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2018 FIRST SEMIANNUAL GROUNDWATER DETECTION MONITORING REPORT Genesis Solar Energy Project

Riverside County, California

COC S&W-6

June 26, 2018

Prepared By:

Northstar Environmental Remediation

26225 Enterprise Court

Lake Forest, California 92630

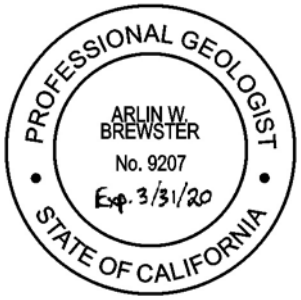
SIGNATURE PAGE

2018 FIRST SEMIANNUAL GROUNDWATER DETECTION MONITORING REPORT

RIVERSIDE COUNTY, CALIFORNIA

PROFESSIONAL STATEMENT

I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.



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Arlin W. Brewster

Professional Geologist 9207

June 26, 2018

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1.0 INTRODUCTION

Northstar Environmental Remediation (Northstar) has prepared this 2018 First Semiannual Groundwater Detection Monitoring Report on behalf of Genesis Solar, LLC (Genesis). This report details groundwater detection monitoring performed in the first half of 2018 at the Genesis Solar Energy Project (GSEP).

The GSEP lies roughly 25 miles west of the city of Blythe, California in eastern Riverside County on lands managed by the Bureau of Land Management (BLM) (**Figure 1**). The GSEP consists of two independent concentrated solar electric generating facilities with a nominal net electrical output of 125 megawatts (MW) each (a total net electrical output of 250 MW).

Northstar conducts groundwater detection monitoring in accordance with Condition of Certification Soil & Water 6 (COC S&W-6) as presented in the California Energy Commission (CEC) Final Decision document dated October 12, 2010 (CEC, 2010). The COC S&W-6 requires compliance with Waste Discharge Requirements (WDR) and Monitoring and Reporting Program (MRP) Board Order No. R7-2013-0005, issued by the California Regional Water Quality Control Board, Colorado River Basin Region (CRWQCB).

1.1 Background

Genesis submitted an updated Plan of Development (POD) for the GSEP in September 2010 (Genesis Solar, LLC 2010). In addition, Genesis filed an Application for Certification (AFC) for the GSEP to the CEC in August 2009 (Genesis Solar, LLC 2009). The CEC issued its Final Decision on the GSEP on October 12, 2010 (CEC, 2010). The BLM issued the Final Environmental Impact Statement (FEIS) for the GSEP for public comment on August 27, 2010.

The GSEP uses dry cooling technology and relies on groundwater as a water source during operation. Three groundwater production wells installed at the GSEP between July and October 2011 are permitted to pump groundwater at an average rate of 202 acre-feet per year (afy) (up to 1,348 afy during construction).

The Final Decision and FEIS discuss the potential impacts associated with the proposed groundwater use by the GSEP. Groundwater drawdown impacts are anticipated to be less than significant, but because the prediction of groundwater level effects by computer modeling entails inherent uncertainty, both the Final Decision and the FEIS adopted COC S&W-2 for the GSEP to monitor groundwater level at the vicinity of the GSEP.

Two evaporation ponds (licensed as Class II Surface Impoundments) located between Solar Fields 1 and 2 accept wastewater generated during GSEP operation (**Figure 3**). Three detection monitoring wells (DM-1, DM-2, and DM-3) were installed, per the Final Decision, along the west, east, and south perimeter of the evaporation ponds in February 2012 (**Figure 4**). Groundwater samples were collected for four quarterly

events prior to GSEP operation to establish baseline conditions. Semiannual sampling will be conducted to comply with the requirements of COC S&W-6 and the WDR and MRP documents.

1.2 Geographic Setting

The GSEP lies between the communities of Blythe and Desert Center, California. Land use is predominantly open space and conservation and wilderness areas occupied by a community of low creosote and bursage vegetation. Chuckwalla and Ironwood State Prisons are located approximately 6 miles southeast of the GSEP.

The GSEP lies on broad, relatively flat topography sloping north to south at elevations between 400 and 370 feet above mean sea level (amsl). The surface is underlain by alluvial deposits derived from the Palen Mountains to the north-northwest, and the McCoy Mountains to the northeast (**Figure 1**).

The deposits immediately adjacent to the mountains have formed alluvial fans from multiple identifiable sources, and multiple fan surfaces have coalesced into a single bajada surface that wraps around each of these mountain fronts. Between the bajada surfaces from each mountain chain lies a broad valley-axial drainage that extends southward between the mountains and drains to the Ford Dry Lake playa, located about 1 mile south of the GSEP facility.

Climatic data collected from Weather Station Blythe Riverside Airport (33.61°N, -114.71°W, at an elevation of about 387 feet amsl) indicate the average maximum temperature in the airport vicinity is approximately 87.8°F (31.0°C). Average rainfall is reported to be approximately 3.83 inches (97.3 mm). Northstar obtained this data from the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information 1981-2010 Normals.

1.3 Hydrogeologic Setting

The GSEP lies within the Chuckwalla Valley Groundwater Basin (Chuckwalla Basin) which has a surface area of 940 mi^2 (2,435 km^2) underlying Chuckwalla Valley. It is bounded upgradient by three groundwater basins including the eastern part of the Orocopia Valley and Pinto Valley Groundwater Basins and the southern part of the Cadiz Valley Groundwater Basin, and downgradient by the Palo Verde Mesa Groundwater Basin (Palo Verde Basin) (**Figure 2**). Groundwater occurs at depths of about 80 to 140 feet below ground surface (bgs) and groundwater flow is generally southeast to eastward, from the Chuckwalla Basin to the Palo Verde Basin (**Figure 2**).

Sources of groundwater recharge to the Chuckwalla Basin includes precipitation, inflow from the Orocopia Valley and Pinto Valley Groundwater Basins, and return flows from agricultural sources and treated wastewater effluent. Groundwater is the only available water resource in Chuckwalla Valley, with extraction to meet local demand the primary source of groundwater outflow. Other minor sources of

outflow include underflow to the Palo Verde Basin and evapotranspiration in portions of Palen Dry Lake (where shallow groundwater is present).

Calculations of the Chuckwalla Basin groundwater budget prior to GSEP operations indicate a stable surplus of 2,600 afy (CEC, 2010). Current operational demand, based on calendar year 2017 extraction data, is approximately 116 afy.

The region of the Chuckwalla Basin occupied by the GSEP and associated groundwater monitoring wells is underlain by four geological units. The shallowest unit is the unconsolidated Holocene-aged Alluvium, consisting of geologically recent lake, river, and wind deposits (DWR, 1963). Beneath the Alluvium is the unconsolidated Pleistocene-aged Pinto Formation, consisting of coarse alluvial fan deposits (known as fanglomerate), interspersed with clays and basalt (DWR, 1963). Beneath the Pinto Formation is the unconsolidated to partially consolidated Pliocene-aged Bouse Formation, consisting of coarse alluvium and fanglomerate deposits (Wilson and Owen-Joyce, 1994). Below the Bouse Formation is bedrock consisting of metamorphic rocks and intrusive igneous basalts (DWR, 1963).

Groundwater in the GSEP monitoring region occurs in two aquifers: the shallower Alluvium aquifer (extending to a maximum approximate depth of 250 feet below ground surface); and, the deeper Bouse Formation aquifer (extending between approximately 250 to 6,500 feet below ground surface) (Wilson and Owen-Joyce, 1994). The Pinto Formation exists only on the eastern fringe of the Chuckwalla Basin and is generally not encountered by the GSEP monitoring wells. Monitoring data indicate a downward vertical hydraulic gradient of groundwater flow from the Alluvium to the Bouse Formation aquifer.

Based on recent monitoring data, the depth to groundwater in the Bouse Formation ranges from approximately 86.61 feet bgs (300.79 feet amsl) in TW-1, located upgradient of the site, to 136.60 feet bgs (255.50 feet amsl) in Well 23a, located downgradient of the site. Perched water exists at the Chuckwalla State Prison but is unlikely to occur within the GSEP boundaries.

1.4 Monitoring Program Objectives

Northstar performs groundwater detection monitoring in accordance with COC S&W-6 as described in the CEC's Final Decision. The primary objectives for the evaporation pond detection as outlined in the MRP are to:

- Establish baseline conditions by conducting four quarters of monitoring prior to discharge of wastewater to the ponds;
- Collect water level elevation data to characterize groundwater flow conditions in the uppermost water-bearing zone beneath the evaporation pond area;
- Collect and evaluate water quality data using approved statistical and other methods to identify potential changes in the existing water quality of the aquifer immediately underlying the evaporation ponds; and,

- Demonstrate compliance with the discharge requirements contained in COC S&W-6 and the WDR for the GSEP.

2.0 EVAPORATION PONDS

2.1 Evaporation Pond Overview

The North and South Evaporation Ponds (sometimes referred to as the West and East ponds, respectively) were designed by Fluor Corp. and are identified on **Figure 3**. Each pond is constructed with multiple layers of containment that drain to a centralized collection trench. The trench slopes away from the centerline of the ponds to the north and south and is equipped with a set of three leakage detection probes in each side. Each pond is also equipped with a pump to return all leaked water back to the pond surface.

2.2 Monitoring Methods

On a semiannual basis, a sample is collected from each of the evaporation ponds and identified as the North Pond and South Pond. Representative water is collected in a clean, dedicated 5-gallon bucket and processed into sample containers inside the containment area. Laboratory samples are submitted to SunStar Laboratories, Inc. (SunStar) of Lake Forest, California. SunStar subcontracts the heat transfer fluid analysis to TestAmerica Laboratories, Inc. (TestAmerica) of Irvine, California. They also subcontract the oxygen-18 and deuterium analysis to Isotech Laboratories, Inc. of Champaign, Illinois. All laboratories are state and federally certified and analyze the samples by the following methods, as detailed in the Final Decision, WDR, and MRP documents:

- Chloride, Sulfate, and Nitrate by EPA Method 300.0;
- Mercury by Standard Method 7470A;
- Total Dissolved Solids by Standard Method 2540C;
- pH by Standard Method 4500H;
- Specific Conductance by Standard Method 2510B;
- Heat Transfer Fluid (HTF) by EPA Method 8015B;
- Heavy Metals by EPA Method 200.7 and 200.8;
- Oil & Grease by EPA Method 1664A; and,
- Oxygen-18 and Deuterium by Isotope Geochemistry.

2.3 Evaporation Pond Sample Results

Analytical data for the evaporation ponds is included in **Table 4** and certified laboratory reports are included in **Appendix B**. In summary:

- The laboratory did not detect copper, iron, antimony, cadmium, chromium, cobalt, lead, mercury, oil & grease, or heat transfer fluid in either pond; and,
- Compound concentrations were generally higher in the South Pond.

3.0 LEAKAGE DETECTION SYSTEM

3.1 Leakage Detection System Overview

A cross-sectional schematic of the leakage detection system is included in **Figure 5**. As shown in the figure, each pond is equipped with a total of six probes (Watermark Model 200SS electrical resistance probes) installed at a distance of 15, 70, and 110 feet from the pond centerline.

The leaked water return pumps are installed on the north side of the North Pond and the south side of the South Pond. Readings from the totalizers on each pump are recorded on a quarterly basis.

3.2 Monitoring Methods

Terminals attached to the probe wire leads are stored in a weatherproof vault at the north and south end of each pond, where resistivity readings can be collected using a Watermark 30-KTCD-NL meter. Values can range from 0-10 centibars (saturated) to 199 centibars (dry). Readings are collected from the probes and the nearby water return pumps on a quarterly basis and summarized in **Table 5**. If the pump totalizers show any signs of increase, or if the probes display values within the saturated range (usually started with probe #1 in the lowest end of the trench), Northstar notifies NextEra operations who then conduct further investigation.

3.3 Monitoring Results

The water return pump totalizers have not increased during the reporting period, and currently read 1,695.66 gallons for the North Pond and 24.21 gallons for the South Pond.

None of the leak detection probes showed signs of water saturation, though several showed signs of humidity in the collection trench, including: North Pond #1W and South Pond #1E and #2E. These probes have shown signs of sensor drift and sensitivity in previous events.

4.0 DETECTION MONITORING WELLS

4.1 Detection Monitoring Well Overview

A total of three detection monitoring wells were installed around the perimeter of the evaporation ponds (**Figure 4**). Detection monitoring wells DM-1, DM-2, and DM-3 were installed to a total depth of 120 feet bgs into the shallow Alluvium aquifer with screened intervals between 100 to 120 feet bgs. **Table 1** provides construction details for the wells. Well DM-1 is located upgradient, west of the ponds. Well DM-2 and DM-3 are located downgradient, east and south of the ponds, respectively.

4.2 Monitoring Methods

Northstar measured the depth to groundwater in each well using a Solinst interface probe. Field staff documented depth to water to the nearest hundredth (0.01) foot below a surveyed measuring mark located on the north side of the top of casing (toc) on a groundwater level measurement form (**Appendix A**). **Table 2** includes the groundwater level measurements and calculated water level elevations. **Figure 4** illustrates the groundwater elevation contours and flow direction.

Each detection monitoring well has a dedicated 1.66-inch diameter Geotech® stainless steel submersible bladder pump and dedicated Teflon-lined tubing with water intakes set at the middle of wetted screen at approximately 115 feet btoc. Field staff collected samples using the low-flow purging method in accordance with the guidelines established in the EPA document *Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures* (Puls and Barcelona, 1996).

Field staff decontaminated reusable/non-dedicated equipment (water level probe and flow-through cell) prior to use at each well. Decontamination of reusable equipment consisted of washing with a laboratory-grade non-phosphate detergent (Liquinox or equivalent) and potable water solution followed by a double rinse with demineralized water.

Field staff measured groundwater parameters with a Horiba U-52 field instrument (Horiba). Staff calibrated the Horiba at the beginning of each day and decontaminated the instrument prior to use and between wells. Measurements of field parameters (pH, electrical conductivity (EC), temperature, turbidity, and oxidation-reduction potential (ORP)) were taken periodically and at the time of sampling as part of the low flow purge method of sampling.

Wells were purged until water quality parameters stabilized over three successive readings (+/- 0.2 for pH, +/- 10% for EC, ORP and turbidity). Northstar staff recorded the sampling methods, volume of water purged, pumping rate, field parameter measurements, and observations of water turbidity and odor on the groundwater sampling field form (**Appendix A**).

After purging and parameter stabilization, the flow-through cell was disconnected so samples could be collected from the pump discharge. Field staff wore new nitrile gloves to collect groundwater samples in clean bottles (preserved as appropriate) provided by the laboratory. Where required, samples were field filtered with a new 0.45-micron filter attached to the end of the discharge tubing. Staff labeled sample containers with the well identification, date, time, sampler, analytical method, and placed them in a chilled ice chest. Northstar delivered the samples under proper chain-of-custody protocol to the laboratory.

Groundwater purged from DM-1, DM-2, and DM-3 was temporarily contained in a sealed 5-gallon bucket and then disposed in the evaporation ponds as directed in the MRP. **Table 3** includes the measured field parameters documented at the end of purging activities.

Laboratory samples are submitted to SunStar Laboratories, Inc. (SunStar) of Lake Forest, California. SunStar subcontracts the heat transfer fluid analysis to TestAmerica Laboratories, Inc. (TestAmerica) of Irvine, California. They also subcontract the oxygen-18 and deuterium analysis to Isotech Laboratories, Inc. of Champaign, Illinois. All laboratories are state and federally certified and analyze the samples by the following methods, as detailed in the Final Decision, WDR, and MRP documents:

- Chloride, Sulfate, and Nitrate by EPA Method 300.0;
- Mercury by Standard Method 7470A;
- Total Dissolved Solids by Standard Method 2540C;
- pH by Standard Method 4500H;
- Specific Conductance by Standard Method 2510B;
- Heat Transfer Fluid (HTF) by EPA Method 8015B;
- Heavy Metals by EPA Method 200.7 and 200.8;
- Oil & Grease by EPA Method 1664A; and,
- Oxygen-18 and Deuterium by Isotope Geochemistry.

The laboratory conducted standard Quality Assurance/Quality Control (QA/QC) to assure analytical accuracy and precision. This included preparation and analysis of method blanks, surrogate spikes, matrix spike/matrix spike duplicate (MS/MSD) pairs and laboratory control samples (LCS), as required, with each analytical batch.

Northstar collects a duplicate sample once per sampling event that is submitted to the laboratory without identifiers that associate the sample with a well, date, or time. During this event, a duplicate sample from well PW-2 was collected for analysis. **Table 4** of the *Groundwater Quality Monitoring Report* (Northstar, 2018) provides a summary of analytical results for the duplicate sample.

In addition to these methods, a set of quality control blank samples is collected and put on hold at the laboratory pending analysis of the groundwater samples. These samples include a field blank and trip blank. The field blank bottle set is filled with demineralized water and set adjacent to the work area with the lids off during the work day and is intended to screen out constituents in ambient air. The trip blank

bottle set is prepared at the laboratory and is sealed throughout the groundwater sampling event. It is stored inside the sample coolers and is intended to screen out constituents in the coolers. The quality control blank samples are only analyzed if there is anomalous data present for the groundwater sampling results.

4.3 Results of Water Level Measurements

Table 2 provides the wellhead reference elevation (toc elevation), depth-to-groundwater, and water level elevations for each detection monitoring well. Depth to groundwater ranged from 104.27 (well DM-3) to 107.45 (well DM-2) feet bgs, and the calculated groundwater elevations range from 283.87 (well DM-2) to 284.39 (well DM-1) feet amsl.

Northstar used groundwater elevation data to generate a potentiometric surface contour map of the uppermost water-bearing zone beneath the evaporation pond (**Figure 4**). The groundwater flow direction and gradient beneath the site were determined based on linear interpolation between contours of equal elevation. Groundwater flow beneath the evaporation ponds was determined to be predominantly in an east direction at a gradient of approximately 0.0007 feet/foot. The groundwater flow direction and gradient are consistent with historical monitoring events. Groundwater flow direction has historically ranged between east-northeast and southeast and the gradient has ranged between 0.0004 and 0.0007 feet/foot.

4.4 Groundwater Flow Velocity

The average horizontal groundwater flow velocity beneath the evaporation ponds was estimated using the following equation:

V = (KhI)/ne

Where:

V = average linear groundwater velocity
Kh = aquifer horizontal hydraulic conductivity
I = average hydraulic gradient (vertical change in groundwater elevation/corresponding horizontal distance), and
ne = effective aquifer porosity.

Each monitoring well is screened from 100-120 feet bgs in fine-grained sand, as detailed in the Detection Monitoring Well Installation Report (WorleyParsons, 2012). The reported hydraulic conductivity for fine-grained sand is approximately 0.03 to 60 feet/day, as stated in scientific references (Domenico and Schwartz, 1990). Based on the characteristics of the shallow Alluvium aquifer in which the detection monitoring wells are screened, this calculation assumes an average hydraulic conductivity value of 15 to 30 feet/day, an effective porosity of 25 percent, and an average gradient of 0.0007 feet/foot, as estimated from **Figure 4**.

Based on these calculations, the average groundwater velocity estimated in the uppermost water-bearing zone beneath the evaporation ponds is approximately 0.042 to 0.084 feet laterally per day, or 15.33 to 30.66 lateral feet per year. Historically, estimates of groundwater flow velocity have ranged from 8.76 to 30.66 lateral feet per year.

4.5 General Chemical Analysis

Table 4 provides a summary of the detection monitoring well groundwater sample analytical results. **Appendix C** contains copies of the laboratory analytical reports for the groundwater samples. Groundwater samples from detection monitoring wells DM-1, DM-2, and DM-3 were analyzed for the parameters listed in Section 4.2. The concentration of detected analytes is generally similar between the detection monitoring wells. Similarity in the concentrations of analytes is expected as the three wells are located within 1,000 feet of each other and are screened at the same depth interval (100-120 feet bgs).

The following is a summary of the groundwater monitoring results for the detection monitoring wells since the beginning of the monitoring program:

- **Chloride** detections have been consistent for all wells and have ranged from 4,400 to 7,130 milligrams per liter (mg/L), averaging 5,049 mg/L.
- **Sulfate** detections have been consistent for all wells and have ranged from 1,600 to 2,770 mg/L, averaging 2,040 mg/L.
- **Nitrate** detections have been consistent for all wells and have ranged from non-detect to 17.5 mg/L, averaging 8.3 mg/L.
- **Total dissolved solid** levels have been consistent for all wells and have ranged from 9,600 to 13,000 mg/L, averaging 11,091 mg/L.
- **pH** levels have been consistent for all wells and have ranged from 7.66 to 7.95 standard units, averaging 7.83 standard units.
- **Specific conductivity** levels have been consistent for all wells and have ranged from 16,000 to 22,000 microsiemens per centimeter (µs/cm), averaging 17,729 µs/cm.
- **Antimony** has not been detected above the reporting limit for all wells.
- **Arsenic** detections have been consistent for all wells and have ranged from 4.7 to 17 µg/L, averaging 9.6 µg/L.
- **Barium** detections have been inconsistent between all wells, averaging 37 µg/L in upgradient well DM-1, 82 µg/L in downgradient well DM-2, and 17 µg/L in downgradient well DM-3.
- **Cadmium** has not been detected above the reporting limit for all wells.
- **Calcium** detections have been consistent for all wells and have ranged from 210 to 470 mg/L, averaging 258 mg/L.
- **Chromium (Total)** detections have been inconsistent because the concentrations are frequently between the MDL and RL. Reportable concentrations have ranged from 3.1 to 5.0 µg/L, averaging 3.9 µg/L.
- **Cobalt** has not been detected above the reporting limit for all wells.

- **Copper** detections have been inconsistent because the concentrations are frequently between the MDL and RL. Reportable concentrations have ranged from 0.025 to 0.027 mg/L, averaging 0.026 mg/L.
- **Lead** has not been detected above the reporting limit for all wells.
- **Mercury** has only been detected once above the reporting limit in upgradient well DM-1 at a concentration of 0.26 µg/L. Mercury has not been detected at or above the reporting limit in wells DM-2 and DM-3.
- **Nickel** has only been detected once above the reporting limit in downgradient well DM-3 at a concentration of 10 µg/L. Nickel has not been detected at or above the reporting limit in wells DM-1 or DM-2.
- **Selenium** detections have been inconsistent because the concentrations are frequently between the MDL and RL. Reportable concentrations have ranged from 3.3 to 6.3 µg/L, averaging 5.0 µg/L.
- **Zinc** detections have been inconsistent because the concentrations are frequently between the MDL and RL. Reportable concentrations have ranged from 4.5 to 9.5 µg/L, averaging 6.6 µg/L.

4.6 Non-Statistical Analysis

In accordance with the MRP Part II.A.5 and Part III.A.2, a non-statistical analysis has been applied to the groundwater analytical results for this sampling event.

The non-statistical analysis requires all detections of the constituents of concern (ie, those defined in Part II.A.4 of the same document) reported above the method detection limit (MDL) in the downgradient wells (DM-2 and DM-3) that do not appear in the upgradient well (DM-1) be identified, and where there are either a) two or more constituents identified in this list from a single downgradient monitoring point, or b) one of the identified constituents in this list exceeds the Practical Quantification Limit (PQL), a release is tentatively indicated.

For the purposes of this report, the PQL is equal to the reporting limit (RL) as identified for each constituent in the laboratory report, which is generally 5 times the MDL. The results of the non-statistical method for this sampling event is as follows:

- Well DM-2: There are no constituents of concern that meet the release detection criteria.
- Well DM-3: There are no constituents of concern that meet the release detection criteria.

4.7 Quality Assurance/Quality Control

As documented in the attached laboratory reports (see **Appendix C**), groundwater samples collected from the evaporation pond detection monitoring wells during this sampling event were received by the laboratory in good condition, within the temperature limits required, and analyzed within the required holding times using the specified methods (with the exception of temperature and pH, which have a 15-minute hold time).

None of the analytes were detected in the laboratory blank samples. MS/MSD and LCS recoveries for each method and analytical batch were within the laboratory's established control limits.

5.0 LAND TREATMENT UNIT SUMMARY

The Land Treatment Unit (LTU) is an onsite bioremediation landfarm utilized for the treatment of soil contaminated with the heat transfer fluid (HTF) Therminol. Soil from all HTF spills is excavated within 48 hours and placed in one of four treatment bays, numbered LTU #1 to 4. The soil is then tested to determine whether it can be effectively treated onsite (under 10,000 mg/kg of HTF) or if it is hazardous and must be treated offsite (above 10,000 mg/kg of HTF). Soil in the LTUs is overturned on a weekly basis by onsite staff to aid in the bioremediation of the soil. A representative composite soil sample is collected from each bay on a quarterly basis and analyzed by EPA Method 8260B for benzene to monitor the progress of remediation. Once the concentration is less than 100 mg/kg of HTF, the soil may be removed from the LTU and staged onsite for later use. Treatment is enhanced by the addition of moisture and fertilizers.

Contaminated soil in all LTUs was overturned on a weekly basis during the first half of the 2018 calendar year, but none has been transferred out of the LTUs.

6.0 ANNUAL SUMMARY

The 2018 Annual Summary will be included in the *2018 Second Semiannual and Annual Groundwater Detection Monitoring Report*, due by January 15, 2019 and produced by Northstar.

7.0 CONCLUSIONS

Based on the available data obtained during this sample event:

- Sample results do not indicate a release at the GSEP to date.
- Available groundwater quality data is generally stable with minor trend fluctuations.
- The non-statistical analysis of the constituents of concern has not identified any potential releases.
- Groundwater flow direction, gradient, and velocity is consistent with historical events.

All data currently indicates compliance with the discharge requirements contained in COC S&W-6 and the WDR for the GSEP.

8.0 REFERENCES

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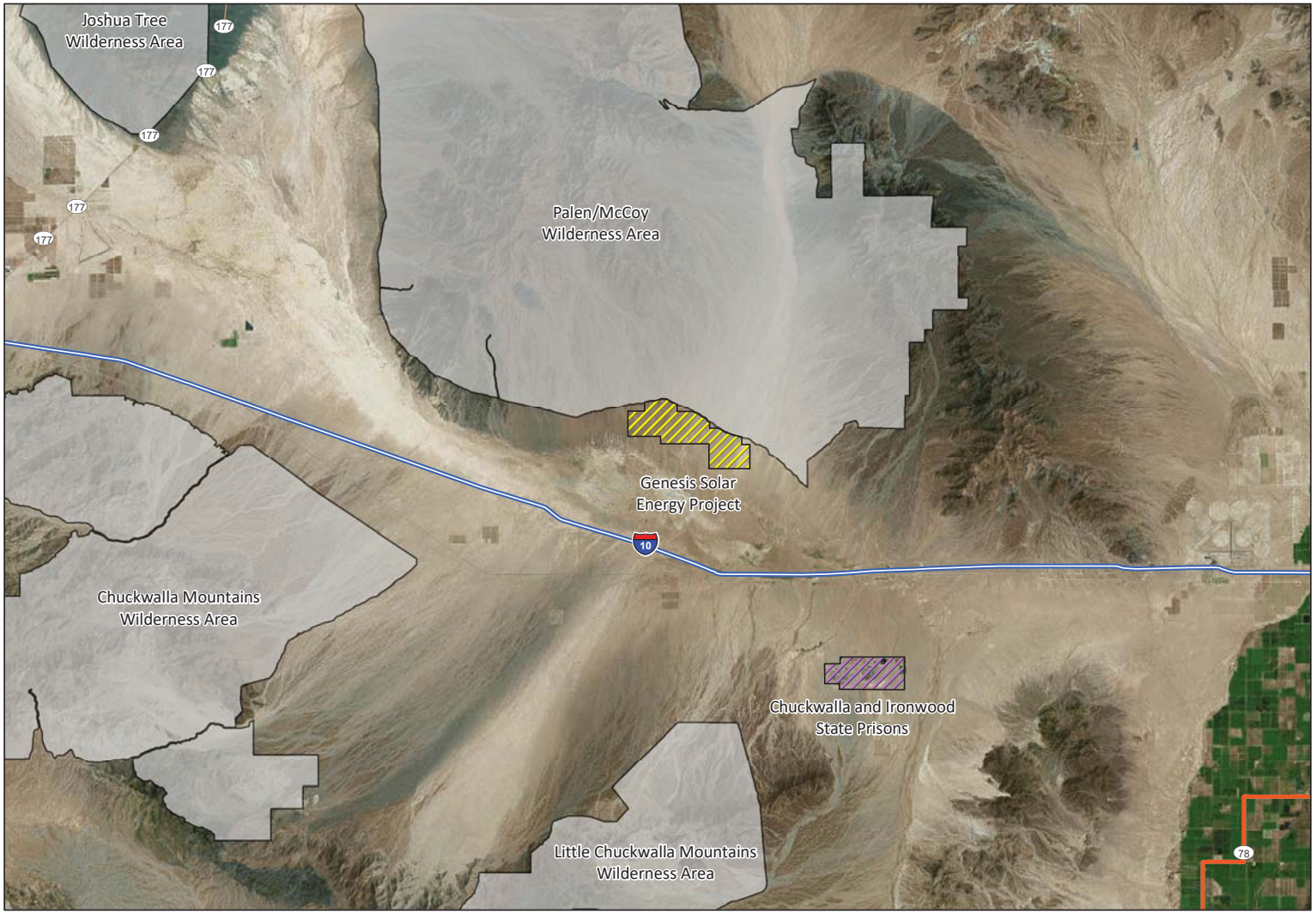
FIGURES



GSEP Footprint
Prisons
Wilderness Area

0 1.25 2.5 5 7.5 10
Miles

N
W E
S

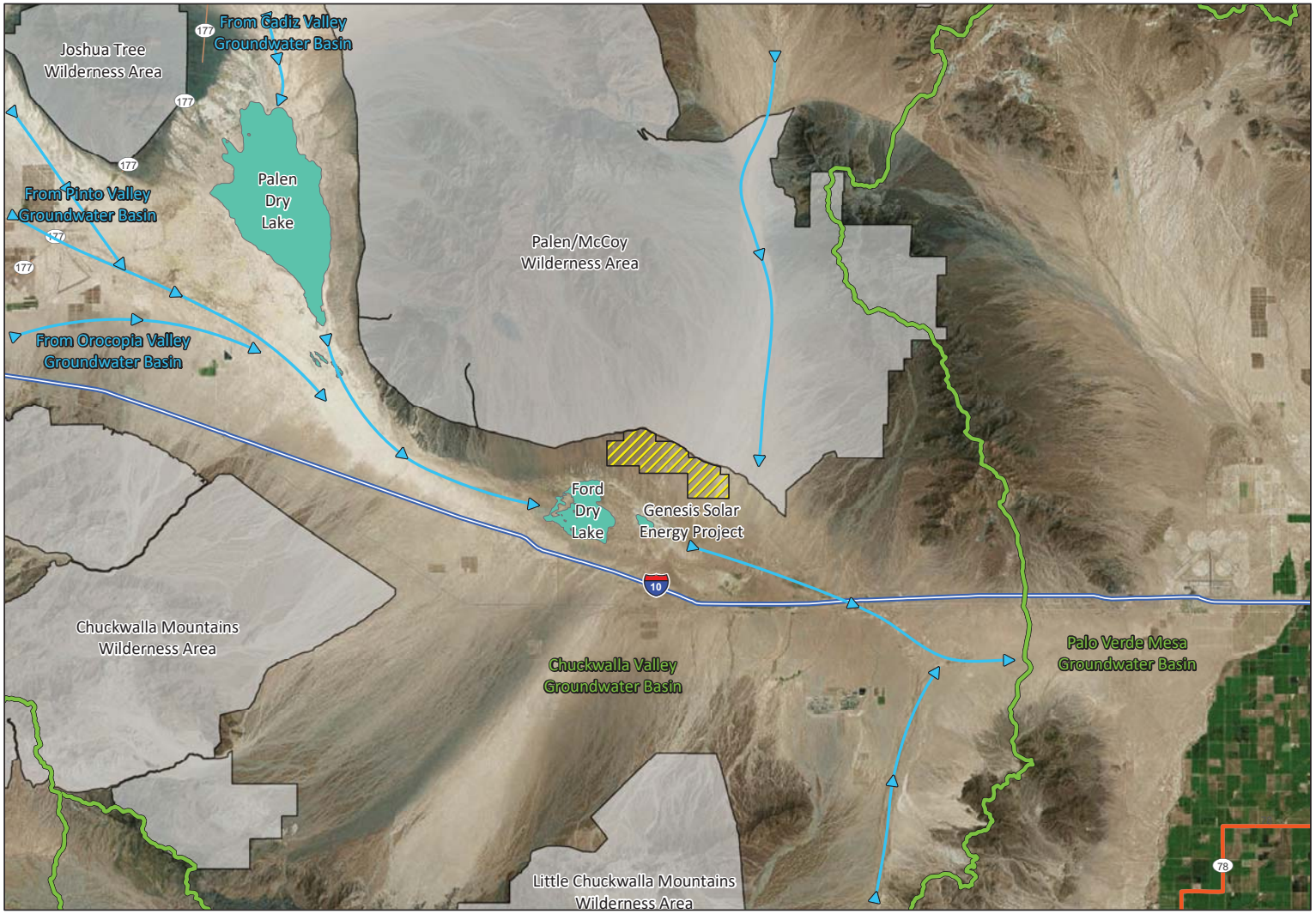
NORTHSTAR
ENVIRONMENTAL REMEDIATION

Northstar Environmental
Remediation
26225 Enterprise Court
Lake Forest, California 92630
(949) 580-2800

Project Number:
196-004-06

Genesis Solar Energy Project
11995 Wiley's Well Road
Blythe, California 92225

Figure 1
Site Vicinity Map



NORTHSTAR
ENVIRONMENTAL REMEDIATION

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26225 Enterprise Court
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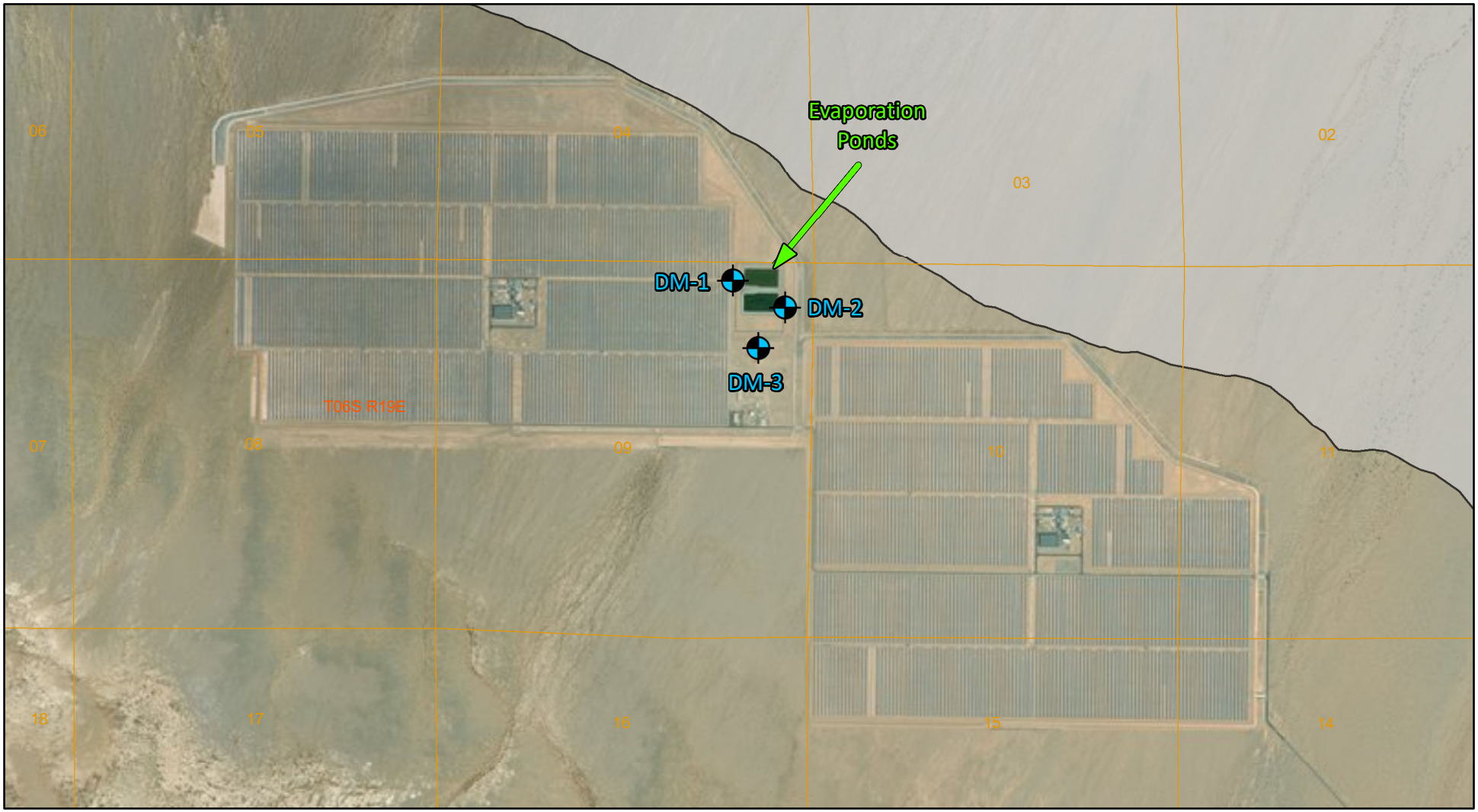
11995 Wiley's Well Road
Blythe, California 92225

Figure 2
Hydrogeologic Setting



Detection Monitoring Well

0 0.25 0.5 1 Miles

N W E S

Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, California 92630
(949) 580-2800

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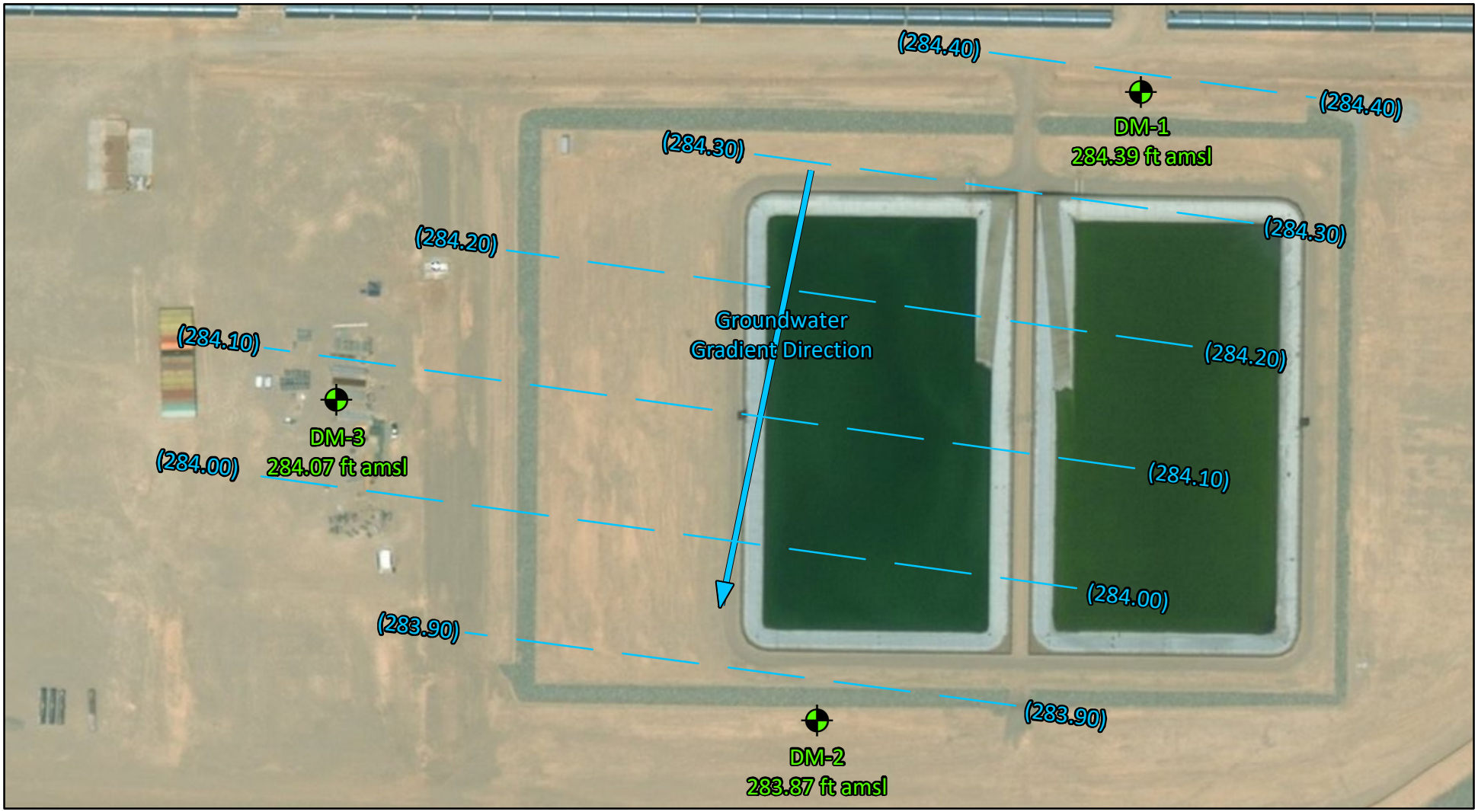
11995 Wiley's Well Road
Blythe, California 92225

Figure 3
Evaporation Pond and Detection Monitoring Well Locations



Detection Monitoring Well

Groundwater Elevation Contour Line

(284.40) Groundwater Elevation in Feet Above Mean Sea Level

Approximate Scale:
1 inch = 180 feet

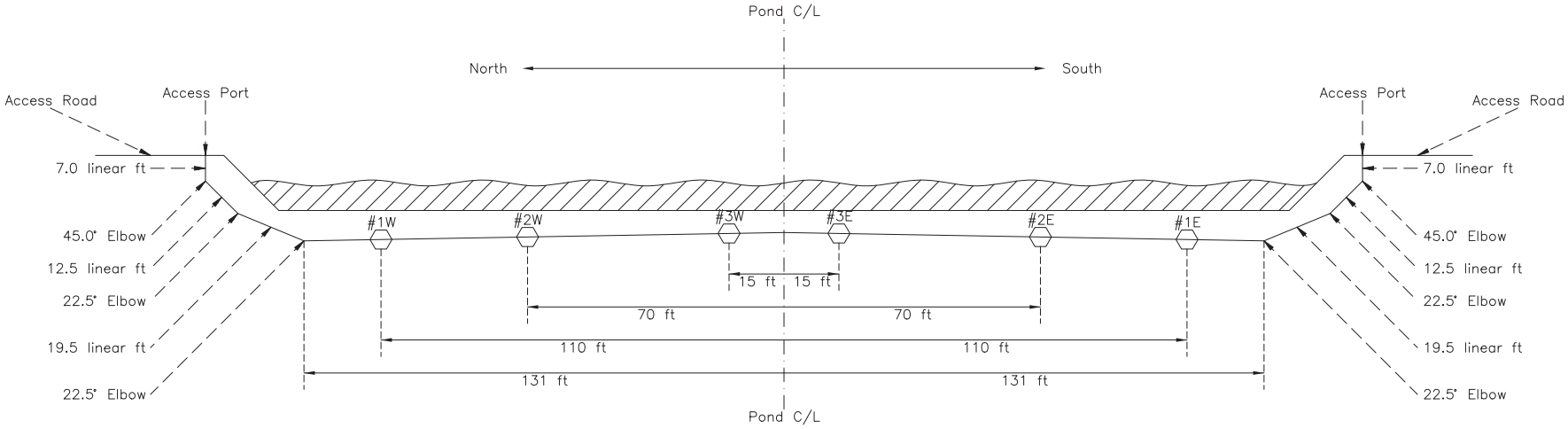
North

Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, California 92630
(949) 580-2800

Project Number: 196-004-06

Genesis Solar Energy Project
11995 Wiley's Well Road
Blythe, California 92225

Figure 4
Groundwater Elevation
Contour Map



NOTE: ALL DIMENSIONS ARE APPROXIMATE AND ARE BASED UPON FIELD OBSERVATIONS.

Notes:
1. Probes installed at #1W through #1E are Irrometer/Watermark Model 200SS Moisture Probes.
2. Access port is 4-inch diameter HDPE pipe.
3. Moisture probes are tied to 1/4-inch diameter braided steel pull-through cable (total length of approximately 340 feet).
4. Probes installed in 4-inch diameter perforated pipe with approximate 1 degree slope away from C/L.
5. Moisture probes furnished with two leads for direct read by Watermark Model 30 KTCD-NL meter.

0 15 30
SCALE: 1 INCH = 30 FEET

PROJECT NAME: GENESIS SOLAR ENERGY PROJECT	PROJECT NUMBER: 196-004-05
PROJECT ADDRESS: 11995 WILEY'S WELL RD, BLYTHE, CA	DRAWN/CHECKED BY: AWB
CONSULTING FIRM: NORTHSTAR ENVIRONMENTAL REMEDIATION	DATE DRAWN: 12/05/2016
FIGURE DESCRIPTION: LEAK DETECTION SYSTEM DETAIL	FIGURE NUMBER: FIGURE 5

TABLES

TABLE 1
DETECTION MONITORING WELL DETAILS
Genesis Solar Energy Project, Riverside County, California

Well ID	Other Name	Owner	Installation Date	Use/Status	Well Casing Diameter (inches)	Approximate Ground Surface Elevation (feet amsl)	Top Of Casing Elevation (feet amsl)	Well Depth (feet bgs)	Screened Interval (feet bgs)	Geologic Unit
WELLS INCLUDED IN THE GROUNDWATER MONITORING PROGRAM										
DM-1	Detection Monitoring Well 1	Genesis Solar, LLC	2/22/2012	Monitoring / Active	4	--	391.49	120	100 to 120	Alluvium
DM-2	Detection Monitoring Well 2	Genesis Solar, LLC	2/21/2012	Monitoring / Active	4	--	391.32	120	100 to 120	Alluvium
DM-3	Detection Monitoring Well 3	Genesis Solar, LLC	2/20/2012	Monitoring / Active	4	--	388.34	120	100 to 120	Alluvium

Notes:
-- = information is not available or unknown
amsl = above mean sea level
bgs = below ground surface

TABLE 2

GROUNDWATER LEVEL MEASUREMENTS

Genesis Solar Energy Project, Riverside County, California

Well ID	Date	Source	Top of Casing Elevation (feet amsl)	Depth to Water (feet below toc)	Groundwater Elevation (feet amsl)	Comments / Use
WELLS INCLUDED IN THE GROUNDWATER LEVEL MONITORING PROGRAM						
DM-1	2/27/2012	WorleyParsons	391.49	106.63	284.86	Monitoring
DM-1	5/24/2012	WorleyParsons	391.49	107.11	284.38	Monitoring
DM-1	7/26/2012	WorleyParsons	391.49	107.10	284.39	Monitoring
DM-1	11/14/2012	WorleyParsons	391.49	108.15	283.34	Monitoring
DM-1	3/29/2013	WorleyParsons	391.49	107.34	284.15	Monitoring
DM-1	6/19/2013	WorleyParsons	391.49	107.19	284.30	Monitoring
DM-1	8/13/2013	WorleyParsons	391.49	107.07	284.42	Monitoring
DM-1	11/12/2013	WorleyParsons	391.49	107.22	284.27	Monitoring
DM-1	2/26/2014	WorleyParsons	391.49	107.13	284.36	Monitoring
DM-1	5/22/2014	Northstar	391.49	107.05	284.44	Monitoring
DM-1	8/8/2014	Northstar	391.49	107.11	284.38	Monitoring
DM-1	12/4/2014	Northstar	391.49	107.03	284.46	Monitoring
DM-1	6/11/2015	Northstar	391.49	107.01	284.48	Monitoring
DM-1	12/10/2015	Northstar	391.49	106.98	284.51	Monitoring
DM-1	6/2/2016	Northstar	391.49	107.18	284.31	Monitoring
DM-1	11/30/2016	Northstar	391.49	107.27	284.22	Monitoring
DM-1	6/1/2017	Northstar	391.49	107.12	284.37	Monitoring
DM-1	12/5/2017	Northstar	391.49	107.38	284.11	Monitoring
DM-1	5/30/2018	Northstar	391.49	107.10	284.39	Monitoring
DM-2	2/27/2012	WorleyParsons	391.32	106.92	284.40	Monitoring
DM-2	5/24/2012	WorleyParsons	391.32	107.37	283.95	Monitoring
DM-2	7/26/2012	WorleyParsons	391.32	107.33	283.99	Monitoring
DM-2	11/14/2012	WorleyParsons	391.32	108.33	282.99	Monitoring
DM-2	3/29/2013	WorleyParsons	391.32	107.59	283.73	Monitoring
DM-2	6/19/2013	WorleyParsons	391.32	107.41	283.91	Monitoring
DM-2	8/13/2013	WorleyParsons	391.32	107.31	284.01	Monitoring
DM-2	11/12/2013	WorleyParsons	391.32	107.63	283.69	Monitoring
DM-2	2/26/2014	WorleyParsons	391.32	107.40	283.92	Monitoring
DM-2	5/22/2014	Northstar	391.32	107.28	284.04	Monitoring
DM-2	8/8/2014	Northstar	391.32	107.28	284.04	Monitoring
DM-2	12/4/2014	Northstar	391.32	107.43	283.89	Monitoring
DM-2	6/11/2015	Northstar	391.32	107.40	283.92	Monitoring
DM-2	12/10/2015	Northstar	391.32	107.30	284.02	Monitoring
DM-2	6/2/2016	Northstar	391.32	107.38	283.94	Monitoring
DM-2	11/30/2016	Northstar	391.32	107.52	283.80	Monitoring
DM-2	6/1/2017	Northstar	391.32	107.47	283.85	Monitoring
DM-2	12/5/2017	Northstar	391.32	107.78	283.54	Monitoring
DM-2	5/30/2018	Northstar	391.32	107.45	283.87	Monitoring
DM-3	2/27/2012	WorleyParsons	388.34	103.85	284.49	Monitoring
DM-3	5/24/2012	WorleyParsons	388.34	104.35	283.99	Monitoring
DM-3	7/26/2012	WorleyParsons	388.34	104.28	284.06	Monitoring
DM-3	11/14/2012	WorleyParsons	388.34	105.25	283.09	Monitoring
DM-3	3/29/2013	WorleyParsons	388.34	104.35	283.99	Monitoring
DM-3	6/19/2013	WorleyParsons	388.34	104.20	284.14	Monitoring
DM-3	8/13/2013	WorleyParsons	388.34	104.31	284.03	Monitoring
DM-3	11/12/2013	WorleyParsons	388.34	104.43	283.91	Monitoring
DM-3	2/26/2014	WorleyParsons	388.34	104.31	284.03	Monitoring
DM-3	5/22/2014	Northstar	388.34	104.20	284.14	Monitoring
DM-3	8/8/2014	Northstar	388.34	104.21	284.13	Monitoring
DM-3	12/4/2014	Northstar	388.34	104.39	283.95	Monitoring
DM-3	6/12/2015	Northstar	388.34	104.18	284.16	Monitoring
DM-3	12/11/2015	Northstar	388.34	103.96	284.38	Monitoring
DM-3	6/3/2016	Northstar	388.34	104.38	283.96	Monitoring
DM-3	12/2/2016	Northstar	388.34	104.28	284.06	Monitoring
DM-3	6/1/2017	Northstar	388.34	104.25	284.09	Monitoring
DM-3	12/5/2017	Northstar	388.34	104.62	283.72	Monitoring
DM-3	5/30/2018	Northstar	388.34	104.27	284.07	Monitoring

Notes:

amsl = above mean sea level

toc = top of casing

TABLE 3
FIELD DATA COLLECTED DURING THE MOST RECENT GROUNDWATER MONITORING EVENT
Genesis Solar Energy Project, Riverside County, California

Well ID	Date	Groundwater Purging			Field Parameters					
		Rate of Groundwater Discharge (mL/min)	Purging Method	Total Volume Purged (mL)	pH	Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/L)	Temperature (C^0)	ORP (mV)
DM-1	5/30/2018	188	Bladder Pump	6,254	8.17	17.8	7.9	4.61	23.14	+66
DM-2	5/30/2018	112	Bladder Pump	5,646	7.71	18.4	78.3	2.52	23.43	+100
DM-3	5/30/2018	121	Bladder Pump	5,718	7.71	18.1	5.3	4.16	23.22	+120

NOTES:
mL = milliliters
mL/min = milliliters per minute
mS/cm = millisiemens per centermeter
NTU = Nephelometric Turbidity Units
DO = Dissolved Oxygen
mg/L = milligrams per liter
^{0}C = degree Celsius
mV = millivolts

TABLE 4
SUMMARY OF LABORATORY ANALYTICAL RESULTS
Genesis Solar Energy Project, Riverside County, California

Well ID	Date Sampled	Sampling Method	Chloride (mg/L)	Sulfate (SO4) (mg/L)	Nitrate (NO3)-N (mg/L)	Calcium (mg/L)	Copper (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Antimony (ug/L)	Arsenic (ug/L)	Barium (ug/L)	Cadmium (ug/L)	Chromium (Total) (ug/L)	Cobalt (ug/L)	Lead (ug/L)	Manganese (ug/L)	Nickel (ug/L)	Selenium (ug/L)	Zinc (ug/L)	Mercury (ug/L)	Total Dissolved Solids (mg/L)	Specific Conductance (us/cm)	pH (std. Units)	Oil & Grease / HEM (mg/L)	HTF† (mg/L)	Deuterium (‰ relative to VSMOW)	Oxygen-18 (‰ relative to VSMOW)
			EPA Method 300.0			EPA Method 200.7						EPA Method 200.8												SM7470A	SM2540C	SM2510B	SM4500H	SM1664A	8015B	Isotope Geochemistry	
DM-1	5/24/2012	Low Flow	4,600	2,000	3.9	250	<0.10	3,800	23.0	<0.40	56	-	-	-	-	-	-	-	-	-	-	-	-	12,000	16,000	7.84	-	-	-65.1	-8.8
DM-1	10/24/2012	Low Flow	5,400	2,300	<1.1	210	<0.010	3,200	20.0	<0.040	58	-	-	-	-	-	-	-	11	-	-	-	-	11,000	18,000	7.83	-	-	-72.1	-8.6
DM-1	5/22/2014	Low Flow	5,300	2,000	-	240	<0.010	3,700	22	<0.040	54	<10	6.2	52	<5.0	<10	<5.0	<5.0	2.5[J]	4.6[J]	3.0[J]	<100	<0.20	11,000	19,000	7.81	<5.0	-	-68.50	-8.51
DM-1	5/22/2014 [1]	Low Flow	5,200	2,000	-	230	<0.010	3,600	22	<0.040	53	<10	5.6	50	<5.0	<10	<5.0	<5.0	<5.0	3.9[J]	3.1[J]	<100	<0.20	11,000	19,000	7.74	<5.3	-	-69.47	-8.74
DM-1	12/4/2014	Low Flow	4,800	1,700	2.9	230	<0.050	3,600	21	<0.20	57	<10	7.7	50	<5.0	<10	<5.0	<5.0	<5.0	9.2[J]	<10	25[J]	0.15[J]	11,000	19,000	7.92	<4.7	<0.094	N/A[2]	N/A[2]
DM-1	6/11/2015	Low Flow	4,600	2,000	3.7[J]	230	<0.10	3,600	21	<0.40	52	<10	3.8[J]	36	<5.0	2.9[J]	<5.0	<5.0	3.6[J]	6.3[J]	3.6[J]	<100	0.26	10,000	19,000	7.81	<4.7	<0.10	-69.2	-8.47
DM-1	12/10/2015	Low Flow	5,300	2,100	4.9[J]	260	<0.010	3,700	22	<0.040	57	<10	5.6	38	<5.0	<10	<5.0	<5.0	<5.0	<10	5.2[J]	<100	<0.20	12,000	19,000	7.79	<5.0	<0.094	-70.3	-8.57
DM-1	6/2/2016	Low Flow	4,700	1,800	7.8	230	<0.10	3,800	18	<0.40	57	<2.0	5.1	31	<1.0	1.9[J]	<1.0	<1.0	0.99[J]	1.1[J]	3.3	2.5[J]	<0.20	11,000	20,000	7.87	<4.7	<0.094	-69.87	-8.83
DM-1	11/30/2016	Low Flow	5,200	2,000	<5.5	230	<0.010	3,700	23	<0.040	59	<20	6.7[J]	31	<10	<20	<10	<10	<10	<10	13[J]	<200	<0.20	11,000	17,000	7.8	<4.7	<0.093	-70.70	-8.68
DM-1	6/1/2017	Low Flow	4,600	1,900	4.2[J]	250	<0.10	4,100	21	<1.0	62	<10	4.8[J]	28	<5.0	5.9[J]	<5.0	<5.0	<5.0	7.6[J]	6.9[J]	<100	<0.20	11,000	16,000	7.9	<5.1	<0.094	-70.30	-8.57
DM-1	12/5/2017	Low Flow	7,130	2,770	12.8	230	0.025	1,100	30	<1.0	59	<1.0	6.2	28	<2.5	3.1	<2.5	<2.5	-	<2.5	5.1	6.6	<0.50	10,000	17,200	7.8	<5.0	<0.10	-69.14	-8.90
DM-1	5/30/2018	Low Flow	5,190	2,030	14.7	270	0.096[J]	5,200	63	0.78[J]	64	<0.50	5.0	30	<0.50	<5.0	<0.50	<5.0	-	<5.0	5.9	9.5	<0.50	11,000	17,300	7.9	<5.0	<0.10	-71.10	-8.57
DM-2	5/24/2012	Low Flow	4,500	2,000	2.9	290	<0.10	3,500	25.0	<0.40	59	-	-	-	-	-	-	-	-	-	-	-	-	13,000	16,000	7.80	-	-	-71.7	-8.8
DM-2	10/23/2012	Low Flow	4,800	2,000	<1.1	470	<0.010	2,600	27.0	<0.040	54	-	-	-	-	-	-	-	110	-	-	-	-	9,900	16,000	7.72	-	-	-70.9	-8.9
DM-2	5/22/2014	Low Flow	5,100	2,000	-	320	<0.020	3,500	23	0.022[J]	54	<10	4.7[J]	97	<5.0	<10	<5.0	<5.0	59	4.1[J]	3.3[J]	<100	<0.20	11,000	18,000	7.79	<5.1	-	-69.95	-8.72
DM-2	12/4/2014	Low Flow	4,400	1,600	3.0	300	<0.050	3,100	20	0.082[J]	55	<10	5.7	140	<5.0	<10	<5.0	<5.0	90	8.4[J]	<10	<100	<0.20	9,900	17,000	7.90	<4.7	<0.095	N/A[2]	N/A[2]
DM-2	6/11/2015	Low Flow	4,500	2,000	3.8[J]	290	<0.10	3,500	22	<0.40	55	<10	4.1[J]	110	<5.0	2.9[J]	<5.0	<5.0	40	4.9[J]	<10	<100	<0.20	9,600	18,000	7.92	<4.7	<0.10	-68.2	-8.52
DM-2	12/10/2015	Low Flow	5,400	2,200	<5.5	290	<0.010	3,600	21	0.062	61	<10	5.9	85	<5.0	<10	<5.0	<5.0	88	<10	5.5[J]	<100	<0.20	12,000	18,000	7.85	<5.0	<0.096	-69.4	-8.43
DM-2	6/2/2016	Low Flow	4,800	1,900	8.0	280	<0.10	3,800	20	0.27[J]	60	0.51[J]	4.7	62	<1.0	1.5[J]	<1.0	<1.0	62	1.1[J]	3.5	<20	<0.20	12,000	22,000	7.95	<4.9	<0.097	-69.53	-8.63
DM-2	11/30/2016	Low Flow	5,300	2,200	2.8[J]	290	<0.010	4,200	28	<0.040	61	<20	5.9[J]	56	<10	<20	<10	<10	40	<20	18[J]	<200	<0.20	11,000	17,000	7.8	<4.7	<0.097	-70.20	-8.37
DM-2	6/1/2017	Low Flow	4,800	1,900	3.1[J]	280	<0.10	4,100	21	<1.0	62	<10	4.4[J]	52	<5.0	<10	<5.0	<5.0	17	5.2[J]	5.6[J]	<100	<0.20	12,000	16,000	7.9	<5.2	<0.097	-70.10	-8.51
DM-2	12/5/2017	Low Flow	4,930	1,960	13.4	250	<0.025	1,400	34	<1.0	62	<1.0	5.5	69	<2.5	3.7	<2.5	<2.5	-	<2.5	5.7	4.5	<0.50	11,000	17,200	7.8	<5.0	<0.10	-67.66	-8.63
DM-2	5/30/2018	Low Flow	6,000	2,280	17.5	300	0.11[J]	4,800	68	<10	67	<5.0	5.1	51	<0.50	<5.0	<0.50	<0.50	-	<0.50	6.3	<5.0	<0.50	9,900	17,000	7.9	<5.0	<0.11	-69.20	-8.39
DM-3	5/24/2012	Low Flow	4,600	2,000	<2.2	220	<0.10	3,500	20.0	<0.40	51	-	-	-	-	-	-	-	-	-	-	-	-	12,000	16,000	7.83	-	-	-71.4	-8.9
DM-3	10/23/2012	Low Flow	5,100	2,100	<2.2	210	<0.010	3,000	20.0	<0.040	52	-	-	-	-	-	-	-	<1.0	-	-	-	-	11,000	18,000	7.83	-	-	-72.6	-8.7
DM-3	5/22/2014	Low Flow	5,400	2,100	-	230	<0.010	3,600	21	<0.040	51	<10	13	18	<5.0	<10	<5.0	<5.0	<5.0	10	<10	<100	<0.20	11,000	19,000	7.66	<4.9	-	-68.86	-8.52
DM-3	12/5/2014	Low Flow	4,900	1,800	1.8[J]	230	<0.050	3,600	20	<0.20	56	<10	16	18	<5.0	<10	<5.0	<5.0	<5.0	9.6[J]	<10	<100	<0.20	11,000	18,000	7.82	<4.7	<0.099	N/A[2]	N/A[2]
DM-3	6/12/2015	Low Flow	4,400	1,900	<5.5	220	<0.10	3,600	18	<0.40	50	<10	14	17	<5.0	<10	<5.0	<5.0	<5.0	4.5[J]	<10	<100	<0.20	9,800	18,000	7.75	<4.9	<0.10	-69.6	-8.90
DM-3	12/11/2015	Low Flow	5,100	2,200	<5.5	250	0.0057[J]	3,500	19	<0.040	51	<10	17	21	<5.0	<10	<5.0	<5.0	<5.0	<10	3.1[J]	<100	<0.20	11,000	18,000	7.79	<5.0	<0.094	-70.6	-8.73
DM-3	6/3/2016	Low Flow	4,700	1,900	7.1	220	<0.10	3,700	17	<0.40	53	<2.0	14	16	<1.0	0.66[J]	<1.0	<1.0	0.64[J]	0.88[J]	1.0[J]	5.1[J]	<0.20	11,000	20,000	7.86	<4.7	<0.093	-69.29	-8.75
DM-3	12/2/2016	Low Flow	4,900	2,100	<5.5	240	0.0052[J]	4,100	23	<0.040	56	<10	16	18	<5.0	<10	<5.0	<5.0	<5.0	<10	5.6[J]	<100	<0.20	11,000	17,000	7.8	<4.8	<0.097	-72.20	-8.75
DM-3	6/1/2017	Low Flow	4,800	2,000	<5.5	240	<0.10	3,900	19	<1.0	55	<10	15	18	<5.0	<10	<5.0	<5.0	<5.0	3.9[J]	2.7[J]	<100	<0.20	11,000	16,000	7.9	<5.1	<0.095	-70.80	-8.71
DM-3	12/5/2017	Low Flow	4,880	2,020	2.77	230	0.027	1,200	31	0.073[J]	59	<2.5	15	15	<2.5	<2.5	<2.5	<2.5	-	<2.5	<2.5	5.6	<0.50	13,000	17,000	7.8	<5.0	<0.10	-69.57	-8.87
DM-3	5/30/2018	Low Flow	6,350	2,600	10.7	260	0.11[J]	4,100	61	<10	61	<0.50	14	15	<0.50	<5.0	<0.50	<0.50	-	<0.50	<5.0	<5.0	<0.50	12,000	17,100	7.9	<5.0	<0.11	-70.60	-8.67
North Pond	6/1/2018	Composite	61,700	21,000	0.870	230	<0.015	12,000	430	<0.35	4.6[J]	<10	470	230	<10	<0.50	<10	<0.50	-	25	<25	62	<0.50	120,000	148,000	9.4	<1.40	<0.095	N/A	N/A
South Pond	6/1/2018	Composite	152,000	59,500	22.2	27	<0.015	17,000	1,100	<0.35	17	<10	1,100	85	<25	<10	<10	<0.50	-	46	43	79	<0.50	310,000	218,000	8.3	<1.40	<0.090	N/A	N/A

NOTES:
mg/L = milligrams per liter
ug/L = micrograms per liter
uS/cm = microsiemens per centimeter
‰ = parts per thousand
VSMOW = Vienna Standard Mean Ocean Water
< = not detected at or above the indicated reporting limit
- = information is unknown / not applicable / not analyzed
J - Result is less than the reporting limit but greater than or equal to the method detection limit, thus the concentration is an approximate value.
† - Heat Transfer Fluid (HTF) is characterized by the analytes 1,1'-oxybis-benzene and 1,1'-biphenyl.
1 - Duplicate sample
2 - Analytical results not available at time of reporting due to laboratory equipment failure.
Analytical data shaded grey is a monitored Contaminant of Concern as defined in the Waste Discharge Requirements, Condition 79, Page 16

TABLE 5

SUMMARY OF LEAKAGE DETECTION SYSTEM DATA

Genesis Solar Energy Project, Riverside County, California

	Sensor Readings[1]														
	North Pond							South Pond							
Date of Reading	#1W	#2W	#3W	#1E	#2E	#3E	Totalizer	#1W	#2W	#3W	#1E	#2E	#3E	Totalizer	Comments
1st Qtr 2014	199	199	199	199	199	199	-	199	199	199	199	199	199	-	All probes are dry
2nd Qtr 2014	199	199	199	199	199	199	-	199	199	199	199	199	199	-	
3rd Qtr 2014	199	199	199	199	199	199	-	199	199	199	199	199	199	-	
12/05/2014	199	199	199	199	199	199	-	199	199	199	199	199	199	-	
03/26/2015	199	199	199	199	199	199	-	199	199	199	199	199	199	-	
06/12/2015	133	199	199	199	199	199	-	199	199	199	199	199	199	-	
09/03/2015	78	199	199	199	199	199	-	199	199	199	199	199	199	-	
09/15/2015	67	199	199	199	199	199	-	199	199	199	199	199	199	-	
12/10/2015	0	75	199	199	199	199	-	199	199	199	199	199	199	-	Sump pumps turned on - no water
03/01/2016	6	101	199	199	199	199	-	199	199	199	199	199	199	-	
06/02/2016	4	80	199	199	199	199	-	199	199	199	199	199	199	-	
09/01/2016	0	42	146	199	175	105	-	199	199	199	199	199	199	-	
12/01/2016	0	59	199	199	199	188	1,144.79	199	199	199	183	199	199	24.21	Readings on arrival
12/01/2016	199	199	199	199	199	199	1,144.79	199	199	199	183	199	199	24.21	Readings on departure, new probes in North Pond
03/02/2017	199	199	199	199	199	199	1,144.79	199	199	199	199	199	199	24.21	
06/01/2017	199	199	199	199	199	199	1,144.79	199	199	199	199	199	199	24.21	
09/04/2017	199	199	199	199	199	199	1,695.44	199	199	199	192	178	199	24.21	
12/05/2017	114	165	199	199	179	180	1,695.66	199	199	199	166	199	199	24.21	To date, all totalizer increases are from pump testing
03/06/2018	186	199	199	199	199	199	1,695.66	199	199	199	199	199	199	24.21	
06/01/2018	159	199	199	199	199	199	1,695.66	199	199	199	177	186	199	24.21	

1 - Readings in centibars, collected with a Watermark 30 KTCD-NL Soil Moisture Meter

APPENDIX A

FIELD DATA SHEETS

GROUNDWATER SAMPLING FIELD FORM

Event: 2018 1st Semiannual	Site: Genesis Solar Energy Project	Project No: 196-004-06
Project: Groundwater Quality Monitoring Program		Project Manager: AWB
Technicians: RCD/AWB		Weather: Hot, windy

Sampling Method: Geotech Submersible Bladder Pump - Low Flow Purge (< 250 mL/minute); Flow-Through Cell;

Parameters Stable Once Within 10%

Well No.	DM-1	Time	Water Level (ft btoc)	Temp °C	pH	Conductivity (mS/cm)	Turbidity (NTUs)	ORP (mV)	DO (mg/L)
Casing Diameter (in.)	4.0	16:24	107.11	23.10	8.16	17.9	8.1	+62	4.60
Total Depth (ft btoc)	120	16:26	107.11	23.12	8.18	17.8	7.9	+64	4.60
Screened Interval (ft btoc)	100 - 120	16:28	107.11	23.14	8.17	17.8	7.9	+66	4.61
Depth to Water (ft btoc)	107.10								
Depth of Inlet (ft btoc)	115.00								
Discharge Time (sec)	25								
Fill Time (sec)	15								
Cycles per Minute	1.5								
Volume per Cycle (mL)	125								
Pump Rate (mL/min)	188								
Sample Date	5/30/2018								
Sample Time	16:30								

General Well Location: West side of settlement ponds

COMMENTS:

Well No.	DM-2	Time	Water Level (ft btoc)	Temp °C	pH	Conductivity (mS/cm)	Turbidity (NTUs)	ORP (mV)	DO (mg/L)
Casing Diameter (in.)	4.0	17:24	107.55	23.40	7.70	18.3	78.1	+100	2.50
Total Depth (ft btoc)	120	17:26	107.55	23.42	7.71	18.3	78.1	+101	2.51
Screened Interval (ft btoc)	100 - 120	17:28	107.55	23.43	7.71	18.4	78.3	+100	2.52
Depth to Water (ft btoc)	107.45								
Depth of Inlet (ft btoc)	115.00								
Discharge Time (sec)	27								
Fill Time (sec)	40								
Cycles per Minute	0.9								
Volume per Cycle (mL)	125								
Pump Rate (mL/min)	112								
Sample Date	5/30/2018								
Sample Time	17:30								

General Well Location: East side of settlement ponds

COMMENTS:

Well No.	DM-3	Time	Water Level (ft btoc)	Temp °C	pH	Conductivity (mS/cm)	Turbidity (NTUs)	ORP (mV)	DO (mg/L)
Casing Diameter (in.)	4.0	18:24	104.33	23.23	7.70	18.1	5.1	+120	4.15
Total Depth (ft btoc)	120	18:26	104.33	23.22	7.70	18.2	5.3	+121	4.16
Screened Interval (ft btoc)	100 - 120	18:28	104.33	23.22	7.71	18.1	5.3	+120	4.16
Depth to Water (ft btoc)	104.27								
Depth of Inlet (ft btoc)	115.00								
Discharge Time (sec)	27								
Fill Time (sec)	35								
Cycles per Minute	0.97								
Volume per Cycle (mL)	125								
Pump Rate (mL/min)	121								
Sample Date	5/30/2018								
Sample Time	18:30								

General Well Location: South side of settlement ponds

COMMENTS:

APPENDIX B

LABORATORY ANALYTICAL RESULTS

EVAPORATION PONDS

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08 June 2018

Arlin Brewster
Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, CA 92630

RE: Genesis Solar LTUs & Ponds

Enclosed are the results of analyses for samples received by the laboratory on 06/01/18 15:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh
Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

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Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-05	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/08/18 16:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
North Pond	T181814-01	Water	06/01/18 07:20	06/01/18 15:50
South Pond	T181814-02	Water	06/01/18 07:30	06/01/18 15:50

Rose Tashiro

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Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-05	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/08/18 16:34

DETECTIONS SUMMARY

Sample ID: North Pond **Laboratory ID:** T181814-01

Analyte	Result	Reporting Limit	Units	Method	Notes
Potassium	**430**	5.0	mg/l	EPA 200.7	FILT
Sodium	**12000**	50	mg/l	EPA 200.7	FILT
Arsenic	**470**	25	ug/l	200.8	FILT
Barium	**230**	25	ug/l	200.8	FILT
Nickel	**25**	25	ug/l	200.8	FILT
Zinc	**62**	25	ug/l	200.8	FILT
Calcium	**230**	5.0	mg/l	EPA 200.7	FILT
Magnesium	**4.6**	5.0	mg/l	EPA 200.7	J, FILT
pH	**9.4**	0.10	pH Units	SM4500	
Total Dissolved Solids	**120000**	55	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**148000**	10.0	umhos/cm	SM2510b mod.	
Chloride	**61700**	1000	mg/l	EPA 300.0	
Sulfate as SO4	**21000**	1000	mg/l	EPA 300.0	
Nitrate as NO3	**0.870**	0.500	mg/l	EPA 300.0	HLD-1

Sample ID: South Pond **Laboratory ID:** T181814-02

Analyte	Result	Reporting Limit	Units	Method	Notes
Sodium	**17000**	100	mg/l	EPA 200.7	FILT
Potassium	**1100**	5.0	mg/l	EPA 200.7	FILT
Arsenic	**1100**	25	ug/l	200.8	FILT
Barium	**85**	25	ug/l	200.8	FILT
Nickel	**46**	25	ug/l	200.8	FILT
Selenium	**43**	25	ug/l	200.8	FILT
Zinc	**79**	25	ug/l	200.8	FILT
Calcium	**27**	5.0	mg/l	EPA 200.7	FILT
Magnesium	**17**	5.0	mg/l	EPA 200.7	FILT
pH	**8.3**	0.10	pH Units	SM4500	
Total Dissolved Solids	**310000**	55	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**218000**	10.0	umhos/cm	SM2510b mod.	
Chloride	**152000**	2000	mg/l	EPA 300.0	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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26225 Enterprise Court	Project Number: 196-004-05	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/08/18 16:34

Sample ID: South Pond **Laboratory ID:** T181814-02

Analyte	Result	Reporting Limit	Units	Method	Notes
Sulfate as SO4	**59500**	2000	mg/l	EPA 300.0	
Nitrate as NO3	**22.2**	10.0	mg/l	EPA 300.0	HLD-1

Rose Tashek

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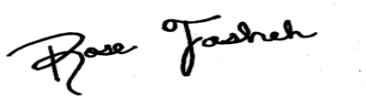
26225 Enterprise Court	Project Number: 196-004-05	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/08/18 16:34

North Pond

T181814-01(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods										
Potassium	**430**		5.0	mg/l	10	8060520	06/05/18	06/07/18	EPA 200.7	FILT
Sodium	**12000**		50	"	100	"	"	06/07/18	"	FILT
Copper	ND	0.015	0.25	"	10	"	"	06/07/18	"	FILT, R-07
Calcium	**230**	5.0	5.0	"	"	"	"	06/07/18	"	FILT
Iron	ND	0.35	10	"	"	"	"	"	"	FILT, R-07
Magnesium	**4.6**	3.6	5.0	"	"	"	"	"	"	J, FILT
Antimony	ND		10	ug/l	20	8060521	06/05/18	06/08/18	200.8	FILT, R-07
Arsenic	**470**		25	"	50	"	"	06/08/18	"	FILT
Barium	**230**		25	"	"	"	"	"	"	FILT
Cadmium	ND		10	"	20	"	"	06/08/18	"	FILT, R-07
Chromium	ND		0.50	"	1	"	"	06/07/18	"	FILT
Cobalt	ND		10	"	20	"	"	06/08/18	"	FILT, R-07
Lead	ND		0.50	"	1	"	"	06/07/18	"	FILT
Nickel	**25**		25	"	50	"	"	06/08/18	"	FILT
Selenium	ND		25	"	"	"	"	"	"	FILT, R-07
Zinc	**62**		25	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471										
Mercury	ND	0.000022	0.00050	mg/l	1	8060438	06/04/18	06/05/18	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods										
Oil & Grease	ND	1.40	5.00	mg/l	1	8060425	06/04/18	06/05/18	EPA 1664B	
Specific Conductance (EC)	**148000**		10.0	umhos/cm	"	8060126	06/01/18	06/04/18	SM2510b mod.	
pH	**9.4**		0.10	pH Units	"	8060125	06/01/18	06/01/18	SM4500	
Total Dissolved Solids	**120000**	36	55	mg/l	"	8060454	06/04/18	06/05/18	TDS by SM2540C	



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26225 Enterprise Court	Project Number: 196-004-05	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/08/18 16:34

North Pond

T181814-01(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anions by EPA Method 300.0										
Chloride	**61700**	12.7	1000	mg/l	200	8060127	06/01/18	06/05/18	EPA 300.0	
Sulfate as SO4	**21000**	65.5	1000	"	"	"	"	"	"	
Nitrate as NO3	**0.870**	0.0302	0.500	"	1	"	"	06/04/18	"	HLD-1

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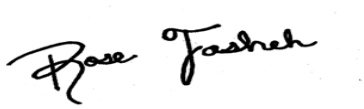
26225 Enterprise Court	Project Number: 196-004-05	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/08/18 16:34

South Pond

T181814-02(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods										
Potassium	**1100**		5.0	mg/l	10	8060520	06/05/18	06/07/18	EPA 200.7	FILT
Sodium	**17000**		100	"	200	"	"	06/07/18	"	FILT
Copper	ND	0.015	0.25	"	10	"	"	06/07/18	"	FILT, R-07
Calcium	**27**	5.0	5.0	"	"	"	"	"	"	FILT
Iron	ND	0.35	10	"	"	"	"	"	"	FILT, R-07
Magnesium	**17**	3.6	5.0	"	"	"	"	"	"	FILT
Antimony	ND		10	ug/l	20	8060521	06/05/18	06/08/18	200.8	FILT, R-07
Arsenic	**1100**		25	"	50	"	"	06/08/18	"	FILT
Barium	**85**		25	"	"	"	"	"	"	FILT
Cadmium	ND		25	"	"	"	"	"	"	FILT, R-07
Chromium	ND		10	"	20	"	"	06/08/18	"	FILT, R-07
Cobalt	ND		10	"	"	"	"	"	"	FILT, R-07
Lead	ND		0.50	"	1	"	"	06/07/18	"	FILT
Nickel	**46**		25	"	50	"	"	06/08/18	"	FILT
Selenium	**43**		25	"	"	"	"	"	"	FILT
Zinc	**79**		25	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471										
Mercury	ND	0.000022	0.00050	mg/l	1	8060438	06/04/18	06/05/18	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods										
Oil & Grease	ND	1.40	5.00	mg/l	1	8060425	06/04/18	06/05/18	EPA 1664B	
Specific Conductance (EC)	**218000**		10.0	umhos/cm	"	8060126	06/01/18	06/04/18	SM2510b mod.	
pH	**8.3**		0.10	pH Units	"	8060125	06/01/18	06/01/18	SM4500	
Total Dissolved Solids	**310000**	36	55	mg/l	"	8060454	06/04/18	06/05/18	TDS by SM2540C	



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26225 Enterprise Court	Project Number: 196-004-05	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/08/18 16:34

South Pond

T181814-02(Water)

SunStar Laboratories, Inc.

Anions by EPA Method 300.0

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**152000**	25.4	2000	mg/l	400	8060127	06/01/18	06/05/18	EPA 300.0	
Sulfate as SO4	**59500**	131	2000	"	"	"	"	"	"	
Nitrate as NO3	**22.2**	0.604	10.0	"	20	"	"	06/04/18	"	HLD-1

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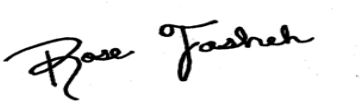
26225 Enterprise Court	Project Number: 196-004-05	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/08/18 16:34

Metals by EPA 200 Series Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8060520 - EPA 3010A											
Blank (8060520-BLK1)					Prepared: 06/05/18 Analyzed: 06/07/18						
Potassium	ND		0.50	mg/l							FILT
Sodium	ND		0.50	"							FILT
Copper	ND	0.002	0.025	"							FILT
Calcium	ND	0.50	0.50	"							FILT
Iron	ND	0.035	1.0	"							FILT
Magnesium	ND	0.36	0.50	"							FILT
LCS (8060520-BS1)					Prepared: 06/05/18 Analyzed: 06/07/18						
Copper	0.121	0.002	0.025	mg/l	0.100		121	75-125			FILT
Iron	0.090	0.035	1.0	"	0.100		90.3	75-125			FILT, J
Matrix Spike (8060520-MS1)		**Source: T181813-01**			Prepared: 06/05/18 Analyzed: 06/07/18						
Copper	0.215	0.015	0.25	mg/l	0.100	0.082	133	65-135			FILT, J
Iron	ND	0.35	10	"	0.100	ND		65-135			FILT, QM-01
Matrix Spike Dup (8060520-MSD1)		**Source: T181813-01**			Prepared: 06/05/18 Analyzed: 06/07/18						
Copper	0.212	0.015	0.25	mg/l	0.100	0.082	130	65-135	1.34	30	FILT, J
Iron	ND	0.35	10	"	0.100	ND		65-135		30	FILT, QM-01
Batch 8060521 - EPA 3010A											
Blank (8060521-BLK1)					Prepared: 06/05/18 Analyzed: 06/07/18						
Antimony	ND		0.50	ug/l							FILT
Arsenic	ND		0.50	"							FILT
Barium	ND		0.50	"							FILT
Cadmium	ND		0.50	"							FILT
Chromium	ND		0.50	"							FILT
Cobalt	ND		0.50	"							FILT
Lead	ND		0.50	"							FILT
Nickel	ND		0.50	"							FILT
Selenium	ND		0.50	"							FILT



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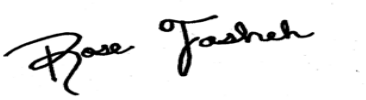
Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-05	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/08/18 16:34

Metals by EPA 200 Series Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8060521 - EPA 3010A											
Blank (8060521-BLK1)					Prepared: 06/05/18 Analyzed: 06/07/18						
Zinc	ND		0.50	ug/l							FILT
LCS (8060521-BS1)					Prepared: 06/05/18 Analyzed: 06/07/18						
Arsenic	53.9		0.50	ug/l	50.0		108	75-125			FILT
Barium	47.0		0.50	"	50.0		94.1	75-125			FILT
Cadmium	51.7		0.50	"	50.0		103	75-125			FILT
Chromium	51.2		0.50	"	50.0		102	75-125			FILT
Lead	44.8		0.50	"	50.0		89.7	75-125			FILT
Matrix Spike (8060521-MS1)		**Source: T181813-01**			Prepared: 06/05/18 Analyzed: 06/07/18						
Arsenic	53.8		0.50	ug/l	50.0	1.36	105	75-125			FILT
Barium	63.0		0.50	"	50.0	12.5	101	75-125			FILT
Cadmium	44.2		0.50	"	50.0	0.0956	88.2	75-125			FILT
Chromium	61.2		0.50	"	50.0	0.0744	122	75-125			FILT
Lead	49.5		0.50	"	50.0	0.178	98.6	75-125			FILT
Matrix Spike Dup (8060521-MSD1)		**Source: T181813-01**			Prepared: 06/05/18 Analyzed: 06/07/18						
Arsenic	55.4		0.50	ug/l	50.0	1.36	108	75-125	2.90	20	FILT
Barium	63.9		0.50	"	50.0	12.5	103	75-125	1.47	20	FILT
Cadmium	45.3		0.50	"	50.0	0.0956	90.4	75-125	2.49	20	FILT
Chromium	62.9		0.50	"	50.0	0.0744	126	75-125	2.62	20	FILT, QR-04
Lead	49.2		0.50	"	50.0	0.178	98.1	75-125	0.532	20	FILT



SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-05	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/08/18 16:34

Cold Vapor Extraction EPA 7470/7471 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8060438 - EPA 7470A Water											
Blank (8060438-BLK1)					Prepared: 06/04/18 Analyzed: 06/05/18						
Mercury	ND	0.000022	0.00050	mg/l							
LCS (8060438-BS1)					Prepared: 06/04/18 Analyzed: 06/05/18						
Mercury	0.00483	0.000022	0.00050	mg/l	0.00500		96.6	80-120			
Matrix Spike (8060438-MS1)		**Source: T181813-01**			Prepared: 06/04/18 Analyzed: 06/05/18						
Mercury	0.00464	0.000022	0.00050	mg/l	0.00500	ND	92.9	75-125			
Matrix Spike Dup (8060438-MSD1)		**Source: T181813-01**			Prepared: 06/04/18 Analyzed: 06/05/18						
Mercury	0.00441	0.000022	0.00050	mg/l	0.00500	ND	88.2	75-125	5.20	20	

Rose Tashek

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Providing Quality Analytical Services Nationwide

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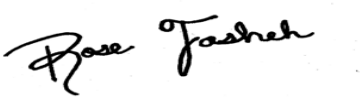
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-05	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/08/18 16:34

Conventional Chemistry Parameters by APHA/EPA/ASTM Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8060125 - General Preparation											
Duplicate (8060125-DUP1)		**Source: T181813-01**			Prepared & Analyzed: 06/01/18						
pH	8.74		0.10	pH Units		8.36			4.44	20	
Batch 8060126 - General Preparation											
Duplicate (8060126-DUP1)		**Source: T181813-01**			Prepared: 06/01/18 Analyzed: 06/04/18						
Specific Conductance (EC)	2620		10.0	umhos/cm		2640			0.760	15	
Batch 8060425 - General Preparation											
Blank (8060425-BLK1)					Prepared: 06/04/18 Analyzed: 06/05/18						
Oil & Grease	ND	1.40	5.00	mg/l							
LCS (8060425-BS1)					Prepared: 06/04/18 Analyzed: 06/05/18						
Oil & Grease	33.4	1.40	5.00	mg/l	40.0		83.5	83-101			
LCS Dup (8060425-BSD1)					Prepared: 06/04/18 Analyzed: 06/05/18						
Oil & Grease	34.4	1.40	5.00	mg/l	40.0		86.0	83-101	2.95	11	
Batch 8060454 - General Preparation											
Blank (8060454-BLK1)					Prepared: 06/04/18 Analyzed: 06/05/18						
Total Dissolved Solids	ND	36	55	mg/l							
LCS (8060454-BS1)					Prepared: 06/04/18 Analyzed: 06/05/18						
Total Dissolved Solids	498	36	55	mg/l	500		99.6	80-120			



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Lake Forest, California 92630
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Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-05	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/08/18 16:34

Conventional Chemistry Parameters by APHA/EPA/ASTM Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8060454 - General Preparation											
Duplicate (8060454-DUP1)		**Source: T181814-01**			Prepared: 06/04/18 Analyzed: 06/05/18						
Total Dissolved Solids	114000	36	55	mg/l		116000			1.57	5	

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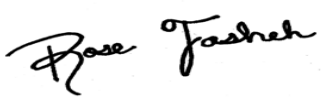
949.297.5027 Fax

Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-05	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/08/18 16:34

Anions by EPA Method 300.0 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8060127 - General Preparation											
Blank (8060127-BLK1)					Prepared & Analyzed: 06/01/18						
Nitrate as NO3	ND	0.0302	0.500	mg/l							
LCS (8060127-BS1)					Prepared & Analyzed: 06/01/18						
Chloride	26.0	0.0635	5.00	mg/l	25.0		104	75-125			
Sulfate as SO4	26.1	0.327	5.00	"	25.0		104	75-125			
Nitrate as NO3	26.1	0.0302	0.500	"	25.0		104	75-125			
Matrix Spike (8060127-MS1)		**Source: T181813-02**			Prepared: 06/01/18 Analyzed: 06/04/18						
Chloride	6910	1.27	100	mg/l	25.0	6040	NR	75-125			QM-02
Sulfate as SO4	6300	6.55	100	"	25.0	5520	NR	75-125			QM-02
Nitrate as NO3	30.8	0.0302	0.500	"	25.0	12.4	73.6	75-125			QM-05
Matrix Spike Dup (8060127-MSD1)		**Source: T181813-02**			Prepared: 06/01/18 Analyzed: 06/04/18						
Chloride	7230	1.27	100	mg/l	25.0	6040	NR	75-125	4.63	20	QM-02
Sulfate as SO4	6600	6.55	100	"	25.0	5520	NR	75-125	4.53	20	QM-02
Nitrate as NO3	28.9	0.0302	0.500	"	25.0	12.4	65.9	75-125	6.45	20	QM-05



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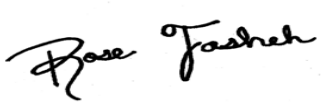
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Northstar Environmental Remediation	Project: Genesis Solar LTUs & Ponds	
26225 Enterprise Court	Project Number: 196-004-05	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/08/18 16:34

Notes and Definitions

R-07	Reporting limit for this compound(s) has been raised to account for dilution necessary due to high levels of interfering compound(s) and/or matrix affect.
QR-04	The pecent recovery and/or RPD was outside acceptance criteria. Results accepted based upon percent recovery results in duplicate QC sample and the CCV and CCB results.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS was within acceptance criteria. The data is acceptable as no negative impact on data is expected.
QM-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
QM-01	The % recovery is outside of established control limits due to matrix interference and/or sample dilution due to matrix effect. The batch was accepted based on acceptable LCS recovery.
J	Detected but below the Standard Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
HLD-1	Sample was originally analyzed within EPA recommended holding time. However, subsequent re-analysis due to QC failure, occured outside EPA recommended holding time.
FILT	The sample was filtered prior to analysis.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the Method Detection Limit (MDL)
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: Northstar Environmental Remediation _____
Address: 26225 Enterprise Court, Lake Forest, CA 92630 _____
Phone: 949-274-1719 _____ Fax: _____
Project Manager: Arlin Brewster _____

Date: 06/01/2018 Page: 1 of 1
Project Name: Genesis Solar LTUs & Ponds _____
Collector: Arlin Brewster _____ Client Project #: 196-004-05 _____
Batch #: T18814 EDF #: T10000006093 _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	200.7 - Metals: Ca, Cu, Na, K, Fe, Mg (FIELD FILTERED)	200.8 - Metals: Sb, As, Ba, Cd, Cr, Co, Pb, Ni, Se, Zn (F F)	300.0 - Chloride, Nitrate, Sulfate	1664 - Oil and Grease	7470A - Mercury	9040 - pH	SM2510B - Conductivity, Specific	SM2540C - Total Dis. Solids	8015M - Therminol (Subcontract)	8260B - Benzene (soil only)		Laboratory ID #	Comments/Preservative	Total # of containers
North Pond	06/01/18	0720	W	Various	X	X	X	X	X	X	X	X	X			01		5
South Pond	06/01/18	0730	W	Various	X	X	X	X	X	X	X	X	X			02		5
LTU #1	06/01/18	0735	S	8-oz jar										X		03	?	
LTU #2		AWB	S	8-oz jar														
LTU #3			S	8-oz jar														
LTU #4	06/01/18		S	8-oz jar													Report Separately	1
Field Blank	N/A	N/A	W	Various												04	HOLD	2
Trip Blank	N/A	N/A	W	Various												05	HOLD	2

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
Arlin Brewster	06/01/18 @ 1550		6-1-18 1550
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold 4.2

Turn around time: Standard **

Notes AWB
~~** Deuterium & Oxygen-18 subcontract has 10 day TAT~~

Reporting limits must match previous reports

Sample disposal Instructions: Disposal @ $2.00 each ____ Return to client ____ Pickup ____

SunStar Laboratories — Celebrating 20 Years!

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T181814

Client Name: Northstar Environmental Remediation

Project: Genesis Solar LTUs & Ponds

Delivered by: ☒ **Client** ☐ **SunStar Courier** ☐ **GSO** ☐ **FedEx** ☐ **Other**

If Courier, Received by: _____ Date/Time Courier Received: _____

Lab Received by: Dan Date/Time Lab Received: 6-1-18 15:50

Total number of coolers received: 3

Temperature:	Cooler #1	4.4	°C +/- the CF (- 0.2°C)	=	4.2	°C corrected temperature
Temperature:	Cooler #2	5.3	°C +/- the CF (- 0.2°C)	=	5.1	°C corrected temperature
Temperature:	Cooler #3	4.7	°C +/- the CF (- 0.2°C)	=	4.5	°C corrected temperature

Temperature criteria = ≤ 6°C (no frozen containers) Within criteria? ☒ **Yes** ☐ **No**

If NO:

Samples received on ice? ☐ Yes ☐ **No → Complete Non-Conformance Sheet**

If on ice, samples received same day collected? ☐ Yes → Acceptable ☐ **No → Complete Non-Conformance Sheet**

Custody seals intact on cooler/sample	☐ Yes	☐ No*	☒ N/A
Sample containers intact	☒ Yes	☐ No*	
Sample labels match Chain of Custody IDs	☒ Yes	☐ No*	
Total number of containers received match COC	☒ Yes	☐ No*	
Proper containers received for analyses requested on COC	☒ Yes	☐ No*	
Proper preservative indicated on COC/containers for analyses requested	☒ Yes	☐ No*	☐ N/A
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times	☒ **Yes**	☐ **No***	

* Complete Non-Conformance Receiving Sheet if checked

Cooler/Sample Review - Initials and date: DM 6-1-18

Comments:

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T181814

Client: **Northstar Environmental Remediation** **Project Manager:** **Rose Fasheh**
Project: **Genesis Solar LTUs & Ponds** **Project Number:** **196-004-05**

Report To:
Northstar Environmental Remediation
Arlin Brewster
26225 Enterprise Court
Lake Forest, CA 92630

Date Due: 06/08/18 17:00 (5 day TAT)
Received By: Dan Marteski Date Received: 06/01/18 15:50
Logged In By: Dan Marteski Date Logged In: 06/01/18 16:31

Samples Received at: **4.2°C**
Custody Seals No Received On Ice Yes
Containers Intact Yes
COC/Labels Agree Yes
Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T181814-01 North Pond [Water] Sampled 06/01/18 07:20 (GMT-08:00) Pacific Time (US &				
1664	06/08/18 15:00	5	06/29/18 07:20	Oil & Grease; MDL
200.7	06/08/18 15:00	5	11/28/18 07:20	Ca,Cu,Na,K,Fe,Mg; MDL (Field Filtered)
200.8	06/08/18 15:00	5	11/28/18 07:20	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	06/08/18 15:00	5	06/29/18 07:20	Chloride, Sulfate only
300.0 - NO2, NO3, PO4	06/08/18 15:00	5	06/03/18 07:20	Nitrate
7470/71 Hg	06/08/18 15:00	5	08/30/18 07:20	MDL
Conductivity	06/08/18 15:00	5	06/29/18 07:20	
pH water 9040	06/08/18 15:00	5	06/02/18 07:20	
TDS-160.1	06/08/18 15:00	5	06/08/18 07:20	
T181814-02 South Pond [Water] Sampled 06/01/18 07:30 (GMT-08:00) Pacific Time (US &				
1664	06/08/18 15:00	5	06/29/18 07:30	Oil & Grease; MDL
200.7	06/08/18 15:00	5	11/28/18 07:30	Ca,Cu,Na,K,Fe,Mg; MDL (Field Filtered)
200.8	06/08/18 15:00	5	11/28/18 07:30	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	06/08/18 15:00	5	06/29/18 07:30	Chloride, Sulfate only
300.0 - NO2, NO3, PO4	06/08/18 15:00	5	06/03/18 07:30	Nitrate
7470/71 Hg	06/08/18 15:00	5	08/30/18 07:30	MDL
Conductivity	06/08/18 15:00	5	06/29/18 07:30	
pH water 9040	06/08/18 15:00	5	06/02/18 07:30	
TDS-160.1	06/08/18 15:00	5	06/08/18 07:30	

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T181814

Client:	**Northstar Environmental Remediation**	**Project Manager:**	**Rose Fasheh**
Project:	**Genesis Solar LTUs & Ponds**	**Project Number:**	**196-004-05**

Analysis	Due	TAT	Expires	Comments
T181814-03 LTU #1 [Soil] Sampled 06/01/18 07:35 (GMT-08:00) Pacific Time (US &				
8260	06/08/18 15:00	5	06/15/18 07:35	Benzene
T181814-04 Field Blank [Water] Sampled 06/01/18 00:00 (GMT-08:00) Pacific Time (US &				**HOLD**
[NO ANALYSES]				
T181814-05 Trip Blank [Water] Sampled 06/01/18 00:00 (GMT-08:00) Pacific Time (US &				**HOLD**
[NO ANALYSES]				

Test America Inc.

T181814-01 North Pond [Water] Sampled 06/01/18 07:20 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	06/08/18 15:00	5	11/28/18 07:20	8015M- Therminol
T181814-02 South Pond [Water] Sampled 06/01/18 07:30 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	06/08/18 15:00	5	11/28/18 07:30	8015M- Therminol

Reviewed By

Date

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-212833-1
Client Project/Site: T181814

For:
SunStar Laboratories Inc
25712 Commercentre Drive
Lake Forest, California 92630

Attn: Rose Fasheh

Authorized for release by:
6/12/2018 11:59:30 AM

Danielle Roberts, Senior Project Manager
(949)261-1022
danielle.roberts@testamericainc.com

Table of Contents

Sample Summary

Client: SunStar Laboratories Inc
Project/Site: T181814

TestAmerica Job ID: 440-212833-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-212833-1	T181814-01	Water	06/01/18 07:20	06/05/18 12:15
440-212833-2	T181814-02	Water	06/01/18 07:30	06/05/18 12:15

Job ID: 440-212833-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-212833-1

Comments
No additional comments.

Receipt
The samples were received on 6/5/2018 12:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.5º C.

GC Semi VOA
Method(s) 8015B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-480518 and analytical batch 440-481344. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch: (LCS 440-480518/13-A). Method 8015B - Therminol.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 3510C 8015B preparation batch 440-480518.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: SunStar Laboratories Inc
Project/Site: T181814

TestAmerica Job ID: 440-212833-1

Client Sample ID: T181814-01 — Lab Sample ID: 440-212833-1

No Detections.

Client Sample ID: T181814-02 — Lab Sample ID: 440-212833-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client: SunStar Laboratories Inc
Project/Site: T181814

TestAmerica Job ID: 440-212833-1

Client Sample ID: T181814-01

Lab Sample ID: 440-212833-1

Date Collected: 06/01/18 07:20

Matrix: Water

Date Received: 06/05/18 12:15

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.095	0.019	mg/L		06/06/18 05:49	06/11/18 10:22	1
1,1'-Biphenyl	ND		0.095	0.019	mg/L		06/06/18 05:49	06/11/18 10:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*53*		*45 - 120*	*06/06/18 05:49*	*06/11/18 10:22*	*1*

Client Sample ID: T181814-02

Lab Sample ID: 440-212833-2

Date Collected: 06/01/18 07:30

Matrix: Water

Date Received: 06/05/18 12:15

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.090	0.018	mg/L		06/06/18 05:49	06/11/18 10:45	1
1,1'-Biphenyl	ND		0.090	0.018	mg/L		06/06/18 05:49	06/11/18 10:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*45*		*45 - 120*	*06/06/18 05:49*	*06/11/18 10:45*	*1*

Surrogate Summary

Client: SunStar Laboratories Inc
Project/Site: T181814

TestAmerica Job ID: 440-212833-1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	OTCN1 (45-120)
440-212833-1	T181814-01	53
440-212833-2	T181814-02	45
LCS 440-480518/13-A	Lab Control Sample	70
LCSD 440-480518/14-A	Lab Control Sample Dup	74
MB 440-480518/1-A	Method Blank	72

Surrogate Legend

OTCN = n-Octacosane

Method Summary

Client: SunStar Laboratories Inc
Project/Site: T181814

TestAmerica Job ID: 440-212833-1

Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL IRV
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Chronicle

Client: SunStar Laboratories Inc
Project/Site: T181814

TestAmerica Job ID: 440-212833-1

Client Sample ID: T181814-01

Lab Sample ID: 440-212833-1

Date Collected: 06/01/18 07:20

Matrix: Water

Date Received: 06/05/18 12:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1055 mL	1 mL	480518	06/06/18 05:49	L1H	TAL IRV
Total/NA	Analysis	8015B		1			481344	06/11/18 10:22	AMH	TAL IRV

Client Sample ID: T181814-02

Lab Sample ID: 440-212833-2

Date Collected: 06/01/18 07:30

Matrix: Water

Date Received: 06/05/18 12:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1110 mL	1 mL	480518	06/06/18 05:49	L1H	TAL IRV
Total/NA	Analysis	8015B		1			481344	06/11/18 10:45	AMH	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 440-480518/1-A
Matrix: Water
Analysis Batch: 481344

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 480518

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.10	0.020	mg/L		06/06/18 05:49	06/11/18 09:16	1
1,1'-Biphenyl	ND		0.10	0.020	mg/L		06/06/18 05:49	06/11/18 09:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*72*		*45 - 120*	*06/06/18 05:49*	*06/11/18 09:16*	*1*

Lab Sample ID: LCS 440-480518/13-A
Matrix: Water
Analysis Batch: 481344

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 480518

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene, 1,1'-oxybis-			0.100	0.0683	J	mg/L		68	50 - 115		
1,1'-Biphenyl			0.100	0.0606	J	mg/L		61	50 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane	*70*		*45 - 120*

Lab Sample ID: LCSD 440-480518/14-A
Matrix: Water
Analysis Batch: 481344

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 480518

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-			0.100	0.0707	J	mg/L		71	50 - 115	3	30
1,1'-Biphenyl			0.100	0.0628	J	mg/L		63	50 - 115	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane	*74*		*45 - 120*

QC Association Summary

Client: SunStar Laboratories Inc
Project/Site: T181814

TestAmerica Job ID: 440-212833-1

GC Semi VOA

Prep Batch: 480518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-212833-1	T181814-01	Total/NA	Water	3510C	
440-212833-2	T181814-02	Total/NA	Water	3510C	
MB 440-480518/1-A	Method Blank	Total/NA	Water	3510C	
LCS 440-480518/13-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 440-480518/14-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 481344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-212833-1	T181814-01	Total/NA	Water	8015B	480518
440-212833-2	T181814-02	Total/NA	Water	8015B	480518
MB 440-480518/1-A	Method Blank	Total/NA	Water	8015B	480518
LCS 440-480518/13-A	Lab Control Sample	Total/NA	Water	8015B	480518
LCSD 440-480518/14-A	Lab Control Sample Dup	Total/NA	Water	8015B	480518

Definitions/Glossary

Client: SunStar Laboratories Inc
Project/Site: T181814

TestAmerica Job ID: 440-212833-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: SunStar Laboratories Inc
Project/Site: T181814

TestAmerica Job ID: 440-212833-1

Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	CA ELAP 2706	06-30-18 *

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8015B	3510C	Water	1,1'-Biphenyl
8015B	3510C	Water	Benzene, 1,1'-oxybis-

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

SUBCONTRACT ORDER

SunStar Laboratories, Inc.

T181814

SENDING LABORATORY:

SunStar Laboratories, Inc.
25712 Commercentre Drive
Lake Forest, CA 92630
Phone: (949) 297-5020
Fax: (949) 297-5027
Project Manager: Rose Fasheh

RECEIVING LABORATORY:

TestAmerica (Irvine) Laboratories
17461 Derian Ave, #100
Irvine, CA 92614
Phone :(949) 261-1022
Fax: N/A

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: T181814-01	**Water**	**Sampled:06/01/18 07:20**		
Misc Water Testing #1	06/08/18 15:00	11/28/18 07:20		8015M- Therminol
Containers Supplied:				
Sample ID: T181814-02	**Water**	**Sampled:06/01/18 07:30**		
Misc Water Testing #1	06/08/18 15:00	11/28/18 07:30		8015M- Therminol
Containers Supplied:				

440-212833 Chain of Custody

Released By	Date	Received By	Date
			4.5/4.5 IRSC 6
	6.5.18 12:15	TA IRV 6/5/18	12:15
Released By	Date	Received By	Date

VG 6/5

Login Sample Receipt Checklist

Client: SunStar Laboratories Inc

Job Number: 440-212833-1

Login Number: 212833
List Number: 1
Creator: Garcia, Veronica G

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Not requested on COC.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX C

LABORATORY ANALYTICAL RESULTS

DETECTION MONITORING WELLS

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

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14 June 2018

Arlin Brewster
Northstar Environmental Remediation
26225 Enterprise Court
Lake Forest, CA 92630

RE: Genesis Solar Groundwater

Enclosed are the results of analyses for samples received by the laboratory on 06/01/18 15:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh
Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

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Lake Forest, California 92630
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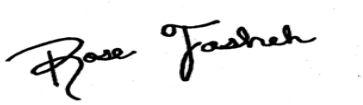
Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
23a	T181813-01	Water	06/01/18 05:35	06/01/18 15:50
OBS-1	T181813-02	Water	06/01/18 11:00	06/01/18 15:50
TW-1	T181813-03	Water	06/01/18 11:10	06/01/18 15:50
TW-2	T181813-04	Water	06/01/18 06:30	06/01/18 15:50
PW-2	T181813-05	Water	06/01/18 09:15	06/01/18 15:50
DM-1	T181813-06	Water	05/30/18 16:30	06/01/18 15:50
DM-2	T181813-07	Water	05/30/18 17:30	06/01/18 15:50
DM-3	T181813-08	Water	05/30/18 18:30	06/01/18 15:50
DUP	T181813-09	Water	05/30/18 00:00	06/01/18 15:50



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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

DETECTIONS SUMMARY

Sample ID: 23a **Laboratory ID:** T181813-01

Analyte	Result	Reporting Limit	Units	Method	Notes
Sodium	**760**	5.0	mg/l	EPA 200.7	FILT
Potassium	**19**	5.0	mg/l	EPA 200.7	FILT
Barium	**13**	5.0	ug/l	200.8	FILT
Copper	**0.082**	0.25	mg/l	EPA 200.7	FILT, J
Zinc	**56**	5.0	ug/l	200.8	FILT
Calcium	**22**	5.0	mg/l	EPA 200.7	FILT
pH	**8.4**	0.10	pH Units	SM4500	
Total Dissolved Solids	**1300**	55	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**2640**	10.0	umhos/cm	SM2510b mod.	
Chloride	**491**	5.00	mg/l	EPA 300.0	
Sulfate as SO4	**415**	5.00	mg/l	EPA 300.0	

Sample ID: OBS-1 **Laboratory ID:** T181813-02

Analyte	Result	Reporting Limit	Units	Method	Notes
Sodium	**6700**	50	mg/l	EPA 200.7	FILT
Potassium	**75**	5.0	mg/l	EPA 200.7	FILT
Barium	**7.8**	5.0	ug/l	200.8	FILT
Copper	**0.10**	0.25	mg/l	EPA 200.7	FILT, J
Selenium	**57**	5.0	ug/l	200.8	FILT
Zinc	**5.8**	5.0	ug/l	200.8	FILT
Calcium	**320**	5.0	mg/l	EPA 200.7	FILT
Magnesium	**87**	5.0	mg/l	EPA 200.7	FILT
pH	**8.0**	0.10	pH Units	SM4500	
Total Dissolved Solids	**16000**	55	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**23600**	10.0	umhos/cm	SM2510b mod.	
Chloride	**6040**	100	mg/l	EPA 300.0	
Sulfate as SO4	**5520**	100	mg/l	EPA 300.0	
Nitrate as NO3	**12.4**	10.0	mg/l	EPA 300.0	HLD-1

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

Sample ID: TW-1 **Laboratory ID:** T181813-03

Analyte	Result	Reporting Limit	Units	Method	Notes
Potassium	**53**	5.0	mg/l	EPA 200.7	FILT
Sodium	**3100**	50	mg/l	EPA 200.7	FILT
Arsenic	**6.0**	5.0	ug/l	200.8	FILT
Barium	**5.9**	5.0	ug/l	200.8	FILT
Copper	**0.11**	0.25	mg/l	EPA 200.7	FILT, J
Calcium	**74**	5.0	mg/l	EPA 200.7	FILT
Magnesium	**5.0**	5.0	mg/l	EPA 200.7	FILT
pH	**10**	0.10	pH Units	SM4500	
Oil & Grease	**1.70**	5.00	mg/l	EPA 1664B	J
Total Dissolved Solids	**9300**	55	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**14000**	10.0	umhos/cm	SM2510b mod.	
Chloride	**4130**	100	mg/l	EPA 300.0	
Sulfate as SO4	**1390**	100	mg/l	EPA 300.0	

Sample ID: TW-2 **Laboratory ID:** T181813-04

Analyte	Result	Reporting Limit	Units	Method	Notes
Potassium	**44**	5.0	mg/l	EPA 200.7	FILT
Sodium	**650**	50	mg/l	EPA 200.7	FILT
Arsenic	**6.3**	5.0	ug/l	200.8	FILT
Barium	**23**	5.0	ug/l	200.8	FILT
Copper	**0.089**	0.25	mg/l	EPA 200.7	FILT, J
Zinc	**76**	5.0	ug/l	200.8	FILT
Calcium	**83**	5.0	mg/l	EPA 200.7	FILT
Iron	**5.4**	10	mg/l	EPA 200.7	FILT, R-07, J
pH	**9.6**	0.10	pH Units	SM4500	
Total Dissolved Solids	**2800**	55	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**5590**	10.0	umhos/cm	SM2510b mod.	
Chloride	**1540**	50.0	mg/l	EPA 300.0	
Sulfate as SO4	**439**	50.0	mg/l	EPA 300.0	

Sample ID: PW-2 **Laboratory ID:** T181813-05

Analyte	Result	Reporting Limit	Units	Method	Notes
Potassium	**9.8**	5.0	mg/l	EPA 200.7	FILT

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

Sample ID: PW-2 **Laboratory ID:** T181813-05

Analyte	Result	Reporting Limit	Units	Method	Notes
Sodium	**1000**	5.0	mg/l	EPA 200.7	FILT
Arsenic	**19**	5.0	ug/l	200.8	FILT
Barium	**14**	5.0	ug/l	200.8	FILT
Copper	**0.099**	0.25	mg/l	EPA 200.7	FILT, J
Calcium	**51**	5.0	mg/l	EPA 200.7	FILT
Magnesium	**4.1**	5.0	mg/l	EPA 200.7	FILT, J
Total Dissolved Solids	**2000**	55	mg/l	TDS by SM2540C	
pH	**8.5**	0.10	pH Units	SM4500	
Specific Conductance (EC)	**3620**	10.0	umhos/cm	SM2510b mod.	
Fluoride	**1.40**	2.50	mg/l	EPA 300.0	J
Chloride	**865**	25.0	mg/l	EPA 300.0	
Sulfate as SO4	**449**	25.0	mg/l	EPA 300.0	

Sample ID: DM-1 **Laboratory ID:** T181813-06

Analyte	Result	Reporting Limit	Units	Method	Notes
Sodium	**5200**	50	mg/l	EPA 200.7	FILT
Potassium	**63**	5.0	mg/l	EPA 200.7	FILT
Arsenic	**5.0**	5.0	ug/l	200.8	FILT
Barium	**30**	5.0	ug/l	200.8	FILT
Copper	**0.096**	0.25	mg/l	EPA 200.7	FILT, J
Selenium	**5.9**	5.0	ug/l	200.8	FILT
Zinc	**9.5**	5.0	ug/l	200.8	FILT
Calcium	**270**	5.0	mg/l	EPA 200.7	FILT
Iron	**0.78**	10	mg/l	EPA 200.7	FILT, J
Magnesium	**64**	5.0	mg/l	EPA 200.7	FILT
pH	**7.9**	0.10	pH Units	SM4500	O-09
Total Dissolved Solids	**11000**	55	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**17300**	10.0	umhos/cm	SM2510b mod.	
Chloride	**5190**	100	mg/l	EPA 300.0	
Sulfate as SO4	**2030**	100	mg/l	EPA 300.0	
Nitrate as NO3	**14.7**	10.0	mg/l	EPA 300.0	HLD-1

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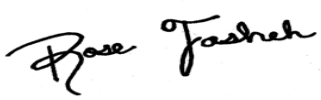
Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

Sample ID: DM-2 **Laboratory ID:** T181813-07

Analyte	Result	Reporting Limit	Units	Method	Notes
Potassium	**68**	5.0	mg/l	EPA 200.7	FILT
Sodium	**4800**	50	mg/l	EPA 200.7	FILT
Arsenic	**5.1**	5.0	ug/l	200.8	FILT
Barium	**51**	5.0	ug/l	200.8	FILT
Chromium	**5.0**	5.0	ug/l	200.8	FILT
Copper	**0.11**	0.25	mg/l	EPA 200.7	FILT, J
Selenium	**6.3**	5.0	ug/l	200.8	FILT
Calcium	**300**	5.0	mg/l	EPA 200.7	FILT
Magnesium	**67**	5.0	mg/l	EPA 200.7	FILT
pH	**7.9**	0.10	pH Units	SM4500	O-09
Total Dissolved Solids	**9900**	55	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**17000**	10.0	umhos/cm	SM2510b mod.	
Chloride	**6000**	100	mg/l	EPA 300.0	
Sulfate as SO4	**2280**	100	mg/l	EPA 300.0	
Nitrate as NO3	**17.5**	10.0	mg/l	EPA 300.0	HLD-1

Sample ID: DM-3 **Laboratory ID:** T181813-08

Analyte	Result	Reporting Limit	Units	Method	Notes
Potassium	**61**	5.0	mg/l	EPA 200.7	FILT
Sodium	**4100**	50	mg/l	EPA 200.7	FILT
Arsenic	**14**	5.0	ug/l	200.8	FILT
Barium	**15**	5.0	ug/l	200.8	FILT
Copper	**0.11**	0.25	mg/l	EPA 200.7	FILT, J
Calcium	**260**	5.0	mg/l	EPA 200.7	FILT
Magnesium	**61**	5.0	mg/l	EPA 200.7	FILT
pH	**7.9**	0.10	pH Units	SM4500	O-09
Total Dissolved Solids	**12000**	55	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**17100**	10.0	umhos/cm	SM2510b mod.	
Chloride	**6350**	100	mg/l	EPA 300.0	
Sulfate as SO4	**2600**	100	mg/l	EPA 300.0	
Nitrate as NO3	**10.7**	10.0	mg/l	EPA 300.0	HLD-1



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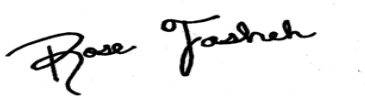
Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

Sample ID: DUP **Laboratory ID:** T181813-09

Analyte	Result	Reporting Limit	Units	Method	Notes
Potassium	**10**	5.0	mg/l	EPA 200.7	FILT
Sodium	**1100**	5.0	mg/l	EPA 200.7	FILT
Arsenic	**12**	5.0	ug/l	200.8	FILT
Barium	**7.3**	5.0	ug/l	200.8	FILT
Copper	**0.11**	0.25	mg/l	EPA 200.7	FILT, J
Calcium	**54**	5.0	mg/l	EPA 200.7	FILT
Magnesium	**4.2**	5.0	mg/l	EPA 200.7	FILT, J
pH	**8.2**	0.10	pH Units	SM4500	O-04
Total Dissolved Solids	**2000**	55	mg/l	TDS by SM2540C	
Specific Conductance (EC)	**3630**	10.0	umhos/cm	SM2510b mod.	
Chloride	**857**	25.0	mg/l	EPA 300.0	
Sulfate as SO4	**445**	25.0	mg/l	EPA 300.0	



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949.297.5020 Phone
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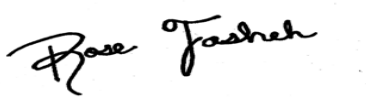
Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

23a

T181813-01(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods										
Potassium	**19**		5.0	mg/l	10	8060520	06/05/18	06/07/18	EPA 200.7	FILT
Sodium	**760**		5.0	"	"	"	"	"	"	FILT
Copper	**0.082**	0.015	0.25	"	"	"	"	"	"	FILT, J
Calcium	**22**	5.0	5.0	"	"	"	"	"	"	FILT
Iron	ND	0.35	10	"	"	"	"	"	"	FILT, R-07
Magnesium	ND	3.6	5.0	"	"	"	"	"	"	FILT, R-07
Antimony	ND		0.50	ug/l	1	8060521	06/05/18	06/07/18	200.8	FILT
Arsenic	ND		5.0	"	10	"	"	06/08/18	"	FILT, R-07
Barium	**13**		5.0	"	"	"	"	"	"	FILT
Cadmium	ND		0.50	"	1	"	"	06/07/18	"	FILT
Chromium	ND		0.50	"	"	"	"	"	"	FILT
Cobalt	ND		0.50	"	"	"	"	"	"	FILT
Lead	ND		0.50	"	"	"	"	"	"	FILT
Nickel	ND		0.50	"	"	"	"	"	"	FILT
Selenium	ND		5.0	"	10	"	"	06/08/18	"	FILT, R-07
Zinc	**56**		5.0	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471										
Mercury	ND	0.000022	0.00050	mg/l	1	8060438	06/04/18	06/05/18	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods										
Oil & Grease	ND	1.40	5.00	mg/l	1	8060425	06/04/18	06/05/18	EPA 1664B	
Specific Conductance (EC)	**2640**		10.0	umhos/cm	"	8060126	06/01/18	06/04/18	SM2510b mod.	
pH	**8.4**		0.10	pH Units	"	8060125	06/01/18	06/01/18	SM4500	
Total Dissolved Solids	**1300**	36	55	mg/l	"	8060423	06/04/18	06/04/18	TDS by SM2540C	



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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

23a

T181813-01(Water)

SunStar Laboratories, Inc.

Anions by EPA Method 300.0

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**491**	0.0635	5.00	mg/l	1	8060127	06/01/18	06/01/18	EPA 300.0	
Sulfate as SO4	**415**	0.327	5.00	"	"	"	"	"	"	
Nitrate as NO3	ND	0.0302	0.500	"	"	"	"	"	"	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

OBS-1

T181813-02(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods										
Potassium	**75**		5.0	mg/l	10	8060520	06/05/18	06/07/18	EPA 200.7	FILT
Sodium	**6700**		50	"	100	"	"	06/07/18	"	FILT
Copper	**0.10**	0.015	0.25	"	10	"	"	06/07/18	"	FILT, J
Calcium	**320**	5.0	5.0	"	"	"	"	06/07/18	"	FILT
Iron	ND	0.35	10	"	"	"	"	"	"	FILT, R-07
Magnesium	**87**	3.6	5.0	"	"	"	"	"	"	FILT
Antimony	ND		0.50	ug/l	1	8060521	06/05/18	06/07/18	200.8	FILT
Arsenic	ND		5.0	"	10	"	"	06/08/18	"	FILT, R-07
Barium	**7.8**		5.0	"	"	"	"	"	"	FILT
Cadmium	ND		0.50	"	1	"	"	06/07/18	"	FILT
Chromium	ND		0.50	"	"	"	"	"	"	FILT
Cobalt	ND		0.50	"	"	"	"	"	"	FILT
Lead	ND		0.50	"	"	"	"	"	"	FILT
Nickel	ND		5.0	"	10	"	"	06/08/18	"	FILT, R-07
Selenium	**57**		5.0	"	"	"	"	"	"	FILT
Zinc	**5.8**		5.0	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471										
Mercury	ND	0.000022	0.00050	mg/l	1	8060438	06/04/18	06/05/18	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods										
Oil & Grease	ND	1.40	5.00	mg/l	1	8060425	06/04/18	06/05/18	EPA 1664B	
Specific Conductance (EC)	**23600**		10.0	umhos/cm	"	8060126	06/01/18	06/04/18	SM2510b mod.	
pH	**8.0**		0.10	pH Units	"	8060125	06/01/18	06/01/18	SM4500	
Total Dissolved Solids	**16000**	36	55	mg/l	"	8060423	06/04/18	06/04/18	TDS by SM2540C	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

OBS-1

T181813-02(Water)

SunStar Laboratories, Inc.

Anions by EPA Method 300.0

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**6040**	1.27	100	mg/l	20	8060127	06/01/18	06/04/18	EPA 300.0	
Sulfate as SO4	**5520**	6.55	100	"	"	"	"	"	"	
Nitrate as NO3	**12.4**	0.604	10.0	"	"	"	"	"	"	HLD-1

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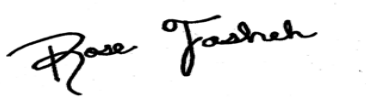
Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

TW-1

T181813-03(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods										
Potassium	**53**		5.0	mg/l	10	8060520	06/05/18	06/07/18	EPA 200.7	FILT
Sodium	**3100**		50	"	100	"	"	06/07/18	"	FILT
Copper	**0.11**	0.015	0.25	"	10	"	"	06/07/18	"	FILT, J
Calcium	**74**	5.0	5.0	"	"	"	"	"	"	FILT
Iron	ND	0.35	10	"	"	"	"	"	"	FILT, R-07
Magnesium	**5.0**	3.6	5.0	"	"	"	"	"	"	FILT
Antimony	ND		0.50	ug/l	1	8060521	06/05/18	06/07/18	200.8	FILT
Arsenic	**6.0**		5.0	"	10	"	"	06/08/18	"	FILT
Barium	**5.9**		5.0	"	"	"	"	"	"	FILT
Cadmium	ND		0.50	"	1	"	"	06/07/18	"	FILT
Chromium	ND		0.50	"	"	"	"	"	"	FILT
Cobalt	ND		0.50	"	"	"	"	"	"	FILT
Lead	ND		0.50	"	"	"	"	"	"	FILT
Nickel	ND		0.50	"	"	"	"	"	"	FILT
Selenium	ND		5.0	"	10	"	"	06/08/18	"	FILT, R-07
Zinc	ND		5.0	"	"	"	"	"	"	FILT, R-07
Cold Vapor Extraction EPA 7470/7471										
Mercury	ND	0.000022	0.00050	mg/l	1	8060438	06/04/18	06/05/18	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods										
Oil & Grease	**1.70**	1.40	5.00	mg/l	1	8060425	06/04/18	06/05/18	EPA 1664B	J
Specific Conductance (EC)	**14000**		10.0	umhos/cm	"	8060126	06/01/18	06/04/18	SM2510b mod.	
pH	**10**		0.10	pH Units	"	8060125	06/01/18	06/01/18	SM4500	
Total Dissolved Solids	**9300**	36	55	mg/l	"	8060423	06/04/18	06/04/18	TDS by SM2540C	



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26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

TW-1

T181813-03(Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.										
Anions by EPA Method 300.0										
Chloride	**4130**	1.27	100	mg/l	20	8060127	06/01/18	06/04/18	EPA 300.0	
Sulfate as SO4	**1390**	6.55	100	"	"	"	"	"	"	
Nitrate as NO3	ND	0.604	10.0	"	"	"	"	"	"	HLD-1, R-07

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

TW-2

T181813-04(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods										
Potassium	**44**		5.0	mg/l	10	8060520	06/05/18	06/07/18	EPA 200.7	FILT
Sodium	**650**		50	"	100	"	"	06/07/18	"	FILT
Copper	**0.089**	0.015	0.25	"	10	"	"	06/07/18	"	FILT, J
Calcium	**83**	5.0	5.0	"	"	"	"	"	"	FILT
Iron	**5.4**	0.35	10	"	"	"	"	"	"	FILT, R-07, J
Magnesium	ND	3.6	5.0	"	"	"	"	"	"	FILT, R-07
Antimony	ND		0.50	ug/l	1	8060521	06/05/18	06/07/18	200.8	FILT
Arsenic	**6.3**		5.0	"	10	"	"	06/08/18	"	FILT
Barium	**23**		5.0	"	"	"	"	"	"	FILT
Cadmium	ND		0.50	"	1	"	"	06/07/18	"	FILT
Chromium	ND		0.50	"	"	"	"	"	"	FILT
Cobalt	ND		0.50	"	"	"	"	"	"	FILT
Lead	ND		0.50	"	"	"	"	"	"	FILT
Nickel	ND		5.0	"	10	"	"	06/08/18	"	FILT, R-07
Selenium	ND		5.0	"	"	"	"	"	"	FILT, R-07
Zinc	**76**		5.0	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471										
Mercury	ND	0.000022	0.00050	mg/l	1	8060438	06/04/18	06/05/18	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods										
Oil & Grease	ND	1.40	5.00	mg/l	1	8060425	06/04/18	06/05/18	EPA 1664B	
Specific Conductance (EC)	**5590**		10.0	umhos/cm	"	8060126	06/01/18	06/04/18	SM2510b mod.	
pH	**9.6**		0.10	pH Units	"	8060125	06/01/18	06/01/18	SM4500	
Total Dissolved Solids	**2800**	36	55	mg/l	"	8060423	06/04/18	06/04/18	TDS by SM2540C	

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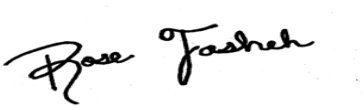
Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

TW-2

T181813-04(Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.										
Anions by EPA Method 300.0										
Chloride	**1540**	0.635	50.0	mg/l	10	8060127	06/01/18	06/04/18	EPA 300.0	
Sulfate as SO4	**439**	3.27	50.0	"	"	"	"	"	"	
Nitrate as NO3	ND	0.302	5.00	"	"	"	"	"	"	HLD-1, R-07



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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

PW-2

T181813-05(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods										
Potassium	**9.8**		5.0	mg/l	10	8060520	06/05/18	06/07/18	EPA 200.7	FILT
Sodium	**1000**		5.0	"	"	"	"	"	"	FILT
Copper	**0.099**	0.015	0.25	"	"	"	"	"	"	FILT, J
Calcium	**51**	5.0	5.0	"	"	"	"	06/07/18	"	FILT
Iron	ND	0.35	10	"	"	"	"	"	"	FILT, R-07
Magnesium	**4.1**	3.6	5.0	"	"	"	"	"	"	FILT, J
Antimony	ND		0.50	ug/l	1	8060521	06/05/18	06/07/18	200.8	FILT
Arsenic	**19**		5.0	"	10	"	"	06/08/18	"	FILT
Barium	**14**		5.0	"	"	"	"	"	"	FILT
Cadmium	ND		0.50	"	1	"	"	06/07/18	"	FILT
Chromium	ND		0.50	"	"	"	"	"	"	FILT
Cobalt	ND		0.50	"	"	"	"	"	"	FILT
Lead	ND		0.50	"	"	"	"	"	"	FILT
Nickel	ND		0.50	"	"	"	"	"	"	FILT
Selenium	ND		5.0	"	10	"	"	06/08/18	"	FILT, R-07
Zinc	ND		5.0	"	"	"	"	"	"	FILT, R-07
Cold Vapor Extraction EPA 7470/7471										
Mercury	ND	0.000022	0.00050	mg/l	1	8060438	06/04/18	06/05/18	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods										
Oil & Grease	ND	1.40	5.00	mg/l	1	8060425	06/04/18	06/05/18	EPA 1664B	
Specific Conductance (EC)	**3620**		10.0	umhos/cm	"	8060126	06/01/18	06/04/18	SM2510b mod.	
pH	**8.5**		0.10	pH Units	"	8060125	06/01/18	06/01/18	SM4500	
Total Dissolved Solids	**2000**	36	55	mg/l	"	8060423	06/04/18	06/04/18	TDS by SM2540C	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

PW-2

T181813-05(Water)

SunStar Laboratories, Inc.

Anions by EPA Method 300.0

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluoride	**1.40**	0.126	2.50	mg/l	5	8060127	06/01/18	06/04/18	EPA 300.0	J
Chloride	**865**	0.318	25.0	"	"	"	"	"	"	
Sulfate as SO4	**449**	1.64	25.0	"	"	"	"	"	"	
Nitrate as NO3	ND	0.151	2.50	"	"	"	"	"	"	HLD-1, R-07

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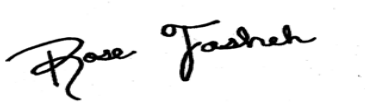
Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

DM-1

T181813-06(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods										
Potassium	**63**		5.0	mg/l	10	8060520	06/05/18	06/07/18	EPA 200.7	FILT
Sodium	**5200**		50	"	100	"	"	06/07/18	"	FILT
Copper	**0.096**	0.015	0.25	"	10	"	"	06/07/18	"	FILT, J
Calcium	**270**	5.0	5.0	"	"	"	"	"	"	FILT
Iron	**0.78**	0.35	10	"	"	"	"	"	"	FILT, J
Magnesium	**64**	3.6	5.0	"	"	"	"	"	"	FILT
Antimony	ND		0.50	ug/l	1	8060521	06/05/18	06/07/18	200.8	FILT
Arsenic	**5.0**		5.0	"	10	"	"	06/08/18	"	FILT
Barium	**30**		5.0	"	"	"	"	"	"	FILT
Cadmium	ND		0.50	"	1	"	"	06/07/18	"	FILT
Chromium	ND		5.0	"	10	"	"	06/08/18	"	FILT, R-07
Cobalt	ND		0.50	"	1	"	"	06/07/18	"	FILT
Lead	ND		5.0	"	10	"	"	06/08/18	"	FILT, R-07
Nickel	ND		5.0	"	"	"	"	"	"	FILT, R-07
Selenium	**5.9**		5.0	"	"	"	"	"	"	FILT
Zinc	**9.5**		5.0	"	"	"	"	"	"	FILT
Cold Vapor Extraction EPA 7470/7471										
Mercury	ND	0.000022	0.00050	mg/l	1	8060438	06/04/18	06/05/18	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods										
Oil & Grease	ND	1.40	5.00	mg/l	1	8060425	06/04/18	06/05/18	EPA 1664B	
Specific Conductance (EC)	**17300**		10.0	umhos/cm	"	8060126	06/01/18	06/04/18	SM2510b mod.	
pH	**7.9**		0.10	pH Units	"	8060125	06/01/18	06/01/18	SM4500	O-09
Total Dissolved Solids	**11000**	36	55	mg/l	"	8060423	06/04/18	06/04/18	TDS by SM2540C	



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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

DM-1

T181813-06(Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.										
Anions by EPA Method 300.0										
Chloride	**5190**	1.27	100	mg/l	20	8060127	06/01/18	06/04/18	EPA 300.0	
Sulfate as SO4	**2030**	6.55	100	"	"	"	"	"	"	
Nitrate as NO3	**14.7**	0.604	10.0	"	"	"	"	"	"	HLD-1

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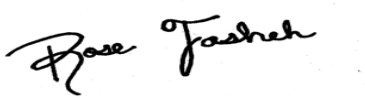
Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

DM-2

T181813-07(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods										
Potassium	**68**		5.0	mg/l	10	8060520	06/05/18	06/07/18	EPA 200.7	FILT
Sodium	**4800**		50	"	100	"	"	06/07/18	"	FILT
Copper	**0.11**	0.015	0.25	"	10	"	"	06/07/18	"	FILT, J
Calcium	**300**	5.0	5.0	"	"	"	"	"	"	FILT
Iron	ND	0.35	10	"	"	"	"	"	"	FILT, R-07
Magnesium	**67**	3.6	5.0	"	"	"	"	"	"	FILT
Antimony	ND		5.0	ug/l	"	8060521	06/05/18	06/08/18	200.8	FILT, R-07
Arsenic	**5.1**		5.0	"	"	"	"	"	"	FILT
Barium	**51**		5.0	"	"	"	"	"	"	FILT
Cadmium	ND		0.50	"	1	"	"	06/07/18	"	FILT
Chromium	**5.0**		5.0	"	10	"	"	06/08/18	"	FILT
Cobalt	ND		0.50	"	1	"	"	06/07/18	"	FILT
Lead	ND		0.50	"	"	"	"	"	"	FILT
Nickel	ND		0.50	"	"	"	"	"	"	FILT
Selenium	**6.3**		5.0	"	10	"	"	06/08/18	"	FILT
Zinc	ND		5.0	"	"	"	"	"	"	FILT, R-07
Cold Vapor Extraction EPA 7470/7471										
Mercury	ND	0.000022	0.00050	mg/l	1	8060438	06/04/18	06/05/18	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods										
Oil & Grease	ND	1.40	5.00	mg/l	1	8060425	06/04/18	06/05/18	EPA 1664B	
Specific Conductance (EC)	**17000**		10.0	umhos/cm	"	8060126	06/01/18	06/04/18	SM2510b mod.	
pH	**7.9**		0.10	pH Units	"	8060125	06/01/18	06/01/18	SM4500	O-09
Total Dissolved Solids	**9900**	36	55	mg/l	"	8060423	06/04/18	06/04/18	TDS by SM2540C	



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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

DM-2

T181813-07(Water)

SunStar Laboratories, Inc.

Anions by EPA Method 300.0

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**6000**	1.27	100	mg/l	20	8060127	06/01/18	06/04/18	EPA 300.0	
Sulfate as SO4	**2280**	6.55	100	"	"	"	"	"	"	
Nitrate as NO3	**17.5**	0.604	10.0	"	"	"	"	"	"	HLD-1

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

DM-3

T181813-08(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods										
Potassium	**61**		5.0	mg/l	10	8060520	06/05/18	06/07/18	EPA 200.7	FILT
Sodium	**4100**		50	"	100	"	"	06/07/18	"	FILT
Copper	**0.11**	0.015	0.25	"	10	"	"	06/07/18	"	FILT, J
Calcium	**260**	5.0	5.0	"	"	"	"	06/07/18	"	FILT
Iron	ND	0.35	10	"	"	"	"	"	"	FILT, R-07
Magnesium	**61**	3.6	5.0	"	"	"	"	"	"	FILT
Antimony	ND		0.50	ug/l	1	8060521	06/05/18	06/07/18	200.8	FILT
Arsenic	**14**		5.0	"	10	"	"	06/08/18	"	FILT
Barium	**15**		5.0	"	"	"	"	"	"	FILT
Cadmium	ND		0.50	"	1	"	"	06/07/18	"	FILT
Chromium	ND		5.0	"	10	"	"	06/08/18	"	FILT, R-07
Cobalt	ND		0.50	"	1	"	"	06/07/18	"	FILT
Lead	ND		0.50	"	"	"	"	"	"	FILT
Nickel	ND		0.50	"	"	"	"	"	"	FILT
Selenium	ND		5.0	"	10	"	"	06/08/18	"	FILT, R-07
Zinc	ND		5.0	"	"	"	"	"	"	FILT, R-07
Cold Vapor Extraction EPA 7470/7471										
Mercury	ND	0.000022	0.00050	mg/l	1	8060438	06/04/18	06/05/18	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods										
Oil & Grease	ND	1.40	5.00	mg/l	1	8060425	06/04/18	06/05/18	EPA 1664B	
Specific Conductance (EC)	**17100**		10.0	umhos/cm	"	8060126	06/01/18	06/04/18	SM2510b mod.	
pH	**7.9**		0.10	pH Units	"	8060125	06/01/18	06/01/18	SM4500	O-09
Total Dissolved Solids	**12000**	36	55	mg/l	"	8060423	06/04/18	06/04/18	TDS by SM2540C	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

DM-3

T181813-08(Water)

SunStar Laboratories, Inc.

Anions by EPA Method 300.0

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**6350**	1.27	100	mg/l	20	8060127	06/01/18	06/04/18	EPA 300.0	
Sulfate as SO4	**2600**	6.55	100	"	"	"	"	"	"	
Nitrate as NO3	**10.7**	0.604	10.0	"	"	"	"	"	"	HLD-1

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

DUP

T181813-09(Water)

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 200 Series Methods										
Potassium	**10**		5.0	mg/l	10	8060520	06/05/18	06/07/18	EPA 200.7	FILT
Sodium	**1100**		5.0	"	"	"	"	"	"	FILT
Copper	**0.11**	0.015	0.25	"	"	"	"	"	"	FILT, J
Calcium	**54**	5.0	5.0	"	"	"	"	"	"	FILT
Iron	ND	0.35	10	"	"	"	"	"	"	FILT, R-07
Magnesium	**4.2**	3.6	5.0	"	"	"	"	"	"	FILT, J
Antimony	ND		0.50	ug/l	1	8060521	06/05/18	06/07/18	200.8	FILT
Arsenic	**12**		5.0	"	10	"	"	06/08/18	"	FILT
Barium	**7.3**		5.0	"	"	"	"	"	"	FILT
Cadmium	ND		0.50	"	1	"	"	06/07/18	"	FILT
Chromium	ND		0.50	"	"	"	"	"	"	FILT
Cobalt	ND		0.50	"	"	"	"	"	"	FILT
Lead	ND		0.50	"	"	"	"	"	"	FILT
Nickel	ND		0.50	"	"	"	"	"	"	FILT
Selenium	ND		5.0	"	10	"	"	06/08/18	"	FILT, R-07
Zinc	ND		5.0	"	"	"	"	"	"	FILT, R-07
Cold Vapor Extraction EPA 7470/7471										
Mercury	ND	0.000022	0.00050	mg/l	1	8060438	06/04/18	06/05/18	EPA 7470A Water	
Conventional Chemistry Parameters by APHA/EPA/ASTM Methods										
Oil & Grease	ND	1.40	5.00	mg/l	1	8060425	06/04/18	06/05/18	EPA 1664B	
Specific Conductance (EC)	**3630**		10.0	umhos/cm	"	8060126	06/01/18	06/04/18	SM2510b mod.	
pH	**8.2**		0.10	pH Units	"	8060125	06/01/18	06/01/18	SM4500	O-04
Total Dissolved Solids	**2000**	36	55	mg/l	"	8060423	06/04/18	06/04/18	TDS by SM2540C	

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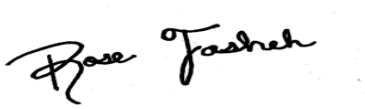
Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

DUP

T181813-09(Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.										
Anions by EPA Method 300.0										
Chloride	**857**	0.318	25.0	mg/l	5	8060127	06/01/18	06/04/18	EPA 300.0	
Sulfate as SO4	**445**	1.64	25.0	"	"	"	"	"	"	
Nitrate as NO3	ND	0.151	2.50	"	"	"	"	"	"	HLD-1, R-07



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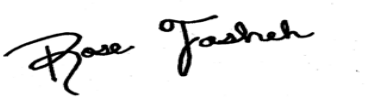
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

Metals by EPA 200 Series Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8060520 - EPA 3010A											
Blank (8060520-BLK1)					Prepared: 06/05/18 Analyzed: 06/07/18						
Potassium	ND		0.50	mg/l							FILT
Sodium	ND		0.50	"							FILT
Copper	ND	0.002	0.025	"							FILT
Calcium	ND	0.50	0.50	"							FILT
Iron	ND	0.035	1.0	"							FILT
Magnesium	ND	0.36	0.50	"							FILT
LCS (8060520-BS1)					Prepared: 06/05/18 Analyzed: 06/07/18						
Copper	0.121	0.002	0.025	mg/l	0.100		121	75-125			FILT
Iron	0.090	0.035	1.0	"	0.100		90.3	75-125			FILT, J
Matrix Spike (8060520-MS1)		**Source: T181813-01**			Prepared: 06/05/18 Analyzed: 06/07/18						
Copper	0.215	0.015	0.25	mg/l	0.100	0.082	133	65-135			FILT, J
Iron	ND	0.35	10	"	0.100	ND		65-135			FILT, QM-01
Matrix Spike Dup (8060520-MSD1)		**Source: T181813-01**			Prepared: 06/05/18 Analyzed: 06/07/18						
Copper	0.212	0.015	0.25	mg/l	0.100	0.082	130	65-135	1.34	30	FILT, J
Iron	ND	0.35	10	"	0.100	ND		65-135		30	FILT, QM-01
Batch 8060521 - EPA 3010A											
Blank (8060521-BLK1)					Prepared: 06/05/18 Analyzed: 06/07/18						
Antimony	ND		0.50	ug/l							FILT
Arsenic	ND		0.50	"							FILT
Barium	ND		0.50	"							FILT
Cadmium	ND		0.50	"							FILT
Chromium	ND		0.50	"							FILT
Cobalt	ND		0.50	"							FILT
Lead	ND		0.50	"							FILT
Nickel	ND		0.50	"							FILT
Selenium	ND		0.50	"							FILT



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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

Metals by EPA 200 Series Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8060521 - EPA 3010A											
Blank (8060521-BLK1)					Prepared: 06/05/18 Analyzed: 06/07/18						
Zinc	ND		0.50	ug/l							FILT
LCS (8060521-BS1)					Prepared: 06/05/18 Analyzed: 06/07/18						
Arsenic	53.9		0.50	ug/l	50.0		108	75-125			FILT
Barium	47.0		0.50	"	50.0		94.1	75-125			FILT
Cadmium	51.7		0.50	"	50.0		103	75-125			FILT
Chromium	51.2		0.50	"	50.0		102	75-125			FILT
Lead	44.8		0.50	"	50.0		89.7	75-125			FILT
Matrix Spike (8060521-MS1)		**Source: T181813-01**			Prepared: 06/05/18 Analyzed: 06/07/18						
Arsenic	53.8		0.50	ug/l	50.0	1.36	105	75-125			FILT
Barium	63.0		0.50	"	50.0	12.5	101	75-125			FILT
Cadmium	44.2		0.50	"	50.0	0.0956	88.2	75-125			FILT
Chromium	61.2		0.50	"	50.0	0.0744	122	75-125			FILT
Lead	49.5		0.50	"	50.0	0.178	98.6	75-125			FILT
Matrix Spike Dup (8060521-MSD1)		**Source: T181813-01**			Prepared: 06/05/18 Analyzed: 06/07/18						
Arsenic	55.4		0.50	ug/l	50.0	1.36	108	75-125	2.90	20	FILT
Barium	63.9		0.50	"	50.0	12.5	103	75-125	1.47	20	FILT
Cadmium	45.3		0.50	"	50.0	0.0956	90.4	75-125	2.49	20	FILT
Chromium	62.9		0.50	"	50.0	0.0744	126	75-125	2.62	20	FILT, QR-04
Lead	49.2		0.50	"	50.0	0.178	98.1	75-125	0.532	20	FILT

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

Cold Vapor Extraction EPA 7470/7471 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8060438 - EPA 7470A Water											
Blank (8060438-BLK1)					Prepared: 06/04/18 Analyzed: 06/05/18						
Mercury	ND	0.000022	0.00050	mg/l							
LCS (8060438-BS1)					Prepared: 06/04/18 Analyzed: 06/05/18						
Mercury	0.00483	0.000022	0.00050	mg/l	0.00500		96.6	80-120			
Matrix Spike (8060438-MS1)		**Source: T181813-01**			Prepared: 06/04/18 Analyzed: 06/05/18						
Mercury	0.00464	0.000022	0.00050	mg/l	0.00500	ND	92.9	75-125			
Matrix Spike Dup (8060438-MSD1)		**Source: T181813-01**			Prepared: 06/04/18 Analyzed: 06/05/18						
Mercury	0.00441	0.000022	0.00050	mg/l	0.00500	ND	88.2	75-125	5.20	20	

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

Conventional Chemistry Parameters by APHA/EPA/ASTM Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8060125 - General Preparation											
Duplicate (8060125-DUP1)		**Source: T181813-01**			Prepared & Analyzed: 06/01/18						
pH	8.74		0.10	pH Units		8.36			4.44	20	
Batch 8060126 - General Preparation											
Duplicate (8060126-DUP1)		**Source: T181813-01**			Prepared: 06/01/18 Analyzed: 06/04/18						
Specific Conductance (EC)	2620		10.0	umhos/cm		2640			0.760	15	
Batch 8060423 - General Preparation											
Blank (8060423-BLK1)					Prepared & Analyzed: 06/04/18						
Total Dissolved Solids	ND	36	55	mg/l							
LCS (8060423-BS1)					Prepared & Analyzed: 06/04/18						
Total Dissolved Solids	490	36	55	mg/l	500		98.0	80-120			
Duplicate (8060423-DUP1)		**Source: T181813-01**			Prepared & Analyzed: 06/04/18						
Total Dissolved Solids	1320	36	55	mg/l		1320			0.303	5	
Batch 8060425 - General Preparation											
Blank (8060425-BLK1)					Prepared: 06/04/18 Analyzed: 06/05/18						
Oil & Grease	ND	1.40	5.00	mg/l							
LCS (8060425-BS1)					Prepared: 06/04/18 Analyzed: 06/05/18						
Oil & Grease	33.4	1.40	5.00	mg/l	40.0		83.5	83-101			

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Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

Conventional Chemistry Parameters by APHA/EPA/ASTM Methods - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8060425 - General Preparation											
LCS Dup (8060425-BSD1)					Prepared: 06/04/18 Analyzed: 06/05/18						
Oil & Grease	34.4	1.40	5.00	mg/l	40.0		86.0	83-101	2.95	11	

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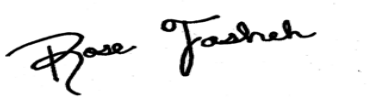
Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

Anions by EPA Method 300.0 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8060127 - General Preparation											
Blank (8060127-BLK1)					Prepared & Analyzed: 06/01/18						
Nitrate as NO3	ND	0.0302	0.500	mg/l							
LCS (8060127-BS1)					Prepared & Analyzed: 06/01/18						
Chloride	26.0	0.0635	5.00	mg/l	25.0		104	75-125			
Sulfate as SO4	26.1	0.327	5.00	"	25.0		104	75-125			
Nitrate as NO3	26.1	0.0302	0.500	"	25.0		104	75-125			
Matrix Spike (8060127-MS1)		**Source: T181813-02**			Prepared: 06/01/18 Analyzed: 06/04/18						
Chloride	6910	1.27	100	mg/l	25.0	6040	NR	75-125			QM-02
Sulfate as SO4	6300	6.55	100	"	25.0	5520	NR	75-125			QM-02
Nitrate as NO3	30.8	0.0302	0.500	"	25.0	12.4	73.6	75-125			QM-05
Matrix Spike Dup (8060127-MSD1)		**Source: T181813-02**			Prepared: 06/01/18 Analyzed: 06/04/18						
Chloride	7230	1.27	100	mg/l	25.0	6040	NR	75-125	4.63	20	QM-02
Sulfate as SO4	6600	6.55	100	"	25.0	5520	NR	75-125	4.53	20	QM-02
Nitrate as NO3	28.9	0.0302	0.500	"	25.0	12.4	65.9	75-125	6.45	20	QM-05



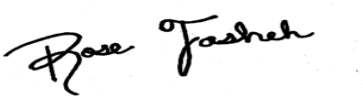
SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Northstar Environmental Remediation	Project: Genesis Solar Groundwater	
26225 Enterprise Court	Project Number: 196-004-06	**Reported:**
Lake Forest CA, 92630	Project Manager: Arlin Brewster	06/14/18 16:43

Notes and Definitions

R-07	Reporting limit for this compound(s) has been raised to account for dilution necessary due to high levels of interfering compound(s) and/or matrix affect.
QR-04	The pecent recovery and/or RPD was outside acceptance criteria. Results accepted based upon percent recovery results in duplicate QC sample and the CCV and CCB results.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS was within acceptance criteria. The data is acceptable as no negative impact on data is expected.
QM-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
QM-01	The % recovery is outside of established control limits due to matrix interference and/or sample dilution due to matrix effect. The batch was accepted based on acceptable LCS recovery.
O-09	The sample was analyzed outside the EPA recommended holding time of 24 hours.
O-04	This sample was received and analyzed outside the EPA recommended holding time.
J	Detected but below the Standard Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
HLD-1	Sample was originally analyzed within EPA recommended holding time. However, subsequent re-analysis due to QC failure, occured outside EPA recommended holding time.
FILT	The sample was filtered prior to analysis.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the Method Detection Limit (MDL)
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: Northstar Environmental Remediation _____ Date: 06/01/2018 Page: 1 of 1

Address: 26225 Enterprise Court, Lake Forest, CA 92630 _____ Project Name: Genesis Solar Groundwater _____

Phone: 949-274-1719 _____ Fax: _____ Collector: Arlin Brewster _____ Client Project #: 196-004-06 _____

Project Manager: Arlin Brewster _____ Batch #: T181813 EDF #: T10000006093 _____

Sample ID	Date Sampled	Time	Sample Type	Container Type	200.7 - Metals: Ca, Cu, Na, K, Fe, Mg (FIELD FILTERED)	200.8 - Metals: Sb, As, Ba, Cd, Cr, Co, Pb, Ni, Se, Zn (F.F.)	300.0 - Chloride, Nitrate, Sulfate	1664 - Oil and Grease	7470A - Mercury	9040 - pH	SM2510B - Conductivity, Specific	SM2540C - Total Dis. Solids	8015M - Therminol (Subcontract)	Deuterium, Oxygen-18 (Subcont.)		Laboratory ID #	Comments/Preservative	Total # of containers
23a	06/01/18	0535	W	Various	X	X	X	X	X	X	X	X	X	X		01		6
OBS-1		1100	W	Various	X	X	X	X	X	X	X	X	X	X		02		6
TW-1		1110	W	Various	X	X	X	X	X	X	X	X	X	X		03		6
TW-2		0630	W	Various	X	X	X	X	X	X	X	X	X	X		04		6
PW-2		0915	W	Various	X	X	X	X	X	X	X	X	X	X		05		6
DM-1	05/30/18	1630	W	Various	X	X	X	X	X	X	X	X	X	X		06		6
DM-2	05/30/18	1730	W	Various	X	X	X	X	X	X	X	X	X	X		07		6
DM-3	05/30/18	1830	W	Various	X	X	X	X	X	X	X	X	X	X		08		6
DUP	N/A	N/A	W	Various	X	X	X	X	X	X	X	X	X	X		09		6
Field Blank	N/A	N/A	W	Various												10	HOLD	2
Trip Blank	N/A	N/A	W	Various												11	HOLD	4

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
Arlin Brewster	06/01/18 @ 1550		6-1-18 1550
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers: 60

Chain of Custody seals Y/N/NA: NA

Seals intact? Y/N/NA: NA

Received good condition/cold: 5.1 / 4.6 / 4.1

Turn around time: Standard **

Notes

** Deuterium & Oxygen-18 subcontract has 10 day TAT

Reporting limits must match previous reports

Sample disposal Instructions: Disposal @ $2.00 each ____ Return to client ____ Pickup ____

SunStar Laboratories — Celebrating 20 Years!

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T18181Z

Client Name: NORTHSTAR ENV. Project: GENESIS SOLAR GROUNDWATER

Delivered by: ☒ Client ☐ SunStar Courier ☐ GSO ☐ FedEx ☐ Other

If Courier, Received by: _____ Date/Time Courier Received: _____

Lab Received by: DAN Date/Time Lab Received: 6.1.18 / 15:50

Total number of coolers received: 3

Temperature: Cooler #1 5.3	°C +/- the CF (- 0.2°C) = 5.1	°C corrected temperature	
Temperature: Cooler #2 4.8	°C +/- the CF (- 0.2°C) = 4.6	°C corrected temperature	
Temperature: Cooler #3 4.3	°C +/- the CF (- 0.2°C) = 4.1	°C corrected temperature	
Temperature criteria = ≤ 6°C (no frozen containers)	Within criteria?	☒ **Yes** ☐ **No**	
If NO:			
Samples received on ice?	☐ Yes	☐ **No → Complete Non-Conformance Sheet**	
If on ice, samples received same day collected?	☐ Yes → Acceptable	☐ **No → Complete Non-Conformance Sheet**	

Custody seals intact on cooler/sample	☐ Yes	☐ No*	☒ N/A
Sample containers intact	☒ Yes	☐ No*	
Sample labels match Chain of Custody IDs	☒ Yes	☐ No*	
Total number of containers received match COC	☒ Yes	☐ No*	
Proper containers received for analyses requested on COC	☒ Yes	☐ No*	
Proper preservative indicated on COC/containers for analyses requested	☒ Yes	☐ No*	☐ N/A
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times	☒ **Yes**	☐ **No***	

* Complete Non-Conformance Receiving Sheet if checked

Cooler/Sample Review - Initials and date: SI 6.1.18

Comments:

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T181813

Client:	**Northstar Environmental Remediation**	**Project Manager:**	**Rose Fasheh**
Project:	**Genesis Solar Groundwater**	**Project Number:**	**196-004-06**

Report To:
Northstar Environmental Remediation
Arlin Brewster
26225 Enterprise Court
Lake Forest, CA 92630

Date Due:	06/08/18 17:00 (5 day TAT)		
Received By:	Dan Marteski	Date Received:	06/01/18 15:50
Logged In By:	Sunny Lounethone	Date Logged In:	06/01/18 16:35

Samples Received at: **5.1°C**
Custody Seals No Received On Ice Yes
Containers Intact Yes
COC/Labels Agree Yes
Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
T181813-01 23a [Water] Sampled 06/01/18 05:35 (GMT-08:00) Pacific Time (US &				
1664	06/08/18 15:00	5	06/29/18 05:35	Oil & Grease; MDL
200.7	06/08/18 15:00	5	11/28/18 05:35	Ca,Cu,Na,K,Fe,Mg; MDL (Field Filtered)
200.8	06/08/18 15:00	5	11/28/18 05:35	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	06/08/18 15:00	5	06/29/18 05:35	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	06/08/18 15:00	5	06/03/18 05:35	Nitrate
7470/71 Hg	06/08/18 15:00	5	08/30/18 05:35	MDL
Conductivity	06/08/18 15:00	5	06/29/18 05:35	
pH water 9040	06/08/18 15:00	5	06/02/18 05:35	
TDS-160.1	06/08/18 15:00	5	06/08/18 05:35	
T181813-02 OBS-1 [Water] Sampled 06/01/18 11:00 (GMT-08:00) Pacific Time (US &				
1664	06/08/18 15:00	5	06/29/18 11:00	Oil & Grease; MDL
200.7	06/08/18 15:00	5	11/28/18 11:00	Ca,Cu,Na,K,Fe,Mg; MDL (Field Filtered)
200.8	06/08/18 15:00	5	11/28/18 11:00	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	06/08/18 15:00	5	06/29/18 11:00	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	06/08/18 15:00	5	06/03/18 11:00	Nitrate
7470/71 Hg	06/08/18 15:00	5	08/30/18 11:00	MDL
Conductivity	06/08/18 15:00	5	06/29/18 11:00	
pH water 9040	06/08/18 15:00	5	06/02/18 11:00	
TDS-160.1	06/08/18 15:00	5	06/08/18 11:00	

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T181813

Client:	**Northstar Environmental Remediation**	**Project Manager:**	**Rose Fasheh**
Project:	**Genesis Solar Groundwater**	**Project Number:**	**196-004-06**

Analysis	Due	TAT	Expires	Comments
T181813-03 TW-1 [Water] Sampled 06/01/18 11:10 (GMT-08:00) Pacific Time (US &				
1664	06/08/18 15:00	5	06/29/18 11:10	Oil & Grease; MDL
200.7	06/08/18 15:00	5	11/28/18 11:10	Ca,Cu,Na,K,Fe,Mg; MDL (Field Filtered)
200.8	06/08/18 15:00	5	11/28/18 11:10	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	06/08/18 15:00	5	06/29/18 11:10	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	06/08/18 15:00	5	06/03/18 11:10	Nitrate
7470/71 Hg	06/08/18 15:00	5	08/30/18 11:10	MDL
Conductivity	06/08/18 15:00	5	06/29/18 11:10	
pH water 9040	06/08/18 15:00	5	06/02/18 11:10	
TDS-160.1	06/08/18 15:00	5	06/08/18 11:10	
T181813-04 TW-2 [Water] Sampled 06/01/18 06:30 (GMT-08:00) Pacific Time (US &				
1664	06/08/18 15:00	5	06/29/18 06:30	Oil & Grease; MDL
200.7	06/08/18 15:00	5	11/28/18 06:30	Ca,Cu,Na,K,Fe,Mg; MDL (Field Filtered)
200.8	06/08/18 15:00	5	11/28/18 06:30	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	06/08/18 15:00	5	06/29/18 06:30	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	06/08/18 15:00	5	06/03/18 06:30	Nitrate
7470/71 Hg	06/08/18 15:00	5	08/30/18 06:30	MDL
Conductivity	06/08/18 15:00	5	06/29/18 06:30	
pH water 9040	06/08/18 15:00	5	06/02/18 06:30	
TDS-160.1	06/08/18 15:00	5	06/08/18 06:30	
T181813-05 PW-2 [Water] Sampled 06/01/18 09:15 (GMT-08:00) Pacific Time (US &				**Fluoride added per client request (Arlin, 6/1)**
1664	06/08/18 15:00	5	06/29/18 09:15	Oil & Grease; MDL
200.7	06/08/18 15:00	5	11/28/18 09:15	Ca,Cu,Na,K,Fe,Mg; MDL (Field Filtered)
200.8	06/08/18 15:00	5	11/28/18 09:15	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	06/08/18 15:00	5	06/29/18 09:15	Chloride,Sulfate, Fluoride only
300.0 - NO2, NO3, PO4	06/08/18 15:00	5	06/03/18 09:15	Nitrate
7470/71 Hg	06/08/18 15:00	5	08/30/18 09:15	MDL
Conductivity	06/08/18 15:00	5	06/29/18 09:15	
pH water 9040	06/08/18 15:00	5	06/02/18 09:15	
TDS-160.1	06/08/18 15:00	5	06/08/18 09:15	

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T181813

Client:	**Northstar Environmental Remediation**	**Project Manager:**	**Rose Fasheh**
Project:	**Genesis Solar Groundwater**	**Project Number:**	**196-004-06**

Analysis	Due	TAT	Expires	Comments
T181813-06 DM-1 [Water] Sampled 05/30/18 16:30 (GMT-08:00) Pacific Time (US &				
1664	06/08/18 15:00	5	06/27/18 16:30	Oil & Grease; MDL
200.7	06/08/18 15:00	5	11/26/18 16:30	Ca,Cu,Na,K,Fe,Mg; MDL (Field Filtered)
200.8	06/08/18 15:00	5	11/26/18 16:30	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	06/08/18 15:00	5	06/27/18 16:30	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	06/08/18 15:00	5	06/01/18 16:30	Nitrate
7470/71 Hg	06/08/18 15:00	5	08/28/18 16:30	MDL
Conductivity	06/08/18 15:00	5	06/27/18 16:30	
pH water 9040	06/08/18 15:00	5	05/31/18 16:30	
TDS-160.1	06/08/18 15:00	5	06/06/18 16:30	
T181813-07 DM-2 [Water] Sampled 05/30/18 17:30 (GMT-08:00) Pacific Time (US &				
1664	06/08/18 15:00	5	06/27/18 17:30	Oil & Grease; MDL
200.7	06/08/18 15:00	5	11/26/18 17:30	Ca,Cu,Na,K,Fe,Mg; MDL (Field Filtered)
200.8	06/08/18 15:00	5	11/26/18 17:30	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	06/08/18 15:00	5	06/27/18 17:30	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	06/08/18 15:00	5	06/01/18 17:30	Nitrate
7470/71 Hg	06/08/18 15:00	5	08/28/18 17:30	MDL
Conductivity	06/08/18 15:00	5	06/27/18 17:30	
pH water 9040	06/08/18 15:00	5	05/31/18 17:30	
TDS-160.1	06/08/18 15:00	5	06/06/18 17:30	
T181813-08 DM-3 [Water] Sampled 05/30/18 18:30 (GMT-08:00) Pacific Time (US &				
1664	06/08/18 15:00	5	06/27/18 18:30	Oil & Grease; MDL
200.7	06/08/18 15:00	5	11/26/18 18:30	Ca,Cu,Na,K,Fe,Mg; MDL (Field Filtered)
200.8	06/08/18 15:00	5	11/26/18 18:30	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	06/08/18 15:00	5	06/27/18 18:30	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	06/08/18 15:00	5	06/01/18 18:30	Nitrate
7470/71 Hg	06/08/18 15:00	5	08/28/18 18:30	MDL
Conductivity	06/08/18 15:00	5	06/27/18 18:30	
pH water 9040	06/08/18 15:00	5	05/31/18 18:30	
TDS-160.1	06/08/18 15:00	5	06/06/18 18:30	

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

WORK ORDER

T181813

Client: Northstar Environmental Remediation
Project: Genesis Solar Groundwater
Project Manager: Rose Fasheh
Project Number: 196-004-06

Analysis	Due	TAT	Expires	Comments
T181813-09 DUP [Water] Sampled 05/30/18 00:00 (GMT-08:00) Pacific Time (US &				
1664	06/08/18 15:00	5	06/27/18 00:00	Oil & Grease; MDL
200.7	06/08/18 15:00	5	11/26/18 00:00	Ca,Cu,Na,K,Fe,Mg; MDL (Field Filtered)
200.8	06/08/18 15:00	5	11/26/18 00:00	Sb,As,Ba,Cd,Cr,Co,Pb,Ni,Se,Zn (Field Filtered)
300.0 - F, Cl, Br, SO4	06/08/18 15:00	5	06/27/18 00:00	Chloride,Sulfate only
300.0 - NO2, NO3, PO4	06/08/18 15:00	5	06/01/18 00:00	Nitrate
7470/71 Hg	06/08/18 15:00	5	08/28/18 00:00	MDL
Conductivity	06/08/18 15:00	5	06/27/18 00:00	
pH water 9040	06/08/18 15:00	5	05/31/18 00:00	
TDS-160.1	06/08/18 15:00	5	06/06/18 00:00	
T181813-10 Field Blank [Water] Sampled 05/30/18 00:00 (GMT-08:00) Pacific Time (US &				**HOLD**
[NO ANALYSES]				
T181813-11 Trip Blank [Water] Sampled 05/30/18 00:00 (GMT-08:00) Pacific Time (US &				**HOLD**
[NO ANALYSES]				

Isotech Laboratories, Inc.

T181813-01 23a [Water] Sampled 06/01/18 05:35 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	06/08/18 15:00	5	11/28/18 05:35	Deuterium,Oxygen-18
T181813-02 OBS-1 [Water] Sampled 06/01/18 11:00 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	06/08/18 15:00	5	11/28/18 11:00	Deuterium,Oxygen-18
T181813-03 TW-1 [Water] Sampled 06/01/18 11:10 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	06/08/18 15:00	5	11/28/18 11:10	Deuterium,Oxygen-18
T181813-04 TW-2 [Water] Sampled 06/01/18 06:30 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	06/08/18 15:00	5	11/28/18 06:30	Deuterium,Oxygen-18
T181813-05 PW-2 [Water] Sampled 06/01/18 09:15 (GMT-08:00) Pacific Time (US &				**Fluoride added per client request (Arlin, 6/1)**
Misc Water Testing #2	06/08/18 15:00	5	11/28/18 09:15	Deuterium,Oxygen-18

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T181813

Client:	**Northstar Environmental Remediation**	**Project Manager:**	**Rose Fasheh**
Project:	**Genesis Solar Groundwater**	**Project Number:**	**196-004-06**

Analysis	Due	TAT	Expires	Comments
Isotech Laboratories, Inc.				
T181813-06 DM-1 [Water] Sampled 05/30/18 16:30 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	06/08/18 15:00	5	11/26/18 16:30	Deuterium,Oxygen-18
T181813-07 DM-2 [Water] Sampled 05/30/18 17:30 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	06/08/18 15:00	5	11/26/18 17:30	Deuterium,Oxygen-18
T181813-08 DM-3 [Water] Sampled 05/30/18 18:30 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	06/08/18 15:00	5	11/26/18 18:30	Deuterium,Oxygen-18
T181813-09 DUP [Water] Sampled 05/30/18 00:00 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #2	06/08/18 15:00	5	11/26/18 00:00	Deuterium,Oxygen-18
Test America Inc.				
T181813-01 23a [Water] Sampled 06/01/18 05:35 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	06/08/18 15:00	5	11/28/18 05:35	8015M- Therminol
T181813-02 OBS-1 [Water] Sampled 06/01/18 11:00 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	06/08/18 15:00	5	11/28/18 11:00	8015M- Therminol
T181813-03 TW-1 [Water] Sampled 06/01/18 11:10 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	06/08/18 15:00	5	11/28/18 11:10	8015M- Therminol
T181813-04 TW-2 [Water] Sampled 06/01/18 06:30 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	06/08/18 15:00	5	11/28/18 06:30	8015M- Therminol
T181813-05 PW-2 [Water] Sampled 06/01/18 09:15 (GMT-08:00) Pacific Time (US &				**Fluoride added per client request (Arlin, 6/1)**
Misc Water Testing #1	06/08/18 15:00	5	11/28/18 09:15	8015M- Therminol
T181813-06 DM-1 [Water] Sampled 05/30/18 16:30 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	06/08/18 15:00	5	11/26/18 16:30	8015M- Therminol

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T181813

Client:	**Northstar Environmental Remediation**	**Project Manager:**	**Rose Fasheh**
Project:	**Genesis Solar Groundwater**	**Project Number:**	**196-004-06**

Analysis	Due	TAT	Expires	Comments
Test America Inc.				
T181813-07 DM-2 [Water] Sampled 05/30/18 17:30 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	06/08/18 15:00	5	11/26/18 17:30	8015M- Therminol
T181813-08 DM-3 [Water] Sampled 05/30/18 18:30 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	06/08/18 15:00	5	11/26/18 18:30	8015M- Therminol
T181813-09 DUP [Water] Sampled 05/30/18 00:00 (GMT-08:00) Pacific Time (US &				
Misc Water Testing #1	06/08/18 15:00	5	11/26/18 00:00	8015M- Therminol

Reviewed By

Date

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-213039-1
Client Project/Site: T181813

For:
SunStar Laboratories Inc
25712 Commercentre Drive
Lake Forest, California 92630

Attn: Rose Fasheh

Authorized for release by:
6/11/2018 11:45:03 AM

Danielle Roberts, Senior Project Manager
(949)261-1022
danielle.roberts@testamericainc.com

Table of Contents

Sample Summary

Client: SunStar Laboratories Inc
Project/Site: T181813

TestAmerica Job ID: 440-213039-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-213039-1	T181813-01	Water	06/01/18 05:35	06/07/18 14:00
440-213039-2	T181813-02	Water	06/01/18 11:00	06/07/18 14:00
440-213039-3	T181813-03	Water	06/01/18 11:10	06/07/18 14:00
440-213039-4	T181813-04	Water	06/01/18 06:30	06/07/18 14:00
440-213039-5	T181813-05	Water	06/01/18 09:15	06/07/18 14:00
440-213039-6	T181813-06	Water	05/30/18 16:30	06/07/18 14:00
440-213039-7	T181813-07	Water	05/30/18 17:30	06/07/18 14:00
440-213039-8	T181813-08	Water	05/30/18 18:30	06/07/18 14:00
440-213039-9	T181813-09	Water	05/30/18 00:01	06/07/18 14:00

Job ID: 440-213039-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-213039-1

Comments
No additional comments.

Receipt
The samples were received on 6/7/2018 2:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.7º C.

GC Semi VOA
Method(s) 8015B: Insufficient 8015-DRO sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch preparation batch 440-480999 and analytical batch 440-481075. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch: (LCS 440-480999/18-A)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 3510C 8015Bpreparation batch 440-480999.

Method(s) 3510C: Samples were preserved in sulfuric acid.

T181813-01 (440-213039-1), T181813-02 (440-213039-2), T181813-03 (440-213039-3), T181813-04 (440-213039-4), T181813-05 (440-213039-5), T181813-06 (440-213039-6), T181813-07 (440-213039-7), T181813-08 (440-213039-8) and T181813-09 (440-213039-9)

Method(s) 3510C: Due to lab error the sample(s) was prepped and analyzed outside of holding time.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: SunStar Laboratories Inc
Project/Site: T181813

TestAmerica Job ID: 440-213039-1

Client Sample ID: T181813-01 — Lab Sample ID: 440-213039-1

No Detections.

Client Sample ID: T181813-02 — Lab Sample ID: 440-213039-2

No Detections.

Client Sample ID: T181813-03 — Lab Sample ID: 440-213039-3

No Detections.

Client Sample ID: T181813-04 — Lab Sample ID: 440-213039-4

No Detections.

Client Sample ID: T181813-05 — Lab Sample ID: 440-213039-5

No Detections.

Client Sample ID: T181813-06 — Lab Sample ID: 440-213039-6

No Detections.

Client Sample ID: T181813-07 — Lab Sample ID: 440-213039-7

No Detections.

Client Sample ID: T181813-08 — Lab Sample ID: 440-213039-8

No Detections.

Client Sample ID: T181813-09 — Lab Sample ID: 440-213039-9

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: T181813-01
Lab Sample ID: 440-213039-1
Date Collected: 06/01/18 05:35
Matrix: Water
Date Received: 06/07/18 14:00

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		06/08/18 05:53	06/08/18 14:18	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		06/08/18 05:53	06/08/18 14:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*63*		*45 - 120*	*06/08/18 05:53*	*06/08/18 14:18*	*1*

Client Sample ID: T181813-02
Lab Sample ID: 440-213039-2
Date Collected: 06/01/18 11:00
Matrix: Water
Date Received: 06/07/18 14:00

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		06/08/18 05:53	06/08/18 14:41	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		06/08/18 05:53	06/08/18 14:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*72*		*45 - 120*	*06/08/18 05:53*	*06/08/18 14:41*	*1*

Client Sample ID: T181813-03
Lab Sample ID: 440-213039-3
Date Collected: 06/01/18 11:10
Matrix: Water
Date Received: 06/07/18 14:00

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.12	0.023	mg/L		06/08/18 05:53	06/08/18 15:04	1
1,1'-Biphenyl	ND		0.12	0.023	mg/L		06/08/18 05:53	06/08/18 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*71*		*45 - 120*	*06/08/18 05:53*	*06/08/18 15:04*	*1*

Client Sample ID: T181813-04
Lab Sample ID: 440-213039-4
Date Collected: 06/01/18 06:30
Matrix: Water
Date Received: 06/07/18 14:00

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		06/08/18 05:53	06/08/18 15:26	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		06/08/18 05:53	06/08/18 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*67*		*45 - 120*	*06/08/18 05:53*	*06/08/18 15:26*	*1*

Client Sample ID: T181813-05
Lab Sample ID: 440-213039-5
Date Collected: 06/01/18 09:15
Matrix: Water
Date Received: 06/07/18 14:00

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.11	0.022	mg/L		06/08/18 05:53	06/08/18 15:49	1
1,1'-Biphenyl	ND		0.11	0.022	mg/L		06/08/18 05:53	06/08/18 15:49	1

Client Sample ID: T181813-05
Date Collected: 06/01/18 09:15
Date Received: 06/07/18 14:00

Lab Sample ID: 440-213039-5
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	53		45 - 120	06/08/18 05:53	06/08/18 15:49	1

Client Sample ID: T181813-06
Date Collected: 05/30/18 16:30
Date Received: 06/07/18 14:00

Lab Sample ID: 440-213039-6
Matrix: Water

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND	H	0.10	0.021	mg/L		06/08/18 05:53	06/08/18 16:12	1
1,1'-Biphenyl	ND	H	0.10	0.021	mg/L		06/08/18 05:53	06/08/18 16:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	67		45 - 120	06/08/18 05:53	06/08/18 16:12	1

Client Sample ID: T181813-07
Date Collected: 05/30/18 17:30
Date Received: 06/07/18 14:00

Lab Sample ID: 440-213039-7
Matrix: Water

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND	H	0.11	0.023	mg/L		06/08/18 05:53	06/08/18 16:34	1
1,1'-Biphenyl	ND	H	0.11	0.023	mg/L		06/08/18 05:53	06/08/18 16:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	76		45 - 120	06/08/18 05:53	06/08/18 16:34	1

Client Sample ID: T181813-08
Date Collected: 05/30/18 18:30
Date Received: 06/07/18 14:00

Lab Sample ID: 440-213039-8
Matrix: Water

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND	H	0.11	0.022	mg/L		06/08/18 05:53	06/08/18 16:56	1
1,1'-Biphenyl	ND	H	0.11	0.022	mg/L		06/08/18 05:53	06/08/18 16:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	57		45 - 120	06/08/18 05:53	06/08/18 16:56	1

Client Sample ID: T181813-09
Date Collected: 05/30/18 00:01
Date Received: 06/07/18 14:00

Lab Sample ID: 440-213039-9
Matrix: Water

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND	H	0.11	0.022	mg/L		06/08/18 05:53	06/08/18 17:19	1
1,1'-Biphenyl	ND	H	0.11	0.022	mg/L		06/08/18 05:53	06/08/18 17:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	65		45 - 120	06/08/18 05:53	06/08/18 17:19	1

Surrogate Summary

Client: SunStar Laboratories Inc
Project/Site: T181813

TestAmerica Job ID: 440-213039-1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	OTCN1 (45-120)								
440-213039-1	T181813-01	63								
440-213039-2	T181813-02	72								
440-213039-3	T181813-03	71								
440-213039-4	T181813-04	67								
440-213039-5	T181813-05	53								
440-213039-6	T181813-06	67								
440-213039-7	T181813-07	76								
440-213039-8	T181813-08	57								
440-213039-9	T181813-09	65								
LCS 440-480999/18-A	Lab Control Sample	60								
LCSD 440-480999/19-A	Lab Control Sample Dup	78								
MB 440-480999/1-A	Method Blank	60								

Surrogate Legend

OTCN = n-Octacosane

Method Summary

Client: SunStar Laboratories Inc
Project/Site: T181813

TestAmerica Job ID: 440-213039-1

Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL IRV
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Chronicle

Client: SunStar Laboratories Inc
Project/Site: T181813

TestAmerica Job ID: 440-213039-1

Client Sample ID: T181813-01
Date Collected: 06/01/18 05:35
Date Received: 06/07/18 14:00

Lab Sample ID: 440-213039-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			920 mL	1 mL	480999	06/08/18 05:53	L1H	TAL IRV
Total/NA	Analysis	8015B		1			481075	06/08/18 14:18	LMB	TAL IRV

Client Sample ID: T181813-02
Date Collected: 06/01/18 11:00
Date Received: 06/07/18 14:00

Lab Sample ID: 440-213039-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			925 mL	1 mL	480999	06/08/18 05:53	L1H	TAL IRV
Total/NA	Analysis	8015B		1			481075	06/08/18 14:41	LMB	TAL IRV

Client Sample ID: T181813-03
Date Collected: 06/01/18 11:10
Date Received: 06/07/18 14:00

Lab Sample ID: 440-213039-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			855 mL	1 mL	480999	06/08/18 05:53	L1H	TAL IRV
Total/NA	Analysis	8015B		1			481075	06/08/18 15:04	LMB	TAL IRV

Client Sample ID: T181813-04
Date Collected: 06/01/18 06:30
Date Received: 06/07/18 14:00

Lab Sample ID: 440-213039-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			915 mL	1 mL	480999	06/08/18 05:53	L1H	TAL IRV
Total/NA	Analysis	8015B		1			481075	06/08/18 15:26	LMB	TAL IRV

Client Sample ID: T181813-05
Date Collected: 06/01/18 09:15
Date Received: 06/07/18 14:00

Lab Sample ID: 440-213039-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			920 mL	1 mL	480999	06/08/18 05:53	L1H	TAL IRV
Total/NA	Analysis	8015B		1			481075	06/08/18 15:49	LMB	TAL IRV

Client Sample ID: T181813-06
Date Collected: 05/30/18 16:30
Date Received: 06/07/18 14:00

Lab Sample ID: 440-213039-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			975 mL	1 mL	480999	06/08/18 05:53	L1H	TAL IRV
Total/NA	Analysis	8015B		1			481075	06/08/18 16:12	LMB	TAL IRV

Lab Chronicle

Client: SunStar Laboratories Inc
Project/Site: T181813

TestAmerica Job ID: 440-213039-1

Client Sample ID: T181813-07

Date Collected: 05/30/18 17:30
Date Received: 06/07/18 14:00

Lab Sample ID: 440-213039-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			880 mL	1 mL	480999	06/08/18 05:53	L1H	TAL IRV
Total/NA	Analysis	8015B		1			481075	06/08/18 16:34	LMB	TAL IRV

Client Sample ID: T181813-08

Date Collected: 05/30/18 18:30
Date Received: 06/07/18 14:00

Lab Sample ID: 440-213039-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			905 mL	1 mL	480999	06/08/18 05:53	L1H	TAL IRV
Total/NA	Analysis	8015B		1			481075	06/08/18 16:56	LMB	TAL IRV

Client Sample ID: T181813-09

Date Collected: 05/30/18 00:01
Date Received: 06/07/18 14:00

Lab Sample ID: 440-213039-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			930 mL	1 mL	480999	06/08/18 05:53	L1H	TAL IRV
Total/NA	Analysis	8015B		1			481075	06/08/18 17:19	LMB	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 440-480999/1-A
Matrix: Water
Analysis Batch: 481075

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 480999

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene, 1,1'-oxybis-	ND		0.10	0.020	mg/L		06/08/18 05:53	06/08/18 12:04	1
1,1'-Biphenyl	ND		0.10	0.020	mg/L		06/08/18 05:53	06/08/18 12:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*60*		*45 - 120*	*06/08/18 05:53*	*06/08/18 12:04*	*1*

Lab Sample ID: LCS 440-480999/18-A
Matrix: Water
Analysis Batch: 481075

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 480999

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene, 1,1'-oxybis-			0.100	0.0629	J	mg/L		63	50 - 115		
1,1'-Biphenyl			0.100	0.0568	J	mg/L		57	50 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane	*60*		*45 - 120*

Lab Sample ID: LCSD 440-480999/19-A
Matrix: Water
Analysis Batch: 481075

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 480999

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene, 1,1'-oxybis-			0.100	0.0778	J	mg/L		78	50 - 115	21	30
1,1'-Biphenyl			0.100	0.0705	J	mg/L		71	50 - 115	21	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane	*78*		*45 - 120*

QC Association Summary

Client: SunStar Laboratories Inc
Project/Site: T181813

TestAmerica Job ID: 440-213039-1

GC Semi VOA

Prep Batch: 480999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-213039-1	T181813-01	Total/NA	Water	3510C	
440-213039-2	T181813-02	Total/NA	Water	3510C	
440-213039-3	T181813-03	Total/NA	Water	3510C	
440-213039-4	T181813-04	Total/NA	Water	3510C	
440-213039-5	T181813-05	Total/NA	Water	3510C	
440-213039-6	T181813-06	Total/NA	Water	3510C	
440-213039-7	T181813-07	Total/NA	Water	3510C	
440-213039-8	T181813-08	Total/NA	Water	3510C	
440-213039-9	T181813-09	Total/NA	Water	3510C	
MB 440-480999/1-A	Method Blank	Total/NA	Water	3510C	
LCS 440-480999/18-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 440-480999/19-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 481075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-213039-1	T181813-01	Total/NA	Water	8015B	480999
440-213039-2	T181813-02	Total/NA	Water	8015B	480999
440-213039-3	T181813-03	Total/NA	Water	8015B	480999
440-213039-4	T181813-04	Total/NA	Water	8015B	480999
440-213039-5	T181813-05	Total/NA	Water	8015B	480999
440-213039-6	T181813-06	Total/NA	Water	8015B	480999
440-213039-7	T181813-07	Total/NA	Water	8015B	480999
440-213039-8	T181813-08	Total/NA	Water	8015B	480999
440-213039-9	T181813-09	Total/NA	Water	8015B	480999
MB 440-480999/1-A	Method Blank	Total/NA	Water	8015B	480999
LCS 440-480999/18-A	Lab Control Sample	Total/NA	Water	8015B	480999
LCSD 440-480999/19-A	Lab Control Sample Dup	Total/NA	Water	8015B	480999

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: SunStar Laboratories Inc
Project/Site: T181813

TestAmerica Job ID: 440-213039-1

Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	CA ELAP 2706	06-30-18 *

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8015B	3510C	Water	1,1'-Biphenyl
8015B	3510C	Water	Benzene, 1,1'-oxybis-

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

ADDITIONAL SAMPLE

SUBCONTRACT ORDER

SunStar Laboratories, Inc.

T181813

SENDING LABORATORY:

SunStar Laboratories, Inc.
25712 Commercentre Drive
Lake Forest, CA 92630
Phone: (949) 297-5020
Fax: (949) 297-5027
Project Manager: Rose Fasheh

RECEIVING LABORATORY:

TestAmerica (Irvine) Laboratories
17461 Derian Ave, #100
Irvine, CA 92614
Phone :(949) 261-1022
Fax: N/A

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: T181813-01	**Water**	**Sampled:06/01/18 05:35**		
Misc Water Testing #1	06/08/18 15:00	11/28/18 05:35		8015M- Therminol
Containers Supplied:				
Sample ID: T181813-02	**Water**	**Sampled:06/01/18 11:00**		
Misc Water Testing #1	06/08/18 15:00	11/28/18 11:00		8015M- Therminol
Containers Supplied:				
Sample ID: T181813-03	**Water**	**Sampled:06/01/18 11:10**		
Misc Water Testing #1	06/08/18 15:00	11/28/18 11:10		8015M- Therminol
Containers Supplied:				
Sample ID: T181813-04	**Water**	**Sampled:06/01/18 06:30**		
Misc Water Testing #1	06/08/18 15:00	11/28/18 06:30		8015M- Therminol
Containers Supplied:				
Sample ID: T181813-05	**Water**	**Sampled:06/01/18 09:15**		**Fluoride added per client request (Arlin, 6/1)**
Misc Water Testing #1	06/08/18 15:00	11/28/18 09:15		8015M- Therminol
Containers Supplied:				
Sample ID: T181813-06	**Water**	**Sampled:05/30/18 16:30**		
Misc Water Testing #1	06/08/18 15:00	11/26/18 16:30		8015M- Therminol
Containers Supplied:				

440-213039 Chain of Custody

Released By	Date	Received By	Date
	6-7-18 1400		6/7/18 1400
Released By	Date	Received By	Date
			1.7/1.7 IRVCC

VG 6/7

SUBCONTRACT ORDER

SunStar Laboratories, Inc.

T181813

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: T181813-07	**Water**	**Sampled:05/30/18 17:30**		
Misc Water Testing #1	06/08/18 15:00	11/26/18 17:30		8015M- Therminol
Containers Supplied:				
Sample ID: T181813-08	**Water**	**Sampled:05/30/18 18:30**		
Misc Water Testing #1	06/08/18 15:00	11/26/18 18:30		8015M- Therminol
Containers Supplied:				
Sample ID: T181813-09	**Water**	**Sampled:05/30/18 00:00**		
Misc Water Testing #1	06/08/18 15:00	11/26/18 00:00		8015M- Therminol
Containers Supplied:				

Released By	Date	Received By	Date
	6-7-18 1400		6/7/18 1400
Released By	Date	Received By	Date
			1.7/1.7 IRVC

Login Sample Receipt Checklist

Client: SunStar Laboratories Inc

Job Number: 440-213039-1
SDG Number:

Login Number: 213039
List Number: 1
Creator: Garcia, Veronica G

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ISOTECH
ISOTECH LABORATORIES INC
1308 Parkland Court Champaign, IL 61821 • (877) 362-4190 • www.isotechlabs.com

Reset Form

SEND DATA TO:

Name: Rose Fahshe
Company: SunStar Laboratories
Address: 25712 Commercentre Drive
Lake Forest, CA 92630

Phone: 949-297-5020
Email: rose@sunstarlabs.com
Project: T181813 - Genesis GW
PO #:
Location:
Sampled By: A.B.

SEND INVOICE TO (if different from SEND DATA TO):

Name: Cathy Hartman
Company:
Address:

Phone:
Email: accounting@sunstarlabs.com

Standard ◉ Priority ○ Rush ○

Analysis Requested

Sample Description

Container Number	Sample Identification	Date Sampled	Time	15N & 18O in NO3	dD & 18O in H2O	TEE (Pending)		Comments
T181813-01	23a	Jun-01-18	5:35 am		X			
T181813-02	OBS-1	Jun-01-18	11:00 am		X			
T181813-03	TW-1	Jun-01-18	11:10 am		X			
T181813-04	TW-2	Jun-01-18	6:30 am		X			
T181813-05	PW-2	Jun-01-18	9:15 am		X			
T181813-06	DM-1	May-30-18	4:30 pm		X			
T181813-07	DM-2	May-30-18	5:30 pm		X			
T181813-08	DM-3	May-30-18	6:30 pm		X			
T181813-09	DUP	—	—		X			

Chain-of-Custody Record

Signature	Company	Date	Time
Relinquished by	SunStar Labs	6-4-18	11:38
Received by	Abby L. Skube / Isotech Laboratories	JUN 05 2018	9:50
Relinquished by			
Received by			
Relinquished by			
Received by			

Weatherford LABORATORIES

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	666544	Job #:	38517	IS-101168	Co. Job#:
Sample Name:	23a				Co. Lab#: T181813-01
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T181813 - Genesis GW				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	6/01/2018 5:35	Date Received:	6/05/2018	Date Reported:	6/15/2018

δD of water	----------	-73.6 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-10.12 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

ISOTECH
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ANALYSIS REPORT

Lab #:	666545	Job #:	38517	IS-101168	Co. Job#:
Sample Name:	OBS-1				Co. Lab#: T181813-02
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T181813 - Genesis GW				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	6/01/2018 11:00	Date Received:	6/05/2018	Date Reported:	6/15/2018

δD of water	----------	-60.9 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-6.84 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

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ANALYSIS REPORT

Lab #:	666546	Job #:	38517	IS-101168	Co. Job#:
Sample Name:	TW-1				Co. Lab#: T181813-03
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T181813 - Genesis GW				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	6/01/2018 11:10	Date Received:	6/05/2018	Date Reported:	6/15/2018

δD of water	----------	-62.8 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-7.93 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

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ANALYSIS REPORT

Lab #:	666547	Job #:	38517	IS-101168	Co. Job#:
Sample Name:	TW-2				Co. Lab#: T181813-04
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T181813 - Genesis GW				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	6/01/2018 6:30	Date Received:	6/05/2018	Date Reported:	6/15/2018

δD of water	----------	-75.4 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-10.00 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

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ANALYSIS REPORT

Lab #:	666548	Job #:	38517	IS-101168	Co. Job#:
Sample Name:	PW-2				Co. Lab#: T181813-05
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T181813 - Genesis GW				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	6/01/2018 9:15	Date Received:	6/05/2018	Date Reported:	6/15/2018

δD of water	----------	-77.7 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-10.22 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

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ANALYSIS REPORT

Lab #:	666549	Job #:	38517	IS-101168	Co. Job#:
Sample Name:	DM-1				Co. Lab#: T181813-06
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T181813 - Genesis GW				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	5/30/2018 16:30	Date Received:	6/05/2018	Date Reported:	6/15/2018

δD of water	----------	-71.1 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-8.57 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

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ANALYSIS REPORT

Lab #:	666550	Job #:	38517	IS-101168	Co. Job#:
Sample Name:	DM-2				Co. Lab#: T181813-07
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T181813 - Genesis GW				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	5/30/2018 17:30	Date Received:	6/05/2018	Date Reported:	6/15/2018

δD of water	----------	-69.2 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-8.39 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

ISOTECH
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ANALYSIS REPORT

Lab #:	666551	Job #:	38517	IS-101168	Co. Job#:
Sample Name:	DM-3				Co. Lab#: T181813-08
Company:	SunStar Laboratories, Inc				
API/Well:					
Container:	250ml Plastic Bottle				
Field/Site Name:	T181813 - Genesis GW				
Location:					
Formation/Depth:					
Sampling Point:					
Date Sampled:	5/30/2018 18:30	Date Received:	6/05/2018	Date Reported:	6/15/2018

δD of water	----------	-70.6 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-8.67 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 666552 Job #: 38517 IS-101168 Co. Job#:
Sample Name: DUP Co. Lab#: T181813-09
Company: SunStar Laboratories, Inc
API/Well:
Container: 250ml Plastic Bottle
Field/Site Name: T181813 - Genesis GW
Location:
Formation/Depth:
Sampling Point:
Date Sampled: / / Date Received: 6/05/2018 Date Reported: 6/15/2018

δD of water	----------	-78.2 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-10.26 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	na
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water