

July 31, 2014

Mr. George Alexander Nuclear Regulatory Commission 11545 Rockville Pike Mail stop T8F5 Rockville, MD 20852

RE: Groundwater Pathway Elimination – Dose Modeling NRC Decommissioning License 24-16273-01 Sigma-Aldrich Company, 11542 Fort Mims Dr., St. Louis, MO 63146

Dear Mr. Alexander:

In a letter dated April 24, 2013, Sigma Aldrich Company (SAC) provided information supporting a proposal to remove the drinking water pathway from consideration in site specific dose modeling. The NRC documented its reply in a public meeting summary dated August 9, 2013. In that summary, NRC required additional documentation from the U.S. Geological Survey or an independent consultant to verify that both the upper water-bearing unit as well as deeper units are of poor quality, low yield and/or inaccessible.

In response to NRC feedback, SAC presents below an exhaustive report that addresses NRC requirements for elimination of drinking water pathway from consideration in site-specific dose modeling at the Fort Mims site.

Sigma Aldrich Company has taken a risk informed approach to the decommissioning of its facility located at 11543 Fort Mims Drive, Maryland Heights, Missouri. It is our position that the approach presented herein is consistent with guidance in *NUREG 1757 Consolidated Decommissioning Guidance: Decommissioning Process for Materials Licensees Volume 1* and *Consolidated Decommissioning Guidance: Characterization, Survey and Determination of Radiological Criteria Volume 2*. These guidance documents share a philosophy whereby risks are considered together with other factors to better focus the attention and resources of both the licensee and the NRC on the more risk significant aspects of the decommissioning process and on the elements of the facility and the site that will most affect risk to members of the public following decommissioning.

First and foremost in assessing risk is to determine the most appropriate land use designation for the site upon license termination. It is our position that industrial land use is the appropriate land use designation for the site upon license termination and not a resident farmer or urban resident. It is our understanding that the NRC is in agreement with this statement. **Exhibit 1** *Land Use Upon License Termination* provides the basis upon which SAC has made this determination.

The site specific information provided in this response enables one to focus resources on the single most critical potential exposure pathway which is groundwater. Absent a viable groundwater pathway for potential exposure there are no other pathways that present an exposure risk. **Exhibit 2** *Exclusion of the Groundwater Pathway in the Risk Assessment* provides basic documentation for the exclusion of the groundwater pathway in any risk assessment.

Exhibit 3 *Poor Water Quality and Yields in St. Louis County* documents that it has been general knowledge for over 150 years that the groundwater quality and yield for the area (east of the fresh water/saline zone) is poor. **Exhibit 4** *Table No.1 Wells in St. Louis County and the City of St. Louis, Missouri* is taken from the Missouri



Geological Survey and Water Resources document *Underground Waters In St. Louis County and City of St. Louis*. The table contains, in part, well locations to the nearest 10 acres, well depth, capacity in gallons per minute and water quality expressed as Fresh or Saline. **Exhibit 4** also includes Table No. 2 *Chemical Analyses of Well Waters in St. Louis County and St. Louis City* and lists the chemical attributes for 24 of the 89 wells listed in Table 1. All wells located east of the freshwater saline zone where the site is located either are saline and/or yield insignificant quantities of water unsuitable for a resident farmer much less for an industrial land use.

Exhibit 5 *Well Permits and Use Within a One Mile Radius of the SAC Site* is a listing of all well permits issued by the Missouri Department of Natural Resources (MDNR) within a one miles radius of the site. The database record extends back in time for over the past quarter century. None of the well permits listed in the database are for a water well. What is noteworthy is that almost all of the permitted wells are for characterizing that the extensive environmental contamination found in the area is due to industrial disposal activities that were not associated with the SAC operations. All of these wells are located in a zone designated by the MDNR as a brownfield and which the current land use plan states may present a hazard to public health and safety.

The NRC points out that there is no prohibition against drilling a water well at the site. However, the site is within an area designated by the MDNR that prohibits the use of any shallow groundwater in the uppermost unconsolidated aquifer. Any well in the area "shall set no less than 80 feet of casing and extend no less than 30 feet into bedrock and that the 80 foot casing requirements extends to residual weather rock." Consequently, no groundwater found within the first 80 feet of the land surface can be used. Since there is no prohibition against drilling a water well in the area and none have actually been drilled supports the conclusion that groundwater will not be used due to its poor quality, low yield, contamination from other industrial activities or a combination of all of the above.

The NRC stated that they had contacted the MDNR regarding the adequacy of the MDNR database and recommended that we contact the MDNR regarding conducting an area survey to determine if there were any unpermitted water wells in the area. We are not aware of any instance where a licensee and/or permittee have conducted such a survey or where it would be a condition for consideration in a license or permit termination. It is our position that if this is a real concern within the two agencies, then it would be more appropriately handled through one of the State's enforcement groups.

Neither the MDNR nor EPA Region VII have formally classified any of the aquifers in St. Louis County. This includes the groundwater within the St. Louis city limits which has been precluded by city ordinance from being accessed and/or used for any purpose due to widespread environmental contamination. However, the State and the EPA have concurred with the conclusion that groundwater in the area meets the EPA criteria as a Class III groundwater and is discussed in detail in **Exhibit 3**.

SAC has conducted an exhaustive literature and database search on the water quality, yield and use for the St. Louis county area. All scientific documents, data, professional geologic or hydrogeological reports conclude that this area cannot provide a reliable potable water supply of sufficient yield to provide for the minimum needs for a resident much less an industrial or commercial facility.

In summary, it is our position that SAC has provided convincing documentation to eliminate the groundwater exposure pathway from further consideration in dose modeling. Our position is based on site-specific conditions and regional and local hydrogeology.



Please contact me if you have any questions or concerns regarding this matter.

Sincerely,

SIGMA-ALDRICH COMPANY

Thomas & Spencer

Thomas K Spencer Radiation Safety Officer 3500 Dekalb St St. Louis, MO 63118

Phone 314/286-7686 Email thomas.spencer@sial.com



Exhibit 1

Land Use Upon License Termination

Over the past half century land use in the area around the facility has been industrial/commercial and will remain so into the foreseeable future. The City of Maryland Heights considers the location of the facility to be within the Westport Industrial Planning Future Land Use as Manufacturing and Mixed Use Planned Commercial. This comprehensive plan states, in part, that the majority of the properties within this planned area are of a "deteriorated, disorganized condition and some uses (and the operation of uses) in this area may present a **hazard to public health and safety**"(emphasis added).

Specifically, there are numerous sites that are known to have contaminated the environment with heavy metals and volatile organic chemicals including both known and suspected carcinogens. As an example, Chevron Chemical Company is the owner of a site located at 2497 Adie Road, Maryland Heights, MO. The site is a former pesticide and fertilizer formulation plant that operated for over 30 years. This site is approximately 3,000 feet north of the SAC facility. Historical operations resulted in contamination of soil and groundwater with pesticides and arsenic. In addition, fire debris contaminated with pesticides was buried onsite in unlined pits in the 1950's and over two tons of the fungicide Maneb were buried onsite in 1974. Approximately 1,500 feet east of the SAC site is the BFI Missouri Pass Landfill located at 2520 Adie Road. The 72 acre unlined landfill operated for approximately 20 years from 1972 to 1995 and received approximately 12,800,000 cubic yards of waste. The site has been the subject of several lawsuits and there has been offsite contamination of methane gas that has been documented in a September 2008 notification by the facility owner to 30 adjacent landowners and again in February 2010 when an additional 129 new property owners were notified. The MDNR maintains a comprehensive list of these sites in a brownfield registry and Attachment 1 MDNR Brownfield Sites Near the SAC Facility is included as part of this exhibit which lists numerous sites that are near the SAC facility.



Exhibit 2

Exclusion of the Groundwater Pathway in the Risk Assessment

NRC made references regarding the applicability of various sections of Appendix M Section 5.2.1 Ground Water and Surface Water for a Class 5 site with groundwater contamination. For example, under 5.2.1.1 *Is Ground Water Available?* the two criteria listed for the subsistence farmer is that the well is shallow enough that it could be reasonably pumped from a shallow aquifer and used to irrigate a small farm while providing domestic drinking water and to connect to a fish pond and have sufficient yield to sustain the pond. Section 5.2.1.4 *Is Ground Water Suitable for Drinking Water?* compares the quality of the ground water for the subsistence farmer to the EPA primary and secondary drinking water standards without consideration as to whether there is a sufficient amount of drinking water available. The NRC uses the EPA value of a well yielding 150 gallons or greater of water per day as an indicator that an aquifer that could be considered to be a viable drinking water source for a subsistence farmer.

There are multiple criteria for concluding that an aquifer can be used as a drinking water source. The EPA example of 150 gallons per day, for example, assumes that the water is potable and for residential use. There are multiple criteria as to whether the aquifer is a dependable source of water. As an example, a second criterion is whether the aquifer can produces a sufficient quantity of water to meet the requirements for its end use that, in this case, is an industrial setting. It is SAC's opinion that a 150 gallon per day well is unsuitable for industrial/commercial purposes. For example, converting the 150 gallons per day rate to a per minute rate yields approximately 13 ounces per minute, or a volume of water that is just slightly greater than that found in a soda can per minute. Even though a subsistence farmer is not an applicable scenario it is illuminating to make a few calculations based on an average family size of four. In this scenario, the family gets up at approximately the same time in the morning and each one flushes a toilet. An average toilet uses 1.6 gallons of water per flush or 6.4 gallons for four flushes. If water is produced at 13 ounces per minute it would take about 15 minutes to refill the toilet tank once or about one hour for the entire household to use the toilet once in the morning. The average shower takes 8.2 minutes and uses 2.1 gallons per minute of water or 17.2 gallons. A family of four would use 68.8 gallons. A well yielding 13 ounces per minute for 8.2 minutes would produce 0.85 gallons of water; this is significantly less than the 17.2 gallons of water used for an average shower. Under this scenario it would take a family of four 2.75 hours to take a shower after it took them an hour to flush the toilet four times. A subsistence farmer would probably have a cow which can consume up to 30 gallons of water per day and possibly a horse that consumes up to 10 gallons of water per day and would use an unspecified amount of water to irrigate a small farm and provide water for a small pond.

By way of comparison, a 1990 SAC water bill documents that the facility used, on average, 2,940 gallons of water per day. It is readily apparent a well that yields such a small volume of water would never meet the requirements of an industrial facility. In summary, the referenced criteria regarding a resident farmer in Appendix M Section 5.2.1 have no relevance to an industrial site.

An abundant potable water of consistent quality that does not require treatment is readily available from public water systems in St. Louis County. Data from the 2012 Census of Missouri Public Water Systems puts into perspective the availability and historical use of groundwater. The area water



provider, Missouri American Water obtains 100% of its water supply for St. Louis and St. Charles Counties from surface water with a supply capacity of 431 million gallons of water per day. This public water system has been in operation since 1902. The City of St. Louis also obtains 100% of its water supply from surface water and has been in operation since 1831. There are no designated water districts or systems within St. Louis County that use groundwater.

Groundwater has been eliminated as a medium of concern for risk assessment purposes at the nearby St. Louis airport site and other nearby sites as well, for example, the Chicago Heights area (Township 46N, Range 6E, SE1/4 of the NE1/4 of S31). The latter is a 15 acre site located in a mostly residential area. The groundwater has been contaminated with solvents and there is an extensive volatile organic chemical plume. As with the SAC site there is no regulation or ordinance preventing a resident from drilling his own water well in this area. Despite this fact, both the EPA and the MDNR have concluded that the groundwater pathway can be excluded from consideration in a risk assessment due to the readily available municipal water supply.



Exhibit 3

Documentation on Poor Water Quality and Yield

For over 150 years, it has been established that groundwater in the St. Louis area is saline and not fit for public consumption or for industrial use. As an example, there was a June 4, 1865 New York Times article on the St. Louis Belcher sugar refinery that, at the time, was the largest sugar refiner in the United States. The focus of the article was on the deep groundwater well the company had drilled. The well was located next to their refinery in Section 13 of Township 45N and Range 7E. The company drilled the well in the hopes that it provide an alternative to surface water taken from the Mississippi River with its heavy sediment load and provide for all of the process water in their sugar refinery. Construction of the well was begun in 1849. The well was finally completed in 1856 at the then unheard depth of 2,200 feet within and below the St. Peter sandstone formation. The St. Peter aquifer in this area is now known to be confined, under positive pressure and is classified as an artesian aquifer. The water from the well did not require pumping. However, it only produced approximately 75 gallons per minute and did not meet their process needs. Moreover, the water quality from the well was unsuitable for refining sugar and was dumped into the local sewer system. The article described the water quality as follows: "It has a salty taste, and a strong odor of sulphur. In fact, so strong is the sulphur, that the white paint on the building near it has been turned blue." A more quantitative description of the water quality appeared in the August 2008 issue of St. Louis magazine in an article by Bryan Hollerback. The article quoted James Vandike, groundwater section chief with the MDNR, who stated that the dissolved solids concentration was almost 19 times the current recommended maximum and would have made the water salty to the taste. According to Vandike, most people can detect the rotten egg odor from sulfinated water at a concentration of 1 mg/l and stated that "With a concentration of the substance at 14 mg/l, the well's flow undoubtedly reeked – and so, instead of being used to refine sugar was allowed to run into the gutter."

Since that time period there have been numerous publications authored by competent, qualified professional hydrogeologists and geologists that describe in detail the scientific basis for the poor groundwater quality and low yield. A number of those publications are discussed below:

The Water Resources Report 30, *The Water Resources of the St. Louis Area, Missouri* (Miller et al, 1974) states that the groundwater in the St. Louis County area is not a significant potable water resource. The 1974 report stated that 97% of the 1,200 million gallons of water used daily came from the Mississippi, Missouri and Meramec Rivers. Another 2% came from alluvial aquifers associated with the surface water sources and only 1% came from bedrock aquifers associated with limestone, dolomite or the St. Peter formation. The potable groundwater wells were located west of the freshwater/saline groundwater transition zone in the extreme western portion of St. Louis County and the southwest three fourths of Jefferson County. The SAC site is located to the east of the transition zone well within the known saline/low yield aquifer yield zone.

According to the 1986 USGS National Water Summary – Groundwater Quality: Missouri Report, about 40% of the aquifer systems in Missouri contain saline water that is unusable for most purposes and the concentration of dissolved solids, chlorides, sulfates and other constituents in this saline water greatly exceed the national drinking water standards. Detailed geologic maps have been generated that

have identified extensive areas of Missouri that contain saline and sulfinated groundwater including a well-defined transition zone from fresh to the saline waters (zone where the dissolved solids concentration is >1,000 mg/l). Figure 3 of the referenced report is just one example of such a map and shows the extent of the areas where the groundwater is naturally impaired. The SAC site, located in Section 26 of Township 46 North, Range 5 East, is several miles east of this transition zone.

Water Resources Report 46 Groundwater Resources of Missouri (Miller and Vandike, 1997) states "that for an irrigation system, public water supply, or an industry requiring substantial water, any quantity less than several hundred gallons per minute may not be considered significant. In many areas of Missouri, the deep aquifer zones contain water that is of poor quality. Total dissolved solids, a parameter which is most often used to denote water quality, can greatly exceed the 500 mg/L public drinking water standard. Figure 5 is a map of Missouri showing a natural feature known as the freshwater-saline water transition zone. Groundwater contained in deeper aquifer zones south of the transition zone generally contains less than 1,000 mg/L total dissolved solids, and less than 250 mg/L of chloride and sulfate, and is generally potable without treatment. North of the transition zone, groundwater in the same aquifer zones becomes increasingly mineralized and contains excessive total dissolved solids and chloride, and may contain excessive sulfate. Another factor that appears to be related to the existence of the freshwater-saline water transition zone is the presence of hydrogen sulfide gas and higher dissolved radionuclides in groundwater paralleling the transition zone on the freshwater side. Near the transition zone in many areas across Missouri, gross alpha emissions exceed 15 picocuries per liter, and radium 226 and radium 228 activities exceed 5 picocuries per liter, the maximum levels allowed for public drinking water. Although it is possible to treat the water to remove the radionuclides, the added expense of removing them from the water and disposing of the slightly radioactive sludge produced by treatment, often causes the owners of small water systems to look for other sources of water."

Water Resources Report Number 62 Topics in Water Use: Eastern Missouri (Garstang, 2002) provides documentation as to the poor water quality and low yield found in this area. The document was prepared under the direction of M.R. Garstang Director and State Geologist for the Geological Survey and Resource Assessment Division of the Missouri Department of Natural Resources and is considered to be authoritative and prepared by competent, professional hydrogeologists and geologists. The document describes, in part, that the area in question is located in the physiographic dissected till plains province. The report contains a generalized groundwater quality map (Figure 9) that documents that the Maryland Heights area is well to the east of the freshwater-saline groundwater transition zone. The report states "Except for the alluvial groundwater along the major rivers, the northern part of Lincoln and the eastern parts of St. Charles and St. Louis counties groundwater requires extensive treatment to make it potable." The report goes on to state that the rest of the dissected till plain west of the freshwater-saline divide has the Cambrian-Ordovician aquifer underlying it which can provide significant quantities of potable groundwater. The above information is consistent with the generalized groundwater quality map published by the MDNR Division of Geology and Land Survey. This map identifies the production region and aquifer system in the St. Louis County area where SAC's facility is located as Pennsylvanian and Mississippian Limestones and Sandstones and that shallow aquifers only yield 1 - 15 gallons per minute and that high yield aquifers below 400 feet yield mineralized waters.

Further documentation on the poor water quality and low yield is found in Final Volume I: Feasibility

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Study for the St. Louis North County Site and Final Record of Decision for the North St. Louis County Sites by the U.S. Army Corps of Engineers. The two documents confirm the applicability of the general geology and hydrologies discussed in the two water reports and provide detailed information on the hydrostratigraphy for the area. The lithologic logs indicate that the north county site, approximately four miles north of the SAC site, is underlain by the same stratigraphic units found at the downtown St. Louis site near the Mississippi River. There is no technical or scientific basis for not assuming that the same lithology is not found beneath the SAC site. The Feasibility Study concluded, in part, that the upper water-bearing unit, the shallow loess and glaciolacustrine clay and silt units of the Pleistocene Series are "essentially not water yielding (Miller, et al 1974). These are the same units that occur beneath the SAC site. The summary referenced the EPA 150 gallons of water per day criterion for an aquifer and concluded that the purge rates for the shallow monitoring units was 5-50gallons per day at the St. Louis site. The hydraulic conductivities of the material was in the order of 10-6 to 10-8 cm/second and the poor extraction rates due to low hydraulic conductivities provided confirmation that the uppermost water bearing zone did not produce water in sufficient quantities to fit the definition of an aquifer or to serve as a drinking water supply much less for an industrial land use setting. Lithological data documents that a highly impermeable clay aquitard separates the upper groundwater system from underlying groundwater zones and that water movement to a deeper aquifer would take an estimated 1,000 years or longer. The report stated that neither MDNR nor the EPA had formally classified any of the aquifers in the St. Louis Area. In lieu of this classification the USACE developed the rationale with supporting data and documentation for classifying the aquifers as an EPA Class III aquifer not suitable for providing a drinking water source. The Record of Decision concluded that wells placed in the water table and/or shallow aquifer were incapable of maintaining a sustained pumping rate that would be capable of meeting the needs of private residences. The regulatory conclusions and the geotechnical basis was coordinated with EPA Region VII and the MDNR. The EPA Superfund Record of Decision (St. Louis Airport Site) stated "The contaminated shallow groundwater system is not considered to be a potential source of drinking water due to its poor quality and very low yields. There is no known use for groundwater of such poor quality and low yield under any of the current or reasonably anticipated land uses" (emphasis added). Moreover, according to Missouri regulations, any well that is drilled within an Area 1 designation (where the SAC site is located) must be cased off to be water tight throughout the entire depth of unconsolidated material until competent bedrock is reached and then the well must then be cased off a minimum of 30 feet into the competent bedrock.

The Agency for Toxic Substances and Disease Registry (ATSDR) conducted an independent environmental assessment of the superfund site and stated, in part, that "there was no known use of the aquifer within a 3-mile radius of the site. The ATSDR further stated that since the groundwater was not used as a drinking water source in the area it was not considered to be a viable route for human exposure and was excluded from their health assessment.

Further confirmation that the area does not and cannot provide suitable groundwater is the fact that there have been 205 permitted wells drilled within a one mile radius of the site almost all of which were used for monitoring and/or characterization for environmental contamination from sources not associated with the SAC site. **None** of the wells were permitted as a drinking water well. A copy of this report is provided in Exhibit 5 and the data was taken from the publicly available MDNR data base. The one mile radius, when mapped, overlaps the three mile radius of no known groundwater use associated with the St. Louis Airport Superfund site.



City

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Missouri Geological Survey

and

Water

Kesources

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Exhibit 4 Table 1 and Table 2

TABLE NO. 1

WELLS IN ST. LOUIS COUNTY AND THE CITY OF ST. LOUIS, MISSOURI. WELLS COMPLETED IN THE LIMESTONES OF THE MERAMEC GROUP

o.	Owner.	Location. Sec. Twp. R.	Total depth.	Depth to top of Mera- mec.	Water horizon.	Capacity, gallons per minute.	Static water level in feet.	Quality.	Remarks.
1	Lasky	SW ½ NE. ½ 20-45N-5E	220 /	72'	MSL	7 GPM		Fresh.	
2	Dorchlen	SW, ¼ SE, ¼ 23-45N-5E	2007	Start in	MSP	4 GPM		Fresh.	
3	Gysbers	SE. 14 SE. 14 23-45N-5E	154'	Start in	MSP	2.5 GPM	25'	Fresh.	
	Square Deal Oil Co.	NE. 14 SE. 14 3-46-N-5E	365'	84'	MSP	4 GPM	42'	Fresh.	
	Klinefelter	SW. 1/4 NW. 1/4 35-46N-5E	200'	120'	\mathbf{MSL}			Fresh.	
,	Hilmer.	NW. ¼ NW. ¼ 6-43N-6E	140'	Start in	MSP	2 GPM		Fresh.	
7	Prietzel	C-SW, 1/ 11-43N-6E	312'	Start in	MSP	3 GPM		Fresh	Chemical Analysis No. 1.
3	Herman	NE, ¼ NW, ¼ 24-43N-6E	340'	Start in	MSP	3 GPM	70'	Fresh.	
9	Byrne	NE. ½ 8-44N-6E	230 '	Start in	MSP	$1\frac{1}{2}$ GPM		Fresh.	
D	Downey	NW. 14 NW. 14 13-46N-6E.	300 /	205'	MSL	1/2 GPM		Fresh.	
1	Grafe	SE, ¼ SE, ¼ 24-46N-6E	240'	170'	MSL			Fresh.	
2	Heime	NE. ¼ SW. ¼ 26-46N-6E	460 '	205'	MSL, MSP	5 GPM		Fresh	Chemical Analysis No. 2.
3	Fisher.	SE, ¼ SE, ¼ 2-45N-7E	210'	Start in	MSL	30 GPM	25'	Fresh.	
4	Kuetman	SE, 1/4 NE. 1/4 20-47N-7E	550'	225'	MSL, MSP			Fresh.	
5	Cornell	NE. 1/2 NW. 1/2 35-47N-7E.	280'	180'	MSG, MSL	18 GPM	100 '	Fresh	Chemical Analysis No. 3.

MSL-St. Louis formation. MSP-Spergen formation.

WELLS COMPLETED IN THE LIMESTONES OF THE OSAGE GROUP Capacity, Static Location. Total Depth to Water gallons water level Quality. Remarks, Owner. top of horizon. No. depth per Sec. Twp. R. Osage. minute. in feet. 4 GPM Climer.... SE. ¼ NE. ¼ 1-44N-4E. 20525MKB Fresh 16 NW. ¼ SW. ¼ 36-45N-4E. NW. ¼ SW. ¼ 36-44N-5E. NW. ¼ NW. ¼ 5-44N-5E. NW. ¼ SW. ¼ 6-44N-5E. 5 GPM 17 Sandfas. 102'50 MK Fresh. 18 Rowe..... 240 105 мк 3 GPM Fresh. Chemical Analysis No. 4. 19 20 21 Jones. 290 120 MKB Fresh. 218 108' MK 2½ GPM Bliss . . 118/ Fresh SE. ¼ NE. ¼ 24-44N-5E. SW. ¼ SW. ¼ 27-44N-5E 250MK Chemical Analysis No. 5. Wehrenberg... 450 Fresh. $\overline{22}$ 270 40 MKB 5 GPM 6 GPM 70 Fresh. Taume 23 Moder SW. ¼ SE. ¼ 27-44N-5E. SE. ¼ NE. ¼ 9-45N-5E... 41716 165 MKB 200 Fresh. MSP, MK MKB 10 GPM 1 GPM 24 575 405' 160 Fresh Chemical Analysis No. 6. Culver. NW. ¼ NW. ¼ 17-45N-5E. NE. ¼ NW. ¼ 19-45N-5E. SE. ¼ NW. ¼ 23-45N-5E. Gernhardt..... 25 250^{+} 300 55'Fresh. 26 Menkel.... 400 250'MKB 1 GPM Fresh 27MSP. MK Wilber. 340 335/ Fresh. SE, ¼ NW, ¼ 23-45N-5E. NE, ¼ SE, ¼ 32-45N-5E. NE, ¼ NE, ¼ 21-43N-6E. C-NW, ¼ 34-43N-6E. NE, ¼ SW, ¼ 8-45N-6E. NE, ¼ NE, ¼ 7-46N-6E. NW, ½ 79, 46N-6E. 53' 218' MK MK 28 29 Wagoner. 1084 6 GPM 17 Fresh. 7 1/2 GPM 4 GPM 8 GPM Chemical Analysis No. 7. 62 284'Saline. Fredmar No. 1... 30 Fredmar No. 2.... 322 300 ' MK MK 163^{\prime} Saline. Chemical Analysis No. 8. 31 565 100 649 Saline. 775 32 5004 18 GPM Saline MK Mineralized water in Keo-NW, ¼ SW, ¼ 16-46N-6E. 584500 6 GPM Saline. 33 Gnadt.... kuk. Chemical Analysis No. 9. 660' Chemical Analysis No. 10. 595/ MK 25 GPMSaline. 34 410 None 415'35.

TABLE NO, 1-Continued.

MKB-Keokuk-Burlington formations.

MK-Keokuk formation.

MSP-Spergen formation.

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			TABI	Æ NO. 1-	-Continued				
No.	Owner.	Location. Sec. Twp. R.	Total depth.	Depth to top of Trenton.	Water horizon.	Capacity, gallons per minute.	Static water level in feet.	Quality,	Remarks,
44	Kron	SW. ¼ SW. ¼ 12-45N-4E	437 '	420 '	мкв, ок	30 GPM	27'	Saline	Mineralized water in Kimmswick.
45	Willi	SW. ¼ NE. ¼ 21-45N-4E	464'	3951	MKB	7½ GPM			
46	Buehler	SW 14 SW. 14 25-45N-4E	625'	445'	OK, OP	2 GPM	150'	Fresh.	
47	Sutton	NW. 1/4 NE. 1/4 29-45N-4E	369 ½ ′	2874	ОК, О Д	20 GPM	80′	Fresh.	
48	Vitale	SE. ¼ NE. ¼ 31-45N-4E	300'	220	OK	1 GPM	153'	Fresh.	
49	Froesel	SE, ¼ SE, ¼ 32–45N–4E	500'	260'	OK, OD	15 GPM	220'	Fresh.	
50	Valsis	SE. ¼ SW. ¼ 32-45N-4E	3557	2107	OK, OD	12 GPM		Fresh.	
51	Ganahl	NW. ¼ SE. ¼ 45N-4E	610'	310'	OK, OD			Fresh.	
52	Petty	SW. 1/4 SW. 1/4 18-44N-5E	406'	265'	OK, OD			Saline.	
53	Kessler	NE. ¼ SE. ¼ 19-44N-5E	215'	1757	OK			Fresh.	
54	Queeney	NW. ¼ SW. ¼ 29-45N-5E	460'	4007	OK	30 GPM	55'	Saline	Mineralized water in Kimmswick,
55	West Lake	NW, ¼ SW, ¼ 2-46N-5E	915'	875'	oĸ			Fresh	Chemical Analysis No. 12,
56	Desloge	NE, ¼ NE, ¼ 4-47N-6E	1470'	11351				Saline.	
57	Hoffman	SW. ¼ SW. ¼ 3-44N-7E	901'	860 '				Saline	Oil test.
58	McCurdy	NE. 1/4 SE. 1/4 19-44N-7E	950'	788'				Saline	Oil test.
59	Welle-Boettler	C1645N-7E	934'	735'	oĸ			Saline	Also produced oil and gas.
60	Schautz	SW, ¼ SE, ¼ 35–47N–7E	1300 '	1220'	мкв, ок		Flowing	Saline	Chemical Analysis No. 13, Surface Elev. 442.

MKB—Keokuk-Burlington formations, MS—Sulphur Springs formation, OK—Kimmswick formation, OD—Decorah formation, OP—Plattin formation, OJ—Joachim formation,

TABLE NO. 1-Continued. WELLS COMPLETED IN THE ST. PETER SANDSTONE

No.	Owner.	Location. Sec. Twp. R.	Total depth.	Depth to top of St. Peter.	Water horizon.	Capacity, gallons per minute.	Static water level in feet.	Quality.	Remarks.
61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76	Mohler Radforth Larrimore U. S. Government Lang Sherman School Pevely Corley Corley Huber Huber Hessoun Hoska Hotze Arbogast. Reller Kolkschneider Amer. Man. Co	$\begin{array}{llllllllllllllllllllllllllllllllllll$	473' 110' 600' 450' 855' 800' 855' 800' 855' 800' 855' 800' 855' 800' 855' 1200' 1759' 1430' 1430'	323' 60' 550' 350' 575' 380' 190' 726' 785' 855' 860' 1190' 1600' 1360' 1385'	St. P. St. P.	15 GPM 5 GPM 25 GPM 31 GPM 16 50 GPM	150' 250' 140' 174' 100'	Fresh. Fresh. Fresh. Fresh. Fresh. Fresh. Saline Saline Saline Saline Saline Saline Saline Saline	Chemical Analysis No. 13. Chemical Analysis No. 15. Chemical Analysis No. 16. Chemical Analysis No. 17. Chemical Analysis No. 18. Fresh water in "Trenton." Chemical Analysis No. 11. Mineralized water in Kimmswick. Oil test.

St. P.—St. Peter. OK—Kimmswick. OD—Decorah.

Underground Waters in St. Louis County and Lity

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MISSOURI Geological Survey and Water Kesources

TABLE NO. 1-Continued. WELLS COMPLETED IN FORMATIONS BENEATH THE ST. PETER SANDSTONE

No.	Owner.	Location. Sec. Twp. R.	Total depth.	Depth to base of St. Peter.	Water horizon.	Capacity, gallons per minute.	Static water level in feet.	Quality.	Remarks.
77 78 79 80	Kiel Wyman Whitmore Baumhoff	SE. ¼ NW. ¼ 26-44N-3E NE. ¼ SE. ¼ 25-44N-3E NE. ¼ SE. ½ 25-44N-4E SE. ¼ NE. ½ 16-44N-5E	835' 575' 1152' 1287'	265' 200' 600' 670'	St. P., Rbx. J. C. St. P., Rbx. St. P., Rbx.	50 GPM 16 GPM 300 GPM	190' Flowing Flowing	Fresh Fresh Saline Saline	Chemical Analysis No. 19. St. Peter cased off. Surface Elevation, 435'. Surface Elevation, 415'. Chemical Analysis No. 20 and 21.
81 [.] 82	Meramec Oil Co Weil	SW. ½ NE. ½ 17-44N-5E NE. ½ NW. ½ 34-44N-5E	1190' 823'	622' 690'	St. P., Rbx. St. P.	350 GPM 60 GPM	Flowing Flowing	Saline Saline	Surface Elevation, 422'. Surface Elevation, 419'. Chemical Analyses No. 22.
83 84	Manchester Oil Co Lake Ozark	NW. ¼ SW. ¼ 31-45N-5E NE. ¼ SE. ¼ 32-45N-5E	1260' 940' 3882'	785' 900'	St. P., J. C. St. P.		Flowing Flowing	Saline Saline	Surface Elevation, 507'. Surface Elevation, 479'.
86	Marshall	NE. 1/4 NE. 1/4 29-45N-6E	1800'	1240'	St. P., Rbx.		Flowing	Saline	Surface Elevation, 470'.
87 88	Furstenburg Culli	C-23-46N-6E SW. ¼ NE. ¼ 18-47N-6E	3070' 2755'	1755' 1594'	St. P., Rbx.		Flowing	Saline	Surface Elevation, 455'. Chemical Analysis No. 23.
89	Belcher	SW. ¼ SW. ¼ 13-45N-7E	2200'	1640'	St. P.	150 GPM	Flowing	Saline	Surface Elevation, 420' Chemical Analysis No. 24.

St. P.—St. Peter formation. J. C.—Jefferson City formation. Rbx.—Roubidoux formation.

		(R. 7	ROLUF	'S AND	н. м	AUND	ſ, Áns	lysts	. QU.	ANTI	TIES	IN PA	RTS	5 PEI	R M II	LLION.)						
No.	Owner	Location Sec. Twp. R.	Total Suspended Solids	Total Dissolved Solids	Loss on Ignition	Chlorida Radiele (Cl)	Nitrate Radicle (NO3)	Sulphate Radicle (SO4)	Bicarbonate Radicle (HCOa)	Carbonate Radicle (CO3)	Sodium and Potassium as (Na)	Magnesium (Mg)	Iron (Fe)	Silica (SiOa)	Calcium (Ca)	Totål Hardness	Carbonate Hardness	Alkalinity	Precipated Iron	Temporary Rardness	AlsO3	Analyst	Formation Completed In,
				Water	rs froi	m the li	mesto	ones o	f the	Mera	mee Gr	oup, M	lissis	sippia	n								
1 2 3	Prietzel Heime Cornell	C-SW. ¼ 11-43N-6E NE. ¼ SW. ¼ 26-46N-6E NE. ¼ NW. ¼ 35-47N-7E	8.4 	438 532 488	157 137 152	3.5 2.7 2.7	2.4 5.27 3.4	17.5 44.2 10.1	404.2 462 515.7	13.2 19.8 19.8	7.6 148.5 15.9	44 13.2 44.6	.1 .07 .15	8 10.8 12.8	72.5 34.8 93.5	361.7 141.1 416.5	331.4 141.1 416.5	331.4 378.8 422.9	1.01 2.02 4.04	182.5 58.9 246.4	.6 .3 .99	P/ R R	Warsaw. Spergen. St. Louis.
		· · · · · · · · · · · · · · · · · · ·		Wat	ers fr	rom the	limes	tones	of the	e Osag	ge Grou	p, Mis	sissij	ppian									
4 5 6 7 8 9 10	Rowe	NE, ½ SW, ½ 3-44N-5E. SE, ½ NE, ½ 24, 44N-5E. SE, ¼ NE, ½ 24, 44N-5E. SE, ¼ NE, ½ 0-45N-5E. NE, ¼ NE, ¼ 21, -43N-6E. NW, ½ SW, ½ 16-46N-6E. SW, ½ SE, ½ 4-46N-7E.	14.8 26.2 90.6 73.2 11	638 943 508 7971 4883 867 1596	178 107 199 1639 867 202 159	99.7 279.2 7.5 3551.5 2320.9 31.7 99.4	1.02 .68 5.33 1.24	47.7 73.2 53.7 109.6 226.7 175.9 523.6	362 3 381 7 437 8 274 8 325 413 5 490 5	15 1.4 22.5 8.4 50.4 21.6	$\begin{array}{c} 141.2\\ 246.3\\ 66.2\\ 1869.9\\ 1243.1\\ 306.9\\ 532 \end{array}$	27.5 31.2 46.0 224.5 151 1.1 15	.07 .05 .1 .35 .05 .4 .3	5.2 11.2 8.8 6.4 3.6 1.6 3.6	$\begin{array}{r} 42.1\\ 53.7\\ 57.3\\ 330.5\\ 214.6\\ 3.0\\ 21.7\end{array}$	218.0 262.2 331.9 1746.5 1155.6 13.5 115.8	$\begin{array}{c} 218 & 0 \\ 262 & 2 \\ 331 & 9 \\ 225 & 3 \\ 266 & 5 \\ 13 & 5 \\ 115 & 8 \end{array}$	$\begin{array}{c} 297.1\\ 313.0\\ 359\\ 225.3\\ 266.5\\ 257.1\\ 402.2 \end{array}$	1.01 2.02 18.09 18.18 1.01	107.7 122.5 118.5 194.9 224.5	1.93 .26 1.13 .63 2.47	R R R R R R R R R R	Keokuk. Keokuk. Keokuk. Keokuk. Keokuk. Keokuk.
			Wat	ers from	the (Ordovie	ian lin	nesto	ne for	natio	ns abov	e the S	it. Pe	ter sa	ndsto	ne.							
11 12 13	Hessoun West Lake Schautz	SW, ¼ SE, ¼ 27-45N-5E NW, ¼ SW, ¼ 2-46N-5E SW, ¼ SE, ¼ 35-47N-7E	19 28.6	997 459 17456	165 129	355.1 6.2 10022	.48 7.38 .38	89.7 6.4 22.8	179.6 453.9 247	6.9 13.2	224.9 12.1 6151	49.7 41.3 188	.25 4.5	2.4 19.2 4	42 94.3 252	308.8 405.1 1400	147.3 372.2 202.5	147.3 372.2 202.5	3.9	46.1 228.8	.84 .5	R R M	Sample taken when well was in the Joachim. Kimmswick, Kimmswick.

TABLE NO.2 CHEMICAL ANALYSES OF WELL WATERS IN ST. LOUIS COUNTY AND ST. LOUIS CITY.



3050 Spruce Street, St. Louis, MO63103 USA

Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757

									TAI	BLE 1	(O. 2-	-Cont	inued.													4
No.	Owner	I Sec.	Locatio Twp.	R.	Total Suspended Solids	Total Dissolved Solids	Loss on Ignition	Chloride Radicle (Cl)	Nitrate Radicle (NO ₃)	Sulphate Radicle (SO4)	Bicarbonate Radicle (HCO ₃)	Carbonate Radicle (COs)	Sodium and Potassium as (Na)	Magnesium (Mg)	Iron (Fe)	Silica (SiOs)	Calcium (Ca)	Total Hardness	Carbonate Hardness	Alkalinity	Precipated Iron	Temporary Hardness	AlsO2	Analyst	Formation Completed In.	MISSOURI GEOLOG
								W	aters f	from t	he St.	Peter	sandst	one.					_							tcat
14 15 16 17 18	Mohler. U. S. Gov't. Sherman School. Corley. Huber.	SE, ¼ SE, ½ SE, ¼ NE, ⅓ NW, ¼ NW, NE, ¼ NW, SW, ¼ SW,	4 4–43N–3] 4 20–45N– 34 21–44N 34 16–45N 34 36–45N	E 3E I-4E -4E -4E	$13.4\\9\\676.2\\30.4$	400 309 376 429 3890	175 128 33 227 496	5.1 2.7 6.2 11.7 1748.2	1 .48 2 1.98 7 5.98 2 1.86	10.9 21.6 29.6 4.1 288.7	361 265 380 438 294	7 5.6 8 9.4 3 5 2.8 1 11.9	9.4 9.6 14.2 20.6 1046.1	32.1 26.5 9.4 28.6 90.6	.35 .28 .15 .1 .15	$ \begin{array}{r} 13.2 \\ 6.8 \\ 12 \\ 7.2 \\ 8.8 \\ \end{array} $	76.8 54.9 108.2 103.4 195	$323.6 \\ 245.9 \\ 309 \\ 375.4 \\ 859$	296.6 218 309 359.7 241.2	296.6 218 311.8 359.7 241.2	2.86 .99 2.02	200.8 81 285.9 255.7 1.39		R R R R R	St. Peter. St. Peter. St. Peter. St. Peter. St. Feter.	n fianthe
						Wat	ers fr	om the	e St. F	Peter s	andsto	one an	d under	'ying f	orma	tions.							_		·	1111
19 20 21 22 23 24	Kiel. Baumhoff. Baumhoff. Weil. Culli. Belcher.	SE, 14 NW, 1 SE, 14 NE, 1 SE, 14 NE, 1 NE, 14 NW, SW, 14 NE, SW, 14 SW,	4 26–44N 4 16–44N 4 16–44N 4 34–44N 4 34–44N 4 18–47N 4 18–47N	-3E 5E -5E -6E -7E	$\begin{array}{r} 45.6 \\ 85.5 \\ 40.2 \\ 24.2 \\ 25.6 \end{array}$	382 11010.6 9648 9233 4415 11147	$151 \\ 2358 \\ 1582 \\ 533 \\ 629 \\ 1982$	2.3 4448.7 4366 4330.5 2067 5113.2	2.25 .39 .13 .39 .16	$\begin{array}{r} 10.5\\545.9\\562.9\\530.2\\322.6\\614.4\end{array}$	365.1 262.2 249.8 283.6 44.3 266.9	12.2 12.4 7.9 1.3 2.7 10.8	5.8 2422.7 2571.6 2376.1 1319.6 2918.9	29.1 185.7 186.8 191 87.5 209.5	$ \begin{array}{c} 05 \\ .10 \\ .2 \\ .25 \\ .1 \\ .05 \\ \end{array} $	5.6 15.6 8 8.8 .4 10	79.8 440.2 464 452 87 562.6	318.8 1859.8 1925.9 1913.1 576 2265.5	299.4 217.5 204.8 232.6 36.3 218.9	299.4 217.5 204.8 232.6 36.3 218.9	1.01 1.01 3.03 2.02	207.8 191.0 179.4 132.7 7.9 197.4	.33 1.86 .1 .84 .26	R R R R R R R	Roubidoux, Cotter, Roubidoux, Cotter, Potosi, Jefferson City.	17 ULU - 1 ULU

Exhibit 5 Well Permits and Use Within a One Mile Radius of the SAC Site

SIGMA-ALDRICH[®]

3050 Spruce Street, St. Louis, MO63103 USA

Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757

00163184 M	00163183 M	00500772 M	00500773 M	00145000 M 00207376 M	00386479 A	00386478 A	00386480 A	00259412 A	00230919 A	00202604 A	00162321 M	00162320 M	00162319 M	00239736 A 00162318 M	00325304 A	00325056 A	00324024 A	00323272 A	00300906 A	00299906 A	00202368 A	00153815 A 00201411 A	00129391 A	00311277 A	00266294 A 00277680 A	00266160 A	Ref Num We	Report Date: Selected By: Selection: 38 Depth: Total dept Case: Casing dep Yield: Amount of
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SAYLOR	SAYLOR			LA QUINTA INNS SAYLOR										SHARP											VPLAN, SANDWEIS		Last Name	egal De
5092 ABER RD	5092 ABER RD	13570 ST CHARLES ROCK RD	13570 ST CHARLES ROCK RO	PO BOX 2636 5092 ABER RD	2145 SCHUETZ RD	2145 SCHUETZ RD	2145 SCHUETZ RD	635 MARYVILLE CENTER DR	2650 EAST 32ND ST	10900 PAGE RD	11432 BOWLING GREEN DRIVE	533 N NEW BALLAS RD	2500 ADIE RD	635 MARYVILLE CENTER DR	635 MARYVILLE CENTER DR	635 MARYVILLE CENTER DR	12110 CLAYTON ROAD	101 PROSPECT AVENUE	2145 SCHUETZ RD 101 PROSPECT AVENUE	2145 SCHUCTZ RD	C/D GEOTECHNOLOGY INC	368 N MERAMEC AVE C/O GEOTECHNOLOGY INC	GEOTECHNOLOGY INC	Owner Address	scription Re			
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					13.0	12.0	12.0																				d SWL	e - 1 of 7

sigma-aldrich.com

Report D Selected Selection	ate: 11 By: Or 1: 38 42	/08/2012 ne Mile Radius 2 7.8 90 25 17.9 7 traw wull		Legal D	escription Re	port			Page - 2 of 7
Case: Casin Yield: Amou SWL: Static	g cepth int of wat water lev	ter the well can produce (gallons per minut vel; constant level of water in the well	<u>s</u>						
Ref Num	Well T	Type Site Address		Business Last Name	Owner Address		Usage Depth Latitude	Longitude	Elev CaseYield SWL
00163185	×			BROWNING	5092 ABER RD	WILLIAMSBURG	OH MONITCRING 65.0 38 42 6.7	90 24 26.0	
00163186	s			BROWNING SAYLOR	5092 ABER RD	WILLIAMSBURG	OH MONITORING 38.0 38 42 6.7	80 24 26.0	
00315125	s	11911 ADIE RD	MARYLAND HEIGHTS	EMERSON LAMBOLEY	8000 WEST FLORRISANT AVE	FERGUSON	MO MONITCRING 39.0 38 42 7.0	90 26 19.0	
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00500774	ĸ	2520 ADVE RD	MARYLAND	REPUBLIC	13570 ST CHARLES ROCK RD	BRIDGETON	MO GASMONITOR 120.0 38 42 11.	8 90 24 38.5	650
00436102	ĸ	2520 ADIE RD	MARYLAND	REPUBLIC REPUBLIC	1540 LANDFILL RD	DESOTO	IL GASMONITOR 25.0 38 42 122	2 90 25 6.0	
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00500760	ĸ	2520 ADRE RD	MARYLAND	REPUBLIC	13570 ST CHARLES ROCK RD	BRIDGETON	MO GASMONITOR 120.0 38 42 13:	5 90 24 41.1	653
00436101	×.	2520 ADIE RD	MARYLAND	REPUBLIC	1540 LANDFILL RD	DESOTO	IL GASMONITOR 25.0 38 42 13.	5 90 25 6.4	
00500761	s	2520 ADIE RD	MARYLAND	REPUBLIC	13570 ST CHARLES ROCK RD	BRIDGETON	MO GASMONITOR 120.0 38 42 14/	0 90 24 42.1	654
00435100	M	2520 ADIE RD	MARYLAND	REPUBLIC	1540 LANDFILL RD	DESOTO	IL GASMONITOR 25.0 38 42 14.	2 90 25 7.0	
00500763	×	2520 ADIE RD	MARYLAND	REPUBLIC SERVICES INC	13570 ST CHARLES ROCK RD	BRIDGETON	MO GASMONITOR 118.0 38 42 15.	5 90 24 46.4	650
00500762	2	2520 ADIE RD	MARYLAND	REPUBLIC	13570 ST CHARLES ROCK RD	BRIDGETON	MO GASMONITOR 120.0 38 42 15)	6 90 24 45.0	655
00500764	×	2520 ADIE RD	MARYLAND	REPUBLIC	13570 ST CHARLES ROCK RD	BRIDGETON	MO GASMONITOR 115.0 38 42 16/	6 90 24 46.5	647
00434185	A	2331 SCHEUTZ RD	MARYLAND	PRESTWICK FELLER	7701 FORSYTH BLVD	ST LOUIS	MO MONITORING 20.0 38 42 16.	8 90 25 58.5	20.0 12.08
00500775	M	2520 ADIE RD	MARYLAND	REPUBLIC	13570 ST CHARLES ROCK RD	BRIDGETON	MD GASMONITOR 115.0 38 42 17.	190 24 47.3	647
00364344	٨	2331 SCHUETZ RD	MARYLAND	PRESTVICK	7701 FORSYTH BLVD	STLOUIS	MO SOLEORING 20.0 38 42 17.	1 90 25 56.6	
00434187	Þ	2331 SCHEUTZ RD	MARYLAND	PRESTWICK FELLER	7701 FORSYTH BLVD	STLOUIS	MO MONITORING 28.0 38 42 17.	2 90 25 57.0	28.0 10.32
00386584	۶	2331 SCHUETZ RD	MARYLAND	PRESTWICK	7701 FORSYTH BLVD	ST LOUIS	MO MONITORING 28.5 38 42 17;	2 90 26 0.0	28.5 10.5
00388596	۶	2331 SCHUETZ RD	MARYLAND	PRESTWICK	7701 FORSYTH BLVD	ST LOUIS	MO MONITORING 19,8 38 42 17;	3 90 25 58.3	19.8 9.8
00388595	A	2331 SCHUETZ RD	MARYLAND	PRESTWICK	7701 FORSYTH BLVD	ST LOUIS	MO MONITORING 17.2 38 42 17.	3 90 25 58.4	17.2 10.3
00386594	A	2331 SCHUETZ RD	MARYLAND	PRESTWICK	7701 FORSYTH BLVD	STLOUIS	MO MONITORING 17.7 38 42 17.	3 90 25 58.5	17.7 10.6
00386593	>	2331 SCHUETZ RD	MARYLAND	PRESTWICK	7701 FORSYTH BLVD	ST LOUIS	MO MONITORING 26.8 38 42 17.	3 90 25 58.6	26.8 10.8
00386592	۶	2331 SCHUETZ RD	MARYLAND	PRESTWICK	7701 FORSYTH BLVD	ST LOUIS	MO MONITORING 19.8 38 42 17.	3 90 25 58.8	19.8 10.7
00386591	۶	2331 SCHUETZ RD	MARYLAND	PRESTWICK	7701 FORSYTH BLVD	STLOUIS	MO MONITORING 33.0 38 42 17;	3 90 25 58,9	33.0 11.4
00386590	A	2331 SCHUETZ RD	MARYLAND	PRESTVICK	7701 FORSYTH BLVD	ST LOUIS	MO MONITORING 22.2 38 42 17.	6 90 25 0.0	22.2 11.0
00448785	>	2520 ADIE ROAD	HEIGHTS	BFI WASTE SYSTEMS OF	2520 ADIE ROAD	MARYLÂND HEIGHTS	MD SOLEORING 28.0 38 42 17.	6 90 25 6.0	
				AMBRICA, LLC					

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0	25 30	21.0 90	42	G 20.0 38	WO MONITORIN	ST LOUIS N	C/O RYAN HODGER S	DUKE		BALL DR MARYLAND HTS	R	00302421
0	25 30	21.0 90	42	G 20.0 38	WO MONITORIN	TLOUIS N	C/O RYAN HODGER	CONSTRUCTION		BALL DR MARYLAND HTS	N	00302420
5 546	25 18	21,0 90	42	G 20.0 38	NO MONITORIN	ARYLAND N	2500 ADIE RD	MARCHEM MCENTEE	MARYLAND	2500 ADIE ROAD	M	00390848
L'A	25 10	20.9 90	42	G 20.0 38	WO MONITORIN	MARYLAND N	2500 ADIE RD	MARCHEM MCENTEE	MARYLAND	2500 ADIE ROAD	ĸ	00390849
7 20.0 9.43	25 15	20,4 90	42	G 20.0 38	NO MONITORIN	MARYLAND N	2500 ADIE ROAD	MARCHEM			A	00363526
7	25 14	20,4 90	42	G 20.0 38	NO MONITORIN	MARYLAND A	C/O TOM MCENTEE	MARCHEM			K	00267442
6 20.0 8.9	25 12	20.2 90	42	G 20.0 38	WO MONITORIN	MARYLAND N	2500 ADIE ROAD	MARCHEM MARCHEM			>	00363525
9	25 12	20.2 90	42	G 20.0 38	WO MONITORIN	MARYLAND A	C/O TOM MCENTEE	MARCHEM CORPORATION			N	00267441
3 20.0 3.61	25 10	20.2 90	42	G 20.0 38	NO MONITORIN	MARYLAND N	2500 ADIE ROAD	MARCHEM			A	00363528
3	25 15	20.2 90	42	G 20.0 38	NO MONITORIN	ARYLAND N	C/O TOM MCENTEE	MARCHEM			Μ	00267444
0 20.0 9.43	25 16	20.1 90	42	G 20.0 38	WO MONITORIN	AARYLAND N	2500 ADIE ROAD	CORPORATION			>	00363529
0	25 16	20.1 90	42	G 20.0 38	WO MONITORIN	FIGHTS N	C/O TOM MCENTEE	CORPORATION			M	00267445
6	25 10	20.0 90	42	G 25.0 38	WD MONITORIN	AMRYLAND A	G/O TOM MCENTEE	CORPORATION			M	00267443
6 25.0 13.47	25 15	19.9 90	42	G 25.0 38	WD MONITORIN	HARYLAND A	2500 ADIE ROAD	CORPORATION			A	00363527
								NORTH AMERICA	C LINE L			
34.0 11.D	25 9.	18.7 90	42	G 38.5 38	NO MONITORIN	RIDGETON	13570 ST CHARLES ROCK RD E	BFI WASTE	MARYLAND	2520 ADIE RD	Þ	00358602
	26 21	19.0 90	42	3 20.0 38	NO SOLBORING	MARYLAND A	2331 SCHUETZ ROAD	PRESTWICK			>	00462926
9 28.0 12.2	25 58	18,4 90	42	G 28.0 38	NO MONITORIN	ST LOUIS N	7701 FORSYTH BLVD S	PRESTWICK	MARYLAND	2331 SCHUETZ RD	Þ	00386582
8 20.5 9.9	25 58	18,4 90	42	6 20.5 38	NO MONITORIN	TLOUIS N	7701 FORSYTH BLVD S	PRESTWICK	MARYLAND	2331 SCHUETZ RD	A	00386581
0 20.3 12.0	25 24	18,3 90	42	G 20.3 38	NO MONITORIN	TLOUIS N	7701 FORSYTH BLVD S	PRESTWICK	MARYLAND	2331 SCHUETZ RD	Þ	00388583
20.5 10.8	26 1.	18.1 90	42	G 20.5 38	NO MONITORIN	TLOUIS N	7701 FORSYTH BLVD S	PRESTWICK	MARYLAND	2331 SCHUETZ RD	۶	00386587
30.3 11.1	26 1.	17.9 90	42	G 30.3 36	NO MONITORIN	STLOUIS N	7701 FORSYTH BLVD S	PRESTWICK	MARYLAND	2331 SCHUETZ RD	۶	00386568
29.3 11.4	26 1.	17.8 90	42	6 29.3 38	AD MONITORIN	TLOUIS N	7701 FORSYTH BLVD S	PRESTWICK	MARYLAND	2331 SCHUETZ RD	>	00386586
8 66.0 10.5	25 55	17.8 90	42	G 66.0 38	NO MONITORIN	TLOUIS A	7701 FORSYTH BLVD S	PRESTWICK	MARYLAND	2331 SCHUETZ RD	A	00386585
20.5	26 0.	17.7 90	42	G 20.5 38	NO MONITORIN	TLOUIS N	7701 FORSYTH BLVD S	PRESTWICK	MARYLAND	2331 SCHUETZ RD	Þ	00386589
8 12.07	25 50	17.7 90	42	G 66.0 38	NO MONITORIN	TLOUIS N	7701 FORSYTH BLVD S	PRESTWICK	MARYLAND	2331 SCHULTZ ROAD	М	00371748
7	25 58	17.7 90	42	3 16.0 38	NO SOLBORING	ST LOUIS N	1701 FORSYTH BLVD STE 1150 S	PRESTWICK	MARYLAND	2331 SCHUETZ RD	>	00364371
Elev CaseYield SWL	aprilibude	Lo	titude	Depth La	Usage		Owner Address	Business Last Name		Site Address	Well Type	Ref Num
									inute)	well he well can produce (gallions per m constant level of water in the well	depth of the g depth nt of water ti water level; t	Depth: Tota Case: Casin Yield: Amou SWL: Static
Page - 3 of 7						ort	escription Rep	Legal D		/2012 Aile Radius 8 90 25 17.9	ate: 11/08 By: One 1 : 38 42 7	Report D Selected Selection

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500	11,4	8	37.7 90	\$	38	MO MONITORING 28.0	JE FERGUSON	8100 WEST FLORRISANT AVENU	ELECTRIC	MARYLAND	11911 ADIE ROAD	ĸ	84042	002
	0.0	9	96 Z'CC	Ŕ	9P	MO PIEZOMETEK 20.0	ST. LOUIS	2350 MAARET STREET	METROPOLIAN SEVER DISTRICT	HEIGHTS -	NORTHLINE INDUSTRIAL ROAD	8	57784	004
	2	8	00 0 30	5	4	MO DEPOLIETED SO A	CT I CIIIC		DISTRICT			:		20
	6.9	26	34.8 90	40	38	MO PIEZOMETER 20.0	ST. LOUIS	2350 MARKET STREET	METROPOLITAN ST. LOUIS	HEIGHTS	NORTHLINE INDUSTRIAL ROAD	ĸ	57763	0040
	15,8 0,0	38	32.6 90	1010	38	MO SOLBORING 20.0	ALBANY	C/O HAROL LAMBOLEY 109 W JACKSON	VIRDENHOMAN	MARYLAND	11911 ADIE RD MARYLAND HTS 11422 SCHENK RD	Þ≧	94071 12653	002
	15.8	28	32.6 90	88	38	MO MONITORING 21.5 MO MONITORING 34.0	ST LOUIS	C/O HAROL LAMBOLEY	EMERSON		11911 ADIE RD MARYLAND HTS 11911 ADIE RD MARYLAND HTS	K K	94069	002
	15.8 15.8	2222	32.6 90 32.6 90	888	888	MO MONITORING 35.0 MO MONITORING 35.0 MO MONITORING 20.0	ST LOUIS ST LOUIS	C/O HAROL LAMBOLEY C/O HAROL LAMBOLEY C/O HAROL LAMBOLEY	ENERSON		11911 ADIE RD MARYLAND HTS 11911 ADIE RD MARYLAND HTS 11911 ADIE RD MARYLAND HTS	555	94044 94045	002
21.5 13.0	15.9	26	30.4 90	42	38	MO MONITORING 21.5	FERGUSON	8100 W FLORRISANT AVE	EVERSON ELECTRIC CO	MARYLAND	11911 ADIE RD	Α	53309	0035
0.001	58,5	24	28,6 90	42	38	MO MONITORING 100.0	BRIDGETON	13570 ST. CHARLES ROCK RD	REPUBLIC REPUBLIC	MARYLAND	2520 ADVE RD	~	00777	0050
29.0	0.0	25	28.3 90	42	38	MO MONITORING 30.0	BRIDGETON	13570 ST. CHARLES ROCK RD	REPUBLIC	MARYLAND	2520 ADIE RD	*	00778	0050
614	59.1	24	27.5 90	42	36	MO GASMONITOR 80.0	BRIDGETON	13570 ST CHARLES ROCK RD	REPUBLIC	MARYLAND	2520 ADVE RD	м	0767	0050
16.0	4.5	25	27.3 90	42	38	MO MONITORING 16.0	BRIDGETON	13570 ST. CHARLES ROCK RD	REPUBLIC	MARYLAND	2520 AD/E RD	٨	00780	0050
20.0	15	25	26.9 90	42	38	MO MONITORING 20.0	BRIDGETON	13570 ST. CHARLES ROCK RD	REPUBLIC	MARYLAND	2520 ADIE RD	٨	00779	0050
	27.8	25	25.8 90	42	38	OH SOLBORING 25.0	CLEVELAND	2233 WEST 110TH STREET	THE VON GROUP	MARYLAND	2497 ADIE ROAD	Þ	57942	0040
	39.1	25	24,4 90	42	8	MO EXTRACTION 12.0	FERGUSON	C/O HAROLD LAMBOLEY	ELECTRIC COMPANY		11911 ADIE ROAD MARYLAND HEIGH	M	15136	003
	39.1	25	24.4 90	6	뜷	MO EXTRACTION 12.0	FERGUSON	C/O HAROLD LAMBOLEY	ELECTRON		11911 ADIE ROAD MARYLAND HEIGH	м	15135	003
	39.1	25	24.4 90	42	88	MO EXTRACTION 12.0	FERGUSON	C/O HAROLD LAMBOLEY	ELECTRON		11911 ADIE ROAD MARYLAND HEIGH	м	15080	003
	39.1	5	24.4 90	ŝ	8	MO EXTRACTION 12.0	FERGUSON	C/O HAROLD LAMBOLEY	ELECTRIC		11911 ADIE ROAD MARYLAND HEIGH	м	15079	003-
	39.1	2	24.4 90	42	83	MO EXTRACTION 12.0	FERDUSON	C/O HAROLD LAMBOLEY	ELECTRIC		11911 ADIE ROAD MARYLAND HEIGH	м	15078	0037
	39.1	13	24,4 90	42	33	MO EXTRACTION 12.0	FERGUSON	C/O HAROLD LAMBOLEY	ELECTRIC		11911 ADIE ROAD MARYLAND HEIGH	М	15077	003
	39.1	25	24,4 90	42	38	MO EXTRACTION 12.0	FERGUSON	C/O HAROLD LAMBOLEY	ELECTRIC		11911 ADIE ROAD MARYLAND HEIGH	М	15076	003
	39.1	25	24,4 90	42	38	MO EXTRACTION 12.0	FERGUSON	C/O HAROLD LAMBOLEY	ELECTRIC		11911 ADIE ROAD MARYLAND HEIGH	м	15075	1003
	39.1	N	24,4 90	42	33	MO EXTRACTION 12.0	FERGUSON	C/O HAROLD LAMBOLEY	ELECTRIC		11911 ADIE ROAD MARYLAND HEIGH	М	15074	0031
	39.1	25	24,4 90	\$	38	MO EXTRACTION 12.0	FERGUSON	C/O HAROLD LAMBOLEY	SERVICES INC. ELECTRIC COMPARY	HEIGHTS	11511 ADIE ROAD MARYLAND HEIGH	м	15073	0031
Elev CaseYield SWL	6	ngitud	10	ende	h Latit	Usage Dept		Owner Address	Business Last Name		Site Address	Well Type	Num	Ref
										te)	II stant level of water in the well	depth of the wel depth depth depth of water the w	e: Casing d: Amound: Static v	Case SWI
Page - 4 of 7							port	escription Re	Legal D		12 9 Radius	te: 11/08/20 By: One Mile	ected I	Sel

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Report I Selected	ate: 11/08/2 By: One M	2012 ile Radius		-	egal D	escription Re	port						Page - 5 of 7
Case: Casi Yield: Amo	n: JO 42 1.0 il depth of the v ng depth unt of water the	90 23 17.9 well a well can produce (gallons per minute	ð										
Ref Num	Well Type	Site Address		Business	Last Name	Owner Address		Usage Depth	Latito	de	Longh	bunder	Elev CaseVield SWL
00284043	м	11911 ADIE ROAD	MARYLAND	EMERSON		8100 WEST FLORRISANT AVENUE	EFERGUSON	MO MONITORING 56.0	38	ស៊ី	7.7 90 2	6 11	4 457
00266503	A	MARYLAND HEIGHTS MO		PRESTWICK	FELLER	757 S 2ND ST	ST LOUIS	MO MONITORING 20.0	8	12 3	0.0 90 2	5 38.	0 . 15.0
00259578	Þ	11697 FAIRGROVE IND BLVD		PRESTWICK	FELLER	767 S 2ND ST	ST LOUIS	MO SOLEORING 14.0	8	12 3	8.0 90 2	5 46	0
00372476	м	11911 ADIE RD	MARYLAND HEIGHTS	EMERSON ELECTRIC	LAMBOLEY	8100 FLORRISANT AVE	FERGUSON	MO MONITORING 66.3	88	62 12	8.1 90 2	8	9
00372478	×	11911 ADIE RD	MARYLAND HEIGHTS	EMERSON	LAMBOLEY	8100 FLORRISANT AVE	FERGUSON	MO MONITORING 49.0	88	42	8.1 90 2	8 12	0
00372489	м	11911 ADIE RD	MARYLAND	EMERSON	LAMBOLEY	8000 W FLORISSANT AVE	FERGUSON	MO MONITORING 70.0	8	42 2	5.3 90 2	10.	0.80 E
00353318	A	11911 ADIE RD	MARYLAND	EMERSON		8100 W FLORRISANT AVE	FERGUSON	MO SOLEORING 36.0	8	62 2	\$3.90 2	36 11.	5
00260595	s	11688 FAIRGROVE INDUSTRIAL BLV		AFB	BELL	8610 PENNELL DR	STLOUIS	MO MONITORING 33.0	88	42	98.4 90 2	55	0 520
00200596	s	11668 FAIRGROVE INDUSTRIAL BLV		AFB PROPERTIES	BELL	8610 PENNELL DR	STLOUIS	MO MONITORING 30.5	38	42 3	38,4 90 2	45	
00353319	Þ	11911 ADIE RD	MARYLAND	EVERSON		8100 W FLORRISANT AVE	FERGUSON	MO SOLEORING 34.0	36	42 3	95.6 90 2	6 10	8
00503231	⊳	2850 N LINDBERGH	ST ANN	SITE OIL / C/O	YBY	11816 LACKLAND RD	STLOUIS	MO MONITORING 12.0	36	42	12.1 90 2	23	6 12.0
00503232	⊳	2850 N LINDBERGH	ST ANN	SITE OIL / C/O GEOTECHNOLO	NGY	11816 LACKLAND RD	STLOUIS	MO MONITORING 15.0	38	42 4	12.4 90 2	13	A 15.0
00462711	≯	11445 WARNER ROAD	MARYLAND		COURNZIGER	17 GARDEN LANE	MARYLAND	MO SOLECRING 30.0	38	42 4	2,4 90 2	16 16	7
00503230	≻	2850 N LINDBERGH	STANN	SITE OIL / C/O GEOTECHNOLO	YBV	11816 LACKLAND RD	STLOUIS	MO MONITORING 12.0	63	42	12.9 90 2	28	8 12,0
00503238	⊳	2850 N LINDBERGH	ST ANN	SITE OIL / C/O	ЗGY	11816 LACKLAND RD	STLOUIS	MO MONITORING 20.0	38	42	13.5 90 2	29	5 20.8
00503237	≯	2850 N LINDBERGH	ST ANN	SITE OIL / C/O	GΥ	11816 LACKLAND RD	STLOUIS	MO MONITORING 20.0	38	42	43.7 90 2	29	.7 20.0
00122778	ĸ	2423 NORTHLINE IND, MARYLAND		QUEST	ä	2423 NORTHLINE INDUST. BLVD.	MARYLAND	MO MONITORING 15.0	38	42	14.8 90 1	54	3
00412309	A	430 INDUSTRIAL DR	MARYLAND	MALESTY	Ē	13475 LAKEFRONT DR	EARTH CITY	MO SOLECRING 16.0	38	42	46,4 90 2	5 33	6 8.5
00201387	A	11435 DORSETT RD		BELL		128 MILLWELL DRIVE	MARYLAND	MO SOLLBORING 12.0	38	12	18,6 90	23	.0
00103904	м	MARYLAND HEIGHTS		VAGO	CITY OF MARYLAND	212 MILLWELL DRIVE	MARYLAND HEIGHTS	MO MONITORING 30.0	38	12	50,0 90	50	
00023438	ĸ	11600 DORSETT RD MARYLAND			HECHI	250 GREENBAIN DR	ST CHARLES	MO MONITORING 30.0	38	42	90.0 90 2	5 27	0
00023439 00023440 00259574	>₹₹	11600 DORSETT MARYLAND HTS 11600 DORSETT MARYLAND HTS 11640 DORSETT RD MARYLAND HEIG		DEVELOPMENT	HECHT	250 GREENBAIN DR 250 GREENBAIN DR 10629 OLIVE BLVD STE 200	ST CHARLES ST CHARLES ST LOUIS	MO MONITORING 25.0 MO MONITORING 30.0 MO SOLLBORING	38	888	00.0 90 00.0 90 00.0 90	87870 4224	000
00121573	м	11500 ROCK ISLAND CT.MARYLAND		CHEVRON CHEMICAL CO.		11522 ROCK ISLAND CT.	MARYLAND	MO MONITORING 20.0	38	12	50.7 90	41	6 522
00121574	м	11500 ROCK ISLAND, MARYLAND		CHEVRON		11522 ROCK ISLAND CT.	MARYLAND	MO MONITORING 20.0	38	42	50.7 90	41	.6 522

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Selected Selection Depth: Tota Case: Casin Yield: Amou SWL: Static	By: One Mil 1: 38 42 7.8 9 I depth of the we ng depth unt of water the v	e Radius 0 25 17.9 well an produce (gallons per minute) stant lavel of water in the well		Le	igal D	escription K	aport									
Ref Num	Well Type	Site Address		Business L	ast Name	Owner Address			Usage	Dept	Lat	bude	E.	ongitu	8	Elev CaseYlei
00121575	£	HTS 11500 ROCK ISLAND, MARYLAND		CHEMICAL CO. CHEVRON		11522 ROCK ISLAND CT.	HEIGHTS	§	MONITORING	44.0	8	\$	50.7 9	N	41.6	522
00121576	М	HTS 11500 ROCK ISLAND, MARYLAND		CHEVRON CO		11522 ROCK ISLAND CT.	MARYLAND	5	MONITORING	20.0	8	41	50.7 9	25	41.6	526
00124716	A	ŭ		CHEVRON CHEVRON		11522 ROCK ISLAND CT.	MARYLAND	Ň	MONITORING	23.0	8	40	50.7 9	125	41.6	0/22
00163287 00163286 00440109	>==	11544 DORSETT RD	MARYLAND	W NOVA HAMILTON	NEGENER	900 N TUCKER BOULEVARD 900 N TUCKER BOULEVARD 1149 ESSEX	ST LOUIS ST LOUIS MARYLAND	888	MONITORING	25.0	***	888	50.7 9	222	41.6 30.5	5.0
00440104	∢	11544 DORSETT RD	MARYLAND	NOVA HAMILTON		1149 ESSEX	MARYLAND	M	MONITORING	19.5	38	ŧ.	90.9 9	25	29.9	5,0
00440106	×	11544 DORSETT RD	MARYLAND	NOVA HAMILTON		1149 ESSEX	MARYLAND	M	MONITORING	15.0	38	40	51.0 9	13	엌	5.0
00301409	М		HEIGHIS	Ŧ	AMILTON	C/D MARTHA DERCY	MARYLAND	М	MONITORING	30.0	35	42	51.0 9	0 25	0.05	
00301410	М			7	MILTON	C/D MARTHA DEROY	MARYLAND	M	MONITORING	0.06	36	ħ	51.0 9	20	0.00	
00301411	м	11544 DORSETT RD		NOVA HAMILTON D	DERCY	11544 DORSETT ROAD	MARYLAND	MO	MONITORING	23.0	38	42	51.0 9	25	33.0	
00301412	M			-	AMILTON	C/O MARTHA DEROY	MARYLAND	Ø	MONITORING	19.0	36	ß	51.0 9	25	33.0	
00301431	M	11544 DORSETT RD		-	MILTON	11544 DORSETT RD	MARYLAND	M	MONITORING	15.0	38	42	51.0 9	25	33.0	
00301432	м	11544 DORSETT RD		Ŧ	MILTON	11544 DORSETT RD	MARYLAND	MO	MONITORING	25.0	38	£.	51.0 9	25	33.0	
00301433	М	11544 DORSETT RD		T	AMILTON	11544 DORSETT RD	MARYLAND	MO	MONITORING	25.0	36	42	51.0 9	0 25	33.0	
00301434	M	11544 DORSETT RD			MILTON	11544 DORSETT RD	MARYLAND	MO	MONITORING	20.0	38	42	51.0 9	0 25	33.0	
00301435	N	11544 DORSETT RD			MILTON	11544 DORSETT RD	MARYLAND	MO	MONITORING	20.0	38	ħ	51.0 9	0 25	33.0	
00440101	Þ	11544 DORSETT RD	MARYLAND	NOVA HAMILTON		1149 ESSEX	MARYLAND	MO	MONITORING	30.0	38	わ	51.2 9	0 25	29.8	15.0
00440108	A	11544 DORSETT RD	MARYLAND	NOVA HAMILTON		1149 ESSEX	MARYLAND	MO	MONITORING	20.0	38	đ	51.2.9	25	30.5	5,0
00440105	A	11544 DORSETT RD	MARYLAND	NOVA HAMILTON		1149 ESSEX	MARYLAND	MO	MONITORING	25.0	36	Ð	51.6 9	0 25	31.5	10.0
00440102	>	11544 DORSETT RD	MARYLAND	NOVA HAMILTON		1149 ESSEX	MARYLAND	MO	MONITORING	30.0	38	42	51.8 9	0 25	30.3	15.0
00440103	~	11544 DORSETT RD	MARYLAND	NOVA HAMILTON		1149 ESSEX	MARYLAND	MO	MONITORING	23.0	38	ß	51.8 9	0 25	31,5	8.0
00440107	Þ	11544 DORSETT RD	MARYLAND	NOVA HAMILTON		1149 ESSEX	MARYLAND	MO	MONITORING	25.0	38	お	51,9 9	0 25	30.0	10.0
00268640	M	11525 DORSETT RD WARVLAND	nuquina	QUIKTRIP CORP V	NHITE	4705 \$ 129TH EAST AVE	TULSA	R	MONITORING	20.0	38	42	52.0 9	0 25	26.0	500
00268641	М	11525 DORSETT RD MARYLAND		QUIKTRIP DORP V	WHITE	4705 S 129TH EAST AVE	TULSA	R	MONITORING	24.0	36	42	52.0 9	25	26.0	500
00339723	A	1 martine		0	COURNOVER	11812 DORSETT RD	MARYLAND	MO	SOLBORING	16.0	38	42	52.0 9	25	0,63	514
00267862	м	11988 WESTLINE IND DR		WATERWAY GAS V	MILLIAMS	727 GODDARD AVE	CHESTERFIELD	MO	MONITORING	20.0	38	42	52.1 8	25	30.6	
00125861	>			ST. LOUIS CO.		121 S. MERANEC AVE	CLAYTON	NO	MONITORING	16.0	38	42	56,0.9	0 24	55,9	610
00125860 00312112	>>	11520 DORSETT RD MARYLAND		The second secon	TOUNG	3730 ADIE RD. PO BOX 250	ST. ANN ROLLA	MO	UNKNOWN	20.0	38	たた	56,7 9	NN	29.0	590
00105328	M	102 FEE FEE RD, MARYLAND HTS		DIRECTOR OF P	PATTNVLL-RM	NGADINE JIM SIERVO	MARYLAND	MO	MONITORING	15.0	80	42	58.7 9	N	24.8	520
00106329	M	102 FEE FEE RD, MARYLAND HTS		DIRECTOR OF P	ATTINUL-REI	MNATER JIM SIERVO	MARYLAND	MO	MONITORING	14.0	38	42	58.7 8	0	24,8	590
00106330	м	102 FEE FEE RD, MARYLAND HTS		DIRECTOR OF	ATTINULE-RI	MNGTINE JIM SIERVO	MARYLAND	MD	MONITORING	14.0	30	15	-030	2	9.40	100
								100	International States	ALC: NO	-	1	20,1 2	1	0.00	non

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Report Date: 11/08/2012 Selected By: One Mile Radius Selection: 38 42 7.8 90 25 17.9 Depti: Total depth of the well Case: Casing depth Yield: Amount of water the well can produce (gall Wile Static water tawe): constant level of water to SWL: Static water tawe): constant level of water to	Ref Num Well Type Site Address	00118732 H	00132861 A 11515 ADIE RD	00144241 M 11897 FAIRGROVE	00144242 M 11697 FAIRGROUP	00144243 M 11697 FLAGRADE	00152802 A	00161679 M	00161663 M 11697 FAIRGROVE BLVD/MARYL	00161684 M	IN COSTDUCT	00161687 M	00175316 A MARYLAND HEIGH	00175319 A MARYLAND HEIGH	00104489 A MARYLAND HEIGH 00230278 A 11515 ADIE RD MA	00311557 A	00311575 A	00311634 A 11911 ADIE RD MA HEIGHTS		00312517 A 11401 NEW DORSE MARYLAND	00312517 A 11401 NEW DORSE 00325391 A MUELLER LANE &	00312517 A 11481 NEW DORSE 00325391 A MARYLAND 00325392 A MUELLER.LIVE al 00339333 A 2804 FEEFER ROA 00339333 A 2825 WAGNER PLI	00312517 A 11401 NEW DORSE 00325391 A MARYLAND 00325392 A Z806 FEEFEE ROA 00339333 A Z806 FEEFEE ROA 00339535 A T1401 NEW DORSE
ons per minute) the well									20				66	13	IS YLAND HTS			(YLLAND)	TTRD	ALL PARK DR	WRYLAND	TTRD	
Ĕ	Business L	MO STATE HWY	RYKOFF SEXTON	MO ST EMP	MO ST EMP RET	MOSTEMP 1	HOPFMAN	MOSERS	MOSERS	MOSERS	MUSERS	MOGERS	MOSERS	MOSERS	REINHAROT INC	SERVICE		EMERSON ELECTRIC COMPANY	TPI PETROLEUM	ORTH	PENNZOL-QUAKE	TPI PETROLEUM	
egal De	Last Name			MW/3		MINE-1										HAMILTON	HAMILTON				DEBICLD		
escription Re	Owner Address	2620 ADIE RD	1050 WARRENVILLE RD	906 LESLIE BLVD	906 LESUE BLVD	905 LESUE	2619 SALENA	907 WILDWOOD DR	907 WILDWOOD DR	907 WILDWOOD DR	SUL MALTIMOTO DIS	907 WILDWOOD DR	901 LESUIE BLVD	901 LESUE BLVD	12286 COUNTRY MANOR LAVE 9755 PATUXENT WOODS DR	11544 DORSETT RD	11544 DORSETT ROAD	8000 WEST FLORISSANT AVE	C/D ATC ASSOCIATES INC	11211 & 11215 MUELLER LANE	10106 PINE HURST 750 ESTES AVE	DVD ATE: ASSOCIATES INC	CONTRACTOR CONTRACTOR
port		HEIGHT'S MARYLAND HTS	LISLE	JEFFERSON CIT	JEFFERSON CIT	JEFFERSON CIT	ST LOUIS	JEFFERSON CIT	JEFFERSON CIT	JEFFERSON CIT	JEFFERSON CIT	JEFFERSON CIT	JEFFERSON CIT	JEFFERSON CIT	ST LOUIS	MARYLAND	MARYLAND	FERGUSON	ST LOUIS	MMRYLMD	ST LOUIS ELK GROVE	STLOUIS	
	Usage	MO VERTICAL	IL UNKNOWN	OND MONITORING	YMO MONITORING	YND MONITORING	NO UNKNOWN	YNO MONITORING	YMD MONITORING	YMO MONITORING	AND NOVINDARY	YMO MONITORING	YMO MONITORING	YMD MONITORING	MD MONITORING	MO SOLBORING	MO SOLBORING	MO SOLBORING	MO MONITORING	MO SOLEORING	MO SOLBORING	MO MONITORING	
	Depth	165.0	21.0	20.0	41.0	38.0		38.0	15.0	30.0	10.0	150	38.0	40.0	16.0			12.0		30.0	20.0		
	Latt	8	38	38	38	38	38	88	38	88	200	88	38	8 8	38	38	38	50	38	38	88	38	
	Nde	45	43	42	42	42	\$	6.6	43	5.6	35	A.	42	4 4	ñ ñ	42	\$2	\$	5	42	88	2	
		58.7 1	58.7	55.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58,7	58.7	58.7	58.7	58,7	58.7	
	Long	98	98	80 .	1 08	. 06	98	88	83	88	58	88	8	88	8 8	8	8	8	90	90	88	98	
	tude	5d	Di	2	13	22	25	N N	81	5 CF.	20	25	25	25	CK DA	25	25	13	25	28	25	25	
		24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.B	24.8	24.0	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	
Page - 7	Elev CaseYield SWL												535 28.0	535 40.0	14.0				22.0	30.0	16.0	23.0	

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