 pregon well construction standards. This report is true to the best of my knowledge and belief.

fl.	00000000000000000000000000000000000000	
(5) WEI	L TEST:	

Pump Permeability	Bailer	 Yiel	<b>]</b> Air d	🗌 Flowin	ig Artesian GPM	
Conductivity		pH				
Temperature of	Water	°F	Depth a	tcsian flow	found	f
Was water anal	ysis donc? 🔲	Yes	No No			
By whom?						
Depth of strata	to be analyzed.	From		_ fl. to	ft.	
Remarks						

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Name of supervising Geologist/Engineer

October 2003 ENF

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Filter

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# ATTACHMENT 5 OWRD Special Standards





January 11, 2005

GEO TECH EXPLORATIONS BILL KLOSTERMANN #10442 19700 SW TETON TUALATIN OR 97062

# D TE CE TE TO TE TO TAN 1 & 2005

Water Resources Department North Mall Office Building 725 Summer Street NE, Suite A Salem, OR 97301-1271 503-986-0900 FAX 503-986-0904

### FINAL ORDER

Dear Bill:

The Special Standard request you submitted for owner: Reynolds Metals, Start Card numbers 167943 (MW6-176) and 167944 (MW6-094), is approved for the following: You may abandon these wells in place as described in OAR 690-240-0510 (2).

The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240.

If you have any questions regarding this letter, I may be contacted at (503) 986-0851, or by e-mail at Kristopher.R.Byrd@wrd.state.or.us.

Sincerely,

Kristopher Byrd

Well Construction Program Coordinator Enforcement Section

enclosure

cc: Joel Jeffery, NW Region Monitor Well Inspector File

This is a final order in other than a contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

### PAGE 02

## **Oregon Water Resources Department**

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### REQUEST FOR WRITTEN APPROVAL TO USE CONSTRUCTION METHODS NOT INCLUDED IN OREGON ADMINISTRATIVE RULES 690-200 THROUGH 690-240

Before the request can be considered, this form must be completed. Requests shall be submitted to the Well Construction Specialist, Water Resources Department, 725 Summer Street NE, Suite "A", Salem OR 97301-1271. Requests may also be considered by the appropriate Regional Manager.

Hen Tech	onded Well Constructor (name, license #, and mailing address): Bill Klostermann 104
()cor jech_	Location of Well: $SW 1/4 = E 1/4 Tax lot 100 Section 14$
,	Township ( N, Range 3EX, Multhomah County
	Address at well site: 5100 Sundial Road
(r	$\frac{ \Gamma_{u}+da e_{f}\circ R}{ \Gamma_{u}+da e_{f}\circ R}$
(4	Name and Address of Land Owner: Reynolds Metals
(-	SIOO Sundia Road Trantolale, OR
(4	) Distance to the nearest septic tank, drainfield, closed sewage line (if water supply well)
(5	) The unusual site conditions which necessitate this request: <u>Power lines directly</u>
	the wells were drilled.
(6	The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed)
	bentonité gront wells in place, no overdn/1
•	old S.C.H ABCARDS

(7) Diagram showing the pertinent features of the proposed well design and construction: (attach additional pages if needed)

### PLEASE NOTE:

- (1) The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240.
- (2) If it should be determined at some future date that the well, due to its construction, is allowing ground water contamination, waste or loss of artesian pressure, the undersigned shall return to the site and rectify the problem.
- (3) If oral approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of oral approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior oral approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge.

**Bonded Constructor Signature:** revised 11/03/2003





December 3, 2004

GEO TECH EXPLORATIONS BILL KLOSTERMANN #10442 19700 SW TETON TUALATIN OR 97062



Water Resources Department North Mall Office Building 725 Summer Street NE, Suite A Salem, OR 97301-1271 503-986-0900 FAX 503-986-0904

### FINAL ORDER

Dear Bill:

The Special Standard request you submitted for owner: Reynolds Metals, Start Card numbers 167833 -167844, is approved for the following: Monitor well numbers 03-017, 03-098, 05-025, 06-024, 12-184, 15-024, 15-086, 15-175, 38-007, 38-035, 39-095 and 48-055 may be abandoned in place. The casings shall then be removed below grade, as compatible with local site conditions and land practices. If bentonite is used then the placement of the bentonite shall conform to the manufacturers specifications and result in a seal that is free of voids or bridges.

The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240.

If you have any questions regarding this letter, I may be contacted at (503) 986-0851, or by e-mail at Kristopher.R.Byrd@wrd.state.or.us.

Sincerely,

Kristopher Byrd

Well Construction Program Coordinator Enforcement Section

enclosure

cc: Joel Jeffery, NW Region Monitor Well Inspector File

This is a final order in other than a contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review of the order must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137.004-0080 and OAR 690-01-0005 you may either petition for judicial review or petition the Director for reconsideration of this order.

### PAGE 03

### **Oregon Water Resources Department**

### REQUEST FOR WRITTEN APPROVAL TO USE CONSTRUCTION METHODS NOT INCLUDED IN OREGON ADMINISTRATIVE RULES 690-200 THROUGH 690-240

Before the request can be considered, this form must be completed. Requests shall be submitted to the Well Construction Specialist, Water Resources Department, 725 Summer Street NE, Suite "A", Salem OR 97301-1271. Requests may also be considered by the appropriate Regional Manager.

Date	of request: Nov. 30, 2004 Oral approval date (if applicable): 12/3/2004			
Bond	ed Well Constructor (name, license #, and mailing address): Bill Klostermann			
1044	2, 19700 SW Teton Avenue, Tualatin, OR 97062			
(1)	Location of Well: SW 1/4 SE 1/4 Tax lot 100 Section 14 ,			
	Township <u>1</u> , Range <u>3</u> , Multnomah County			
	Address at well site: 5100 Sundial Road			
(2)	Start Card Number(s)(for work to be done): 167833-167844			
(3)	Name and Address of Land Owner: <u>Reynolds Metals</u> 5100 Sundail Road			
(4)	Distance to the nearest septic tank, drainfield, closed sewage line (if water supply well) N/A			
.(5)	5) The unusual site conditions which necessitate this request: Laboratory			
	analytical data shows no contamination for the included wells.			
(6)	The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed)			
	Abandon wells in place			





January 11, 2005

GEO TECH EXPLORATIONS BILL KLOSTERMANN #10442 19700 SW TETON TUALATIN OR 97062

# DECERTON

Water Resources Department North Mall Office Building 725 Summer Street NE, Suite A Salem, OR 97301-1271 503-986-0900 FAX 503-986-0904

### FINAL ORDER

Dear Bill:

The Special Standard request you submitted for owner: Reynolds Metals, Start Card numbers 167943 (MW6-176) and 167944 (MW6-094), is approved for the following: You may abandon these wells in place as described in OAR 690-240-0510 (2).

The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240.

If you have any questions regarding this letter, I may be contacted at (503) 986-0851, or by e-mail at Kristopher.R.Byrd@wrd.state.or.us.

Sincerely,

Kristopher Byrc

Well Construction Program Coordinator Enforcement Section

enclosure

cc: Joel Jeffery, NW Region Monitor Well Inspector File

This is a final order in other than a contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

# **Oregon Water Resources Department**

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### REQUEST FOR WRITTEN APPROVAL TO USE CONSTRUCTION METHODS NOT INCLUDED IN OREGON ADMINISTRATIVE RULES 690-200 THROUGH 690-240

Before the request can be considered, this form must be completed. Requests shall be submitted to the Well Construction Specialist, Water Resources Department, 725 Summer Street NE, Suite "A", Salem OR 97301-1271. Requests may also be considered by the appropriate Regional Manager.

	Bond	ed Well Constructor (name, license #, and mailing address): Bill Klostermann 104
eo.Tech		1700 SW Teter Tualatin OR 97062
	(1)	Location of Well: $\underline{SW}_{1/4} \underline{SE}_{1/4} \operatorname{Tax lot}_{100} \operatorname{Section}_{14}$
		TownshipN, Range3EX, Multhomah County
		Address at well site: 5100 Sundial Road
		I routdale, oR
	(2)	Start Card Number(s)(for work to be done): 167943 - 167944
	(3)	Name and Address of Land Owner: Reynolds Metals
		5100 Sudia Road Troutdale, OR
	(4)	Distance to the nearest septic tank, drainfield, closed sewage line (if water supply well)
	(5)	The unusual site conditions which necessitate this request: <u>Four Ines directly</u>
		overhead that were installed atter
		the wells were drilled.
	(6)	The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed)
	(6)	The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed)
	(6)	The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed) bentonite groot wells in place, no overdall
	(6)	The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed) <u>bentonite</u> grot wells in place, no overdall
	(6)	The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed) <u>bentonite</u> grot wells in place, no overdall
	<b>(6)</b>	The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed) <u>bentonite</u> groat wells in place, no overdn// old s.c.#   AB CARDS
	(6) ./M	The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed) <u>bentonite</u> grot Wells <u>n</u> place, <u>no overdn//</u> <u>bentonite</u> old s.c.# <u>AB cAROS</u> <u>N-6-176</u> <u>79941</u> <u>167943</u>

Diagram showing the pertinent features of the proposed well design and construction: (attach additional pages if needed)

### PLEASE NOTE:

- (1) The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240.
- (2) If it should be determined at some future date that the well, due to its construction, is allowing ground water contamination, waste or loss of artesian pressure, the undersigned shall return to the site and rectify the problem.
- (3) If oral approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of oral approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior oral approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge.

**Bonded Constructor Signature:** revised 11/03/2003

(7)





Dear Bill:

MW21-176

The Special Standard request you submitted for owner: Reynolds Metals, Start Card number 167882, is hereby approved for the following: You may abandon this well in place (below a depth of 84 feet bgs) as described in OAR 690-240-0510 (2). The placement of the sealing material shall conform to the manufacturers specifications and result in a seal that is free of voids or bridges.

The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240.

If you have any questions regarding this letter, I may be contacted at (503) 986-0851, or by e-mail at Kristopher.R.Byrd@wrd.state.or.us.

Sincerely

Kristopher Byrd Well Construction Program Coordinator Enforcement Section

enclosure

cc: Joel Jeffery, NW Region Monitor Well Inspector File

This is a final order in other than a contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

# **Oregon Water Resources Department**

### REQUEST FOR WRITTEN APPROVAL TO USE CONSTRUCTION METHODS NOT INCLUDED IN OREGON ADMINISTRATIVE RULES 690 200 THROUGH 690-240

Before the request can be considered, this form must be completed. Requests shall be submitted to the Well Construction Specialist, Water Resources Department, 725 Summer Street NE, Suite "A", Salem OR 97301-1271. Requests may also be considered by the appropriate Regional Manager.

Date	of request: 1/20/05 Oral approval date (if applicable): 1/10/05				
Rood	bed Well Constructor (name, license #, and mailing address); Bill Klosterrogen				
1044	2 19700 SW Teton Ave Tualatin Or, 97062				
(1)	Location of Well: SW 1/4 SE 1/4 Tax lot 100 Section 14				
	Township 1N, Range 3E, Multnomah County				
	Address at well site: 5100 Sundial Rd Troutdale Or, 97080				
(2)	Start Card Number(s)(for work to he done): 167882				
(3)	Name and Address of Land Uwner: Roynolde Motale Same as Site address				
(4)	Distance to the nearest septic tank, dramfield, closed sewage line (if water supply well) NA				
(5)	The unusual site conditions which necessitate this request. During overdrill of				
	original borehole with 10" casing well was lost at 75 feet. Hole was advanced to				
	84 feet to confirm 100% new borehole				
(6)	The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed)				
	Grout well from 84 feet back to the surface				

(7) Diagram showing the pertinent features of the proposed well design and construction: (attach additional pages if needed)

### PLEASE NOTE:

(1) The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240.

 $\mathbf{b}$ 

- (2) If it should be determined at some future date that the well, due to its construction, is allowing ground water contamination, waste or loss of artesian pressure, the under signed shall return to the site and rectify the problem.
- (3) If oral approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of oral approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior oral approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge.

Bonded Constructor Signature:

revised 11/03/2005