

# R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Since 1996  
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August 24, 2017

Olivia Yu  
NMOCD District 1  
1625 N. French Dr.  
Hobbs, NM 88240

**INFORMATION ONLY**

RE: AMTEX Energy, Tomahawk SWD Facility Release, 1RP- 4778

Dear Ms. Yu:

On behalf of Amtex Energy, Hicks Consultants submits this Remediation Plan for the above referenced facility. For the benefit of Amtex Energy and the surface owner, the OCD definition of a Remediation Plan is (**emphasis added**):

(5) "Remediation plan" means a written description of a program to address unauthorized releases. The plan may include appropriate information, including assessment data, health risk demonstrations and corrective action or actions. **The plan may also include an alternative proposing no action beyond the spill report's submittal.**

The purpose of this remediation plan is to provide sufficient data to determine with reasonable probability if the release will endanger public health or the environment and require a corrective action under OCD Rules.

Hicks Consultants conducted a preliminary inspection of the release site and these data are attached as Plate 1. Please note that the suggested surface extent of the release is based upon surface evidence of flow as well as limited sampling. Because of rainfall events obscured the spill footprint, the estimate of 41,600 square feet probably overestimates the horizontal extent. Plate 1 does suggest that:

- the western boundary of the release is the BLM lease road and titration results from Sample 6;
- the southern boundary of the release is the lease road south of the location, Sample 3 and Sample 7;
- the eastern boundary is defined by the location of the source (the SWD well), the slope of the location and interviews with Amtex field staff; and
- the south-sloping land surface precludes a northern component greater than that shown on Plate 1.

We propose the following program to complement existing field titration data and assist us in defining the vertical concentration profile associated with this salt water release.

1. At the following locations that lay sufficient distance from underground pipelines, we will use a backhoe to create a sampling trench to a depth of 10-12 feet, or as deep as possible given the anticipated presence of hard caliche.
  - a. Sample 1
  - b. Sample 5
2. We will collect 2-3 samples at a depth of 1-2 feet along the west side of the BLM lease road. We will use field methods to provide an estimate of the southern extent

of impact based upon these samples. We will then select a location for a third backhoe sampling trench on the west side of the BLM lease road.

3. For each of the three backhoe sampling trenches we will
  - a. Collect samples at 2-foot increments to total depth
  - b. Use field titration methods to determine chloride concentration of each sample
  - c. Submit the deepest sample from each trench plus 10% of all the samples to a laboratory for analysis of chloride
  - d. Submit 2 samples to the laboratory for evaluation of benzene, toluene, ethylbenzene, xylene and TPH (GRO+DRO+DRO-ext)

After evaluation of these data, we will recommend a corrective action that complies with NMOCD Rules and provides the highest net environmental benefit. The report will include the attached maps showing the elevation of the groundwater surface in the area as well as nearby surface water bodies and significant watercourses as mapped by the USGS and our field inspection.

Plate 2 provides information relating to the depth to groundwater (3714-3375=) 339 feet. This depth to water combined with the fact that groundwater resides in the Dockum Group and not the Ogallala Aquifer permit a conclusion that this release cannot impact groundwater. Thus, the recommended corrective action will not include work elements to evaluate potential impacts to groundwater. Plate 3 shows that the nearest mapped watercourse lies about 6000 feet from the release. Field examination is necessary to determine if the corrective action must include work elements to address potential impacts to surface water. The corrective action will consider impact to the root zone and the productive capacity of the land for grazing.

We would like to move forward with the additional characterization as soon as possible. Upon OCD approval of this plan, we will schedule a backhoe and alert the surface owners and OCD at least 48 hours before sampling commences.

Sincerely,  
R.T. Hicks Consultants, Ltd.

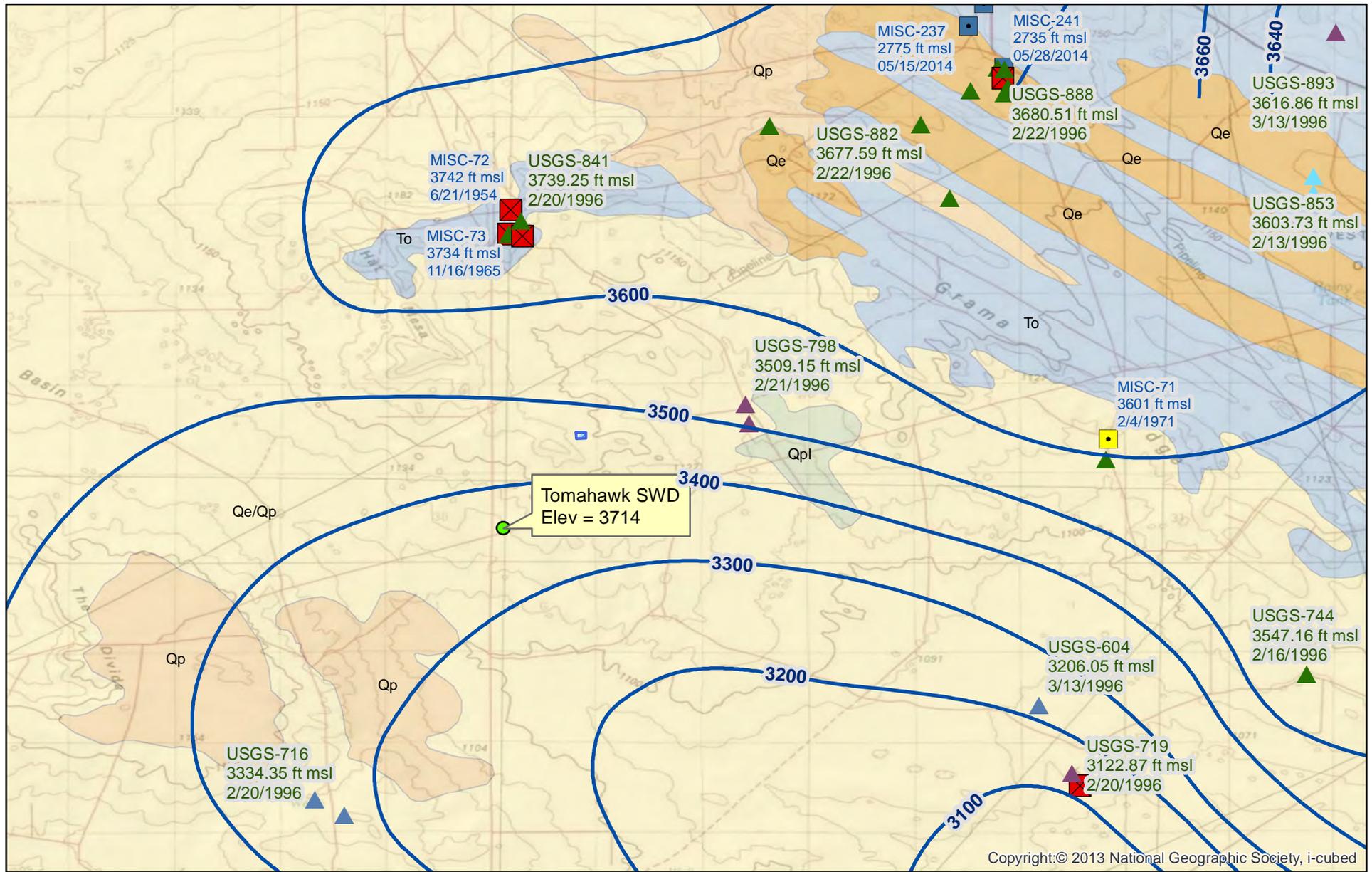


Randall Hicks  
Principal

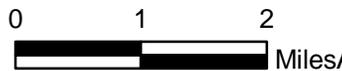
Copy: Amtex Energy Inc.,  
Shelly Tucker, BLM  
Merchant Livestock, Clabe Pearson (cjpj@leaco.net)



<b>R.T. Hicks Consultants, Ltd</b> 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 (432) 528-3878	<b>Site Map Showing Locations of Proposed Characterization Soil Samples</b>	<b>Plate 1 (1RP4778)</b>
	<b>Amtex Energy, Inc. - Tomahawk SWD (API: 30-025-33069) Unit L, Section 31, T21S, R33E, Lea County, New Mexico</b>	<b>September 2017</b>



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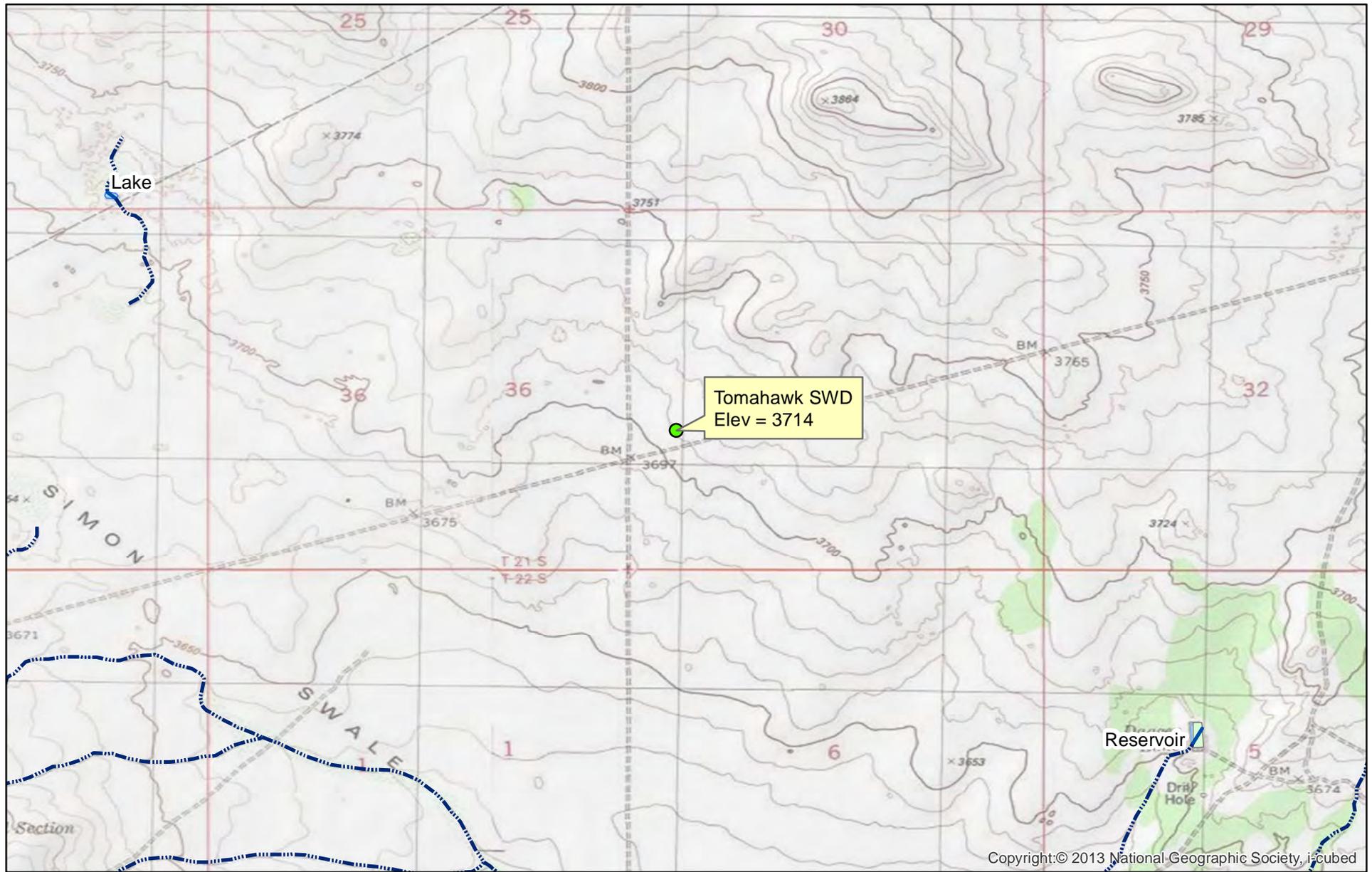
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Potentiometric Surface and Groundwater Elevation  
 at Nearby Water Wells

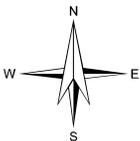
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Plate 2

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Nearby Mapped Surface Water Bodies and Streams

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Plate 3

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