District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: SIMCOE, LLC	OGRID: 329736
Contact Name: Sabre Beebe	Contact Telephone (970) 852-5172
Contact email: sabre.beebe@ikavenergy.com	Incident # *(assigned by OCD)*
Contact mailing address: 1199 Main Ste., Suite 101, Durango, CO 81301	

Location of Release Source

Latitude 36.872285 Longitude -107.711327
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Kernaghan B 007	Site Type: Active Well
Date Release Discovered: 01/31/2022 12:23 PM	API# *(if applicable) 30-045-27350*

Unit Letter	Section	Township	Range	County
H	30	31N	08W	San Juan County

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) Approx. 35 bbl	Volume Recovered (bbls) Approx. 20 bbl
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Gauge on wellhead froze and broke. Produced water released through the gauge and onto the ground. Release remained entirely on well pad. Contract water truck dispatched to location and recovered all fluids. Investigation of release determined that initial volume estimate was inaccurate. Soil samples collected by contract vendor.

Soil sample results are attached below. Further horizontal delineation performed with field analysis which is attached. Request for Variance is attached below.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Volume of release is greater than 25 bbls.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Notice provided by calling District III main office (505) 334-6178 and speaking with John Garcia 01/31/2022 @ 2:53 PM. Return call from Nelson Velez at 3:02 PM. Informed Mr. Velez of all information known about release as reported by Field Personnel at that time.

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why: Soil sampling performed by Contract Vendor and SIMCOE, LLC is awaiting sample results. Sampling map attached.

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _Sabre Beebe_____ Title: _Environmental Coordinator_____

Signature: _____ Date: _08/30/2022_

email: sabre.beebe@ikavenergy.com Telephone: __970-852-5172_____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	>100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☐ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _____ Title: _____

Signature:_____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☑ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☑ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☐ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Sabre Beebe Title: Environmental Coordinator

Signature: Sabre Beebe Date: August 30, 2022

email: sabre.beebe@ikavenergy.com Telephone: 970-852-5172

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Nelson Velez Date: 09/06/2022

Printed Name: Nelson Velez Title: Environmental Specialist - Adv

Kernaghan B 007 30-045-27350 Variance request per 19.15.29.14

HISTORY:

On February 11, 2022, on the Kernaghan B 007 well during location checks the technician discovered a gauge at the well head had frozen and broken releasing produced water onto the well pad. Initial estimate by technician was 35 bbls. Technician immediately shut in the well and stopped the release. A water truck was dispatched to location to recover all standing fluids. The release remained on the compacted surface of the well pad. The release was not within containment.

Site investigation calculation:
Based on the total square footage of the wet area, a saturation depth of approximately 4" (0.33 feet), and the liquid capacity of clay, we estimate that the total release was approximately 25.4 bbls.
The equation is below:
Horizontal Square Footage x Vertical Depth in Feet x Liquid Capacity of Soil Factor = Volume Released
(3,230 sq ft) x (0.33 ft (depth)) x (1.0 gallons/cubic ft (liquid capacity of clay)) = 1,065.9 gallons/42 (gallons/bbl) = 25.4 bbls
Total amount calculated was 25.4 bbls.

VARIANCE REQUEST:

Simcoe, LLC is requesting a variance on remediation on this location for the following reasons:

1. Equipment safety and protection
    a. Wellhead had a gas driven pumpjack in service that impedes excavation around the wellhead without a high risk of damaging the wellhead and production lines to auxiliary equipment.
    b. Cathodic electrical lines are run within the release are a are at risk of damage/destruction during any excavation.
    c. Automation cables within the release area are at risk of damage/destruction during excavation.
    d. Fuel gas line for pumpjack is at risk of damage/destruction during excavation.
2. Public health, safety and environment risk is minimal if not non-existent as there are now domestic inhabitants within over one mile of the location.
3. Ground water has been established at greater than 100 feet of location (see summary below and attached BGT siting documentation)
4. The Chloride, TPH and BTEX levels of sample results (attached) are below the Table 1 closure standards. Chloride levels of 11 out of 13 exceed the reclamation standard; however, the entire impacted area resides within the area required for normal operations and will not be reclaimed until such time that the well is plugged and abandoned.
5. Any additional vertical delineation will be performed at such time that the well is plugged, all equipment decommissioned, and reclamation is performed.
6. Location has a cut and fill which during final reclamation will require removal of all imported materials estimated at six inches or greater in depth. This material will be exported and disposed of properly. Entire original disturbance is required to be returned to near natural contour to the extent that is practicable. Revegetation of entire disturbance is required at final reclamation prior to release.
7. During final reclamation activities any evidence of impacts are investigated by sampling and addressed in accordance with all regulations. Therefore, Simcoe, LLC is confident that the impacts will be most effectively addressed at such time that the well is plugged, and the location reclaimed.
8. Safety concerns listed in item 1 are non-existent upon completion of the plugging and abandonment of the wellbore.
9. Reclamation requirements do not apply, as the area impacted by the release is currently and will remain within the area of the well pad to be utilized for ongoing oil and gas operations of the well.
10. During release investigation the surface soils of the well pad were characterized as clay soils which during construction of the pad were compacted for additional stabilization for production equipment stability.

Simcoe, LLC is requesting variance request to remediation/reclamation requirements as stated below:
Extent delineation to four feet.

1. During investigation of release and initial sampling vertical depth was visually determined to be at four inches determined by clay soil saturation. (Refer to Site investigation calculation above)
2. During investigation of release and initial sampling horizontal extent was visually determined by visual of moist and wet soil extent.
3. Horizontal extent was re-calculated by third party contractor performing field screening outside the initial mapped spill area. Those results are attached below. All field screened samples resulted being below the standard.

Depth to ground water determination greater than 100 feet utilizing BP America C-144 BGT siting documentation compiled and submitted to NMOCD 6/14/2010.

1. Ground water determination is greater than 100 feet.
2. Location is not within 300 feet of a continuously flowing watercourse
3. Location is not within 200 feet of a significant watercourse, lakebed, sinkhole, or playa lake
4. Location is not within 1000 feet of a permanent residence, school, hospital, institution, or church
5. Location is not within 500 horizontal feet of a private, domestic freshwater well or spring or 1000 horizontal feet of other freshwater well or spring
6. Location is not within any incorporated municipal boundaries or defined municipal freshwater well field
7. Location is not within 500 feet of a wetland
8. Location is not within the are of a overlying subsurface mine
9. Location is not within an unstable area
10. Location is not within a 100-year floodplain

Siting Criteria Documentation

SITING AND HYDRO-GEOLOGICAL REPORT FOR KERNAGHAN B 007

Siting Criteria 19.15.17.10 NMAC

Depth to groundwater at the site is estimated to be greater than 100 feet. This estimation is based on data from Stone and others (1983), and depth to groundwater data obtained from water wells permitted by the New Mexico State Engineer's Office (OSE, Figure 1). Local topography and proximity to adjacent water features are also considered. A topographic map of the site is provided as Figure 2 and demonstrates that the below grade tank (BGT) is not within 300 feet of any continuously flowing watercourse or within 200 feet of any other significant watercourse, lakebed, sinkhole or playa lake as measured from the ordinary high water mark. Figure 3 demonstrates that the BGT is not within 300 feet of a permanent residence, school, hospital, institution or church. Figure 4 demonstrates, based on a search of the OSE database and USGS topographic maps, that there is a freshwater well within 1000 feet of the BGT; however, records indicate that the drilling permit was withdrawn, and the well was never installed. Figure 5 demonstrates that the BGT is not within a municipal boundary or a defined municipal freshwater well field. Figure 6 demonstrates that the BGT is not within 500 feet of a wetland. Figure 7 demonstrates that the BGT is not in an area overlying a subsurface mine. The BGT is not located in an unstable area. Figure 8 demonstrates that the BGT is not within the mapped FEMA 100-year floodplain.

The BGT subject to the attached application for a permit under 19.15.17 NMAC (New Mexico Administrative Code) was in existence prior to promulgation of 19.15.17 NMAC. A review of the best available data and a visual inspection of the siting criteria of 19.15.17 NMAC specific to the BGT in question demonstrate that the BGT does not appear to pose an imminent threat to public health and the environment.

Local Geology and Hydrology

This particular site is located on a mesa top close to the main channel of Pump Canyon, but hundreds of feet higher in elevation than the surface of the canyon. Regional topography of Pump Canyon is composed of mesas dissected by deep, narrow canyons and arroyos. The more resistant cliff-forming sandstones of the San Jose Formation cap the interbedded siltstones, shales and sandstones of the Nacimiento Formation. Accumulations of talus and eroded sands at the base of canyon walls form steep to gentle slopes that transition into flat-bottomed arroyos within the canyons. Deposits of Quaternary alluvial and eolian sands occur prominently near the surface of Pump Canyon, especially near streams and washes.

Regional Geology and Hydrology

The San Juan Basin is situated in the Navajo section of the Colorado Plateau and is characterized by broad open valleys, mesas, buttes and hogbacks. Away from major valleys and canyons topographic relief is generally low. Native vegetation is sparse and shrubby. Drainage is mainly by the San Juan River, the only permanent stream in the Navajo Section of the Colorado Plateau. The San Juan River is a tributary of the Colorado River. Major tributaries include the Animas, Chaco and La Plata Rivers. Flow of the San Juan River across the basin is regulated by the

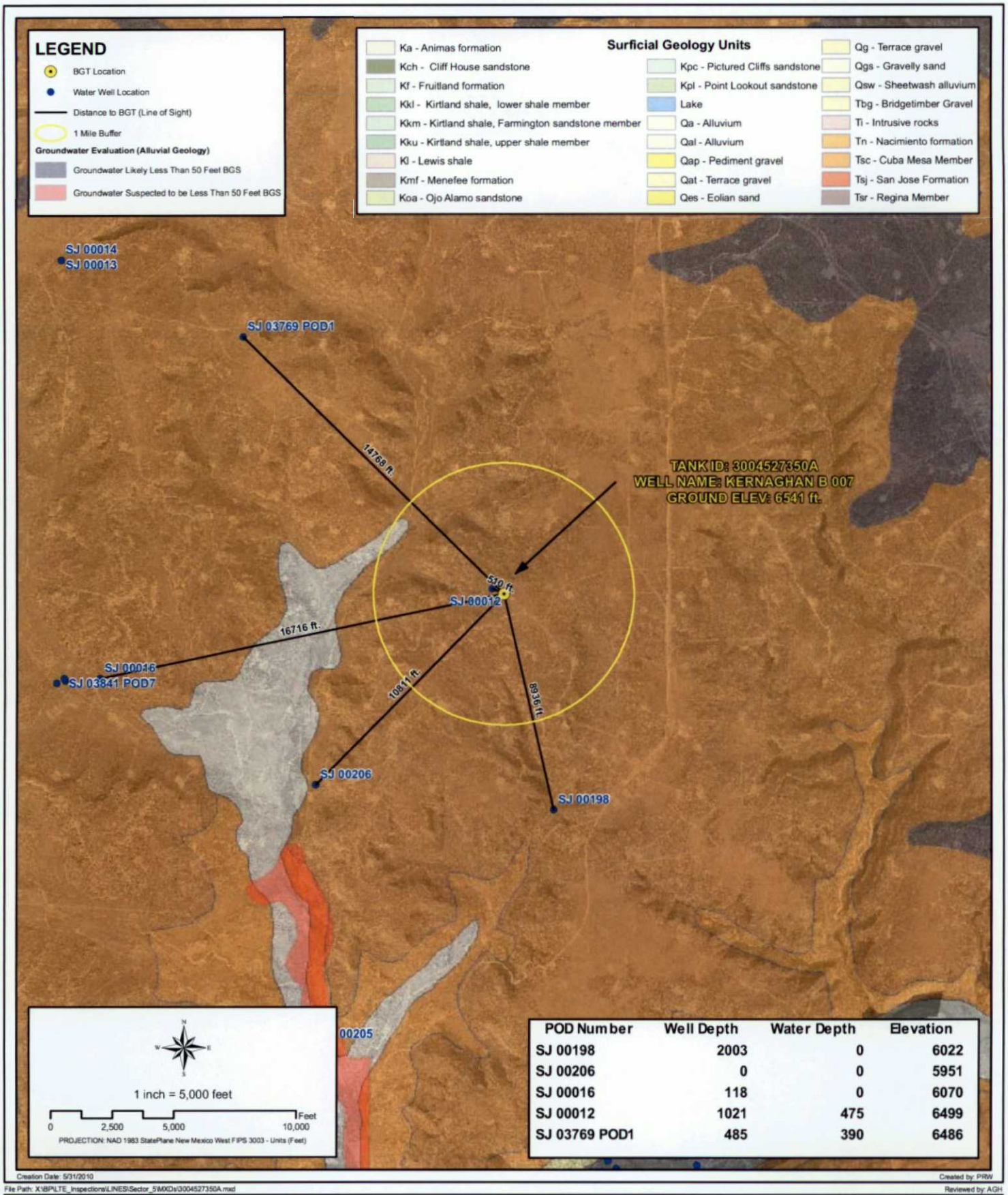
Navajo Dam, located about 30 miles northeast of Farmington, New Mexico. The climate is arid to semiarid with an average annual precipitation of 8 to 10 inches. Soils within the basin consist of weathered parent rock derived from predominantly physical means mostly from eolian depositional systems with fluvial having a lesser impact.

Cretaceous and Tertiary sandstones, as well as Quaternary alluvial deposits, serve as the primary aquifers in the San Juan Basin (Stone et al., 1983). The San Jose Formation of Eocene age occurs in both New Mexico and Colorado, and its outcrop forms the land surface over much of the eastern half of the central basin. It overlies the Nacimiento Formation in the area generally south of the Colorado-New Mexico border and overlies the Animas Formation in the general area north of the State Line. The San Jose Formation was deposited in various fluvial-type environments. In general, the unit consists of an interbedded sequence of sandstone, siltstone, and shale. Thickness of the San Jose Formation increases from west to east. Groundwater is associated with alluvial and fluvial sandstone aquifers. The occurrence of groundwater is mainly controlled by distribution of sandstone in the formation. The reported or measured discharge from numerous water wells completed in the formation range from 0.15 to 61 gallons per minute (gpm) and with a median of 5 gpm. Most of the wells provide water for livestock and domestic purposes. The formation is suitable for recharge from precipitation due to overlying soils being sandy, highly permeable and absorbent. Low annual precipitation, relatively high transpiration and evaporation rates and deep dissection of the formation by the San Juan River and its main tributaries all tend to reduce the effective recharge to the formation. Aquifers within the coarser and continuous sandstone bodies of the Nacimiento Formation of Paleocene age are between 0 and 1000 feet deep in the majority of the basin as well (Stone et al., 1983).

References

Circular 154—Guidebook to coal geology of northwest New Mexico By E. C. Beaumont, J. W. Shomaker, W. J. Stone, and others, 1976

Stone, et al., 1983, Hydrogeology and Water Resources of the San Juan Basin, New Mexico, Socorro, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70 p



bp

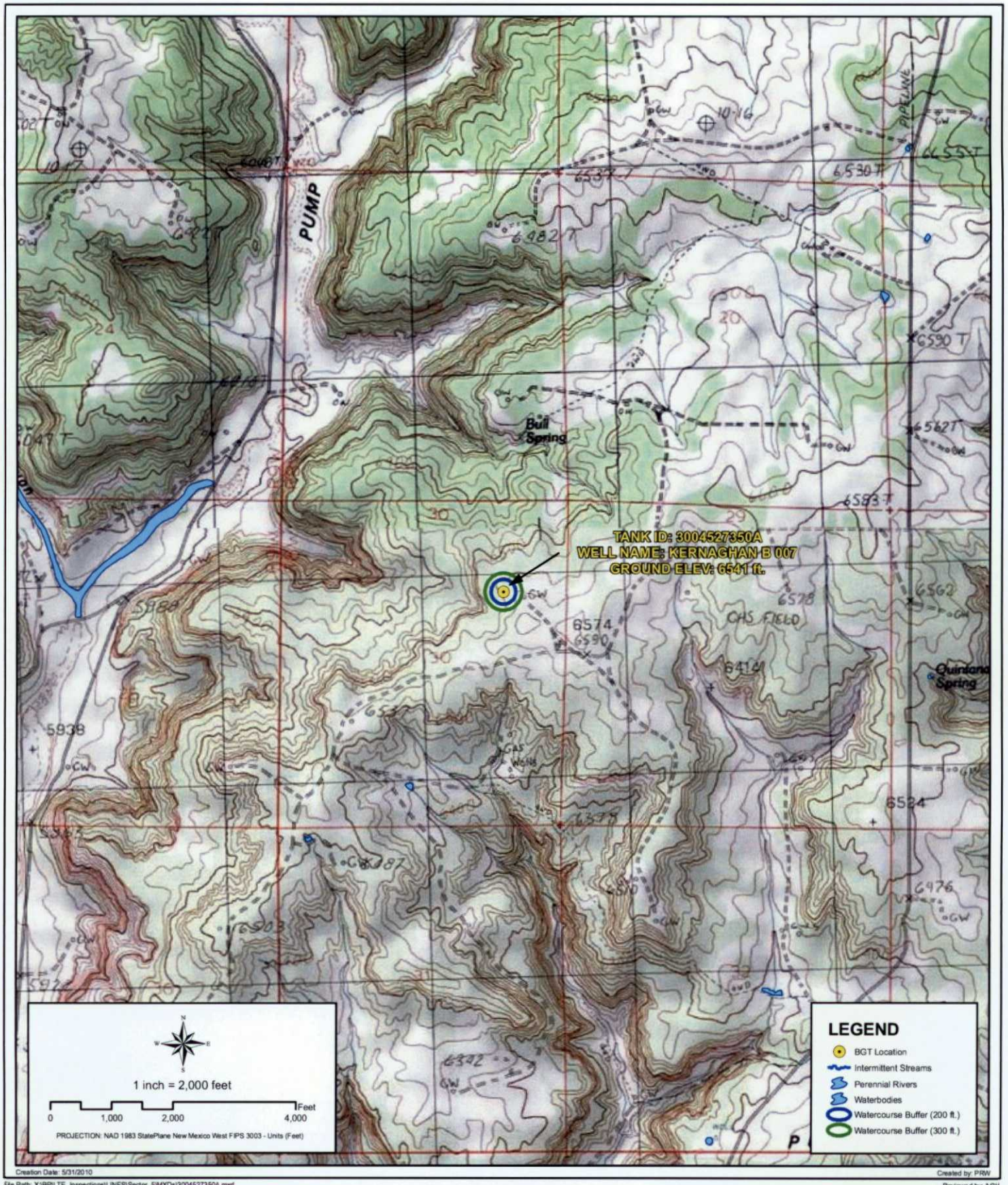
GROUNDWATER LESS THAN 50 FT.

WELL NAME: KERNAGHAN B 007

API NUMBER: 3004527350 TANK ID: 3004527350A

SECTION 30, TOWNSHIP 31.0N, RANGE 08W, P.M. NM23

FIGURE 1



PROXIMITY TO WATERCOURSES

WELL NAME: KERNAGHAN B 007

API NUMBER: 3004527350 TANK ID: 3004527350A

SECTION 30, TOWNSHIP 31.0N, RANGE 08W, P.M. NM23

FIGURE 2

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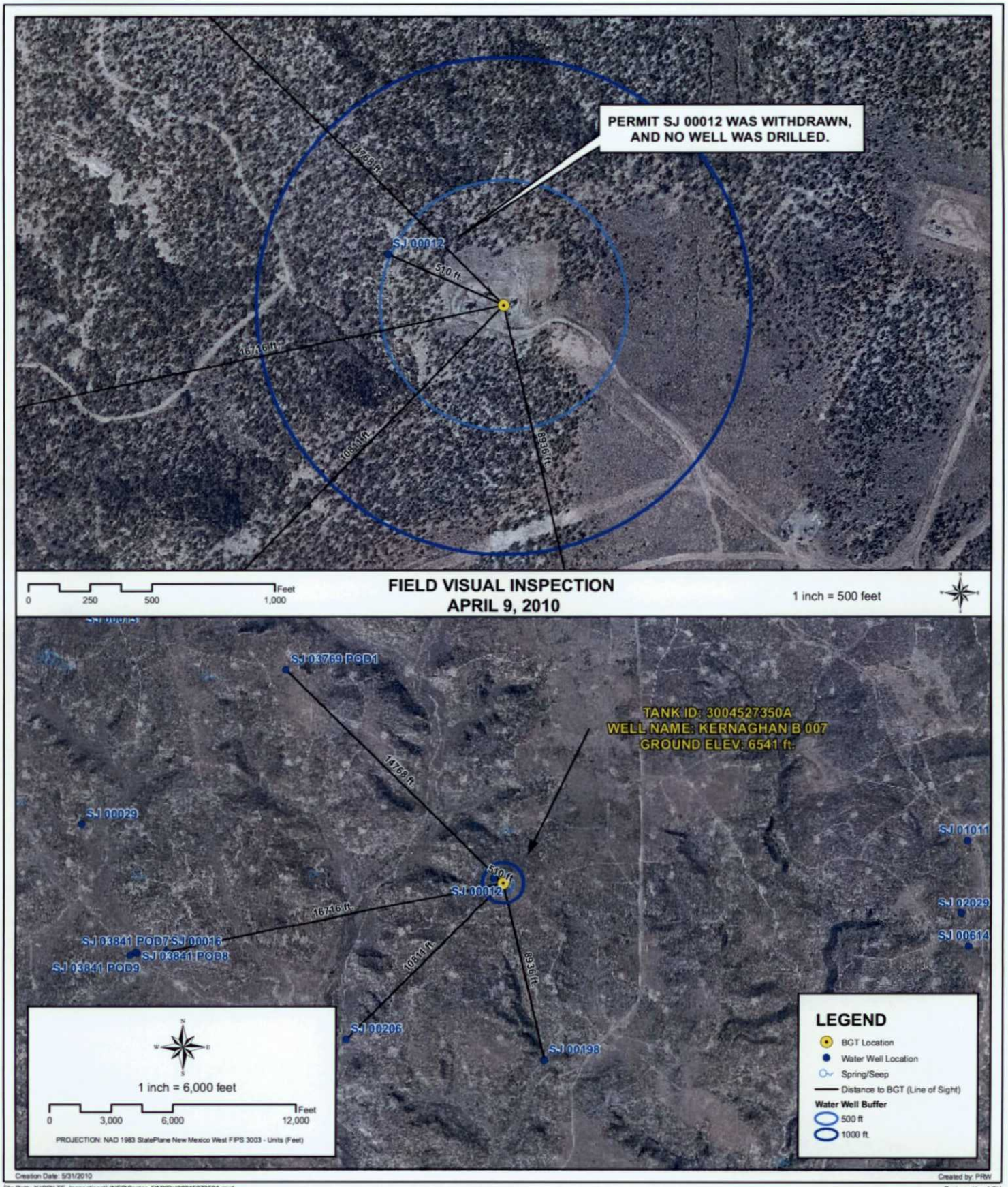
PROXIMITY TO PERMANENT STRUCTURE

WELL NAME: KERNAGHAN B 007

API NUMBER: 3004527350 TANK ID: 3004527350A

SECTION 30, TOWNSHIP 31.0N, RANGE 08W, P.M. NM23

FIGURE 3



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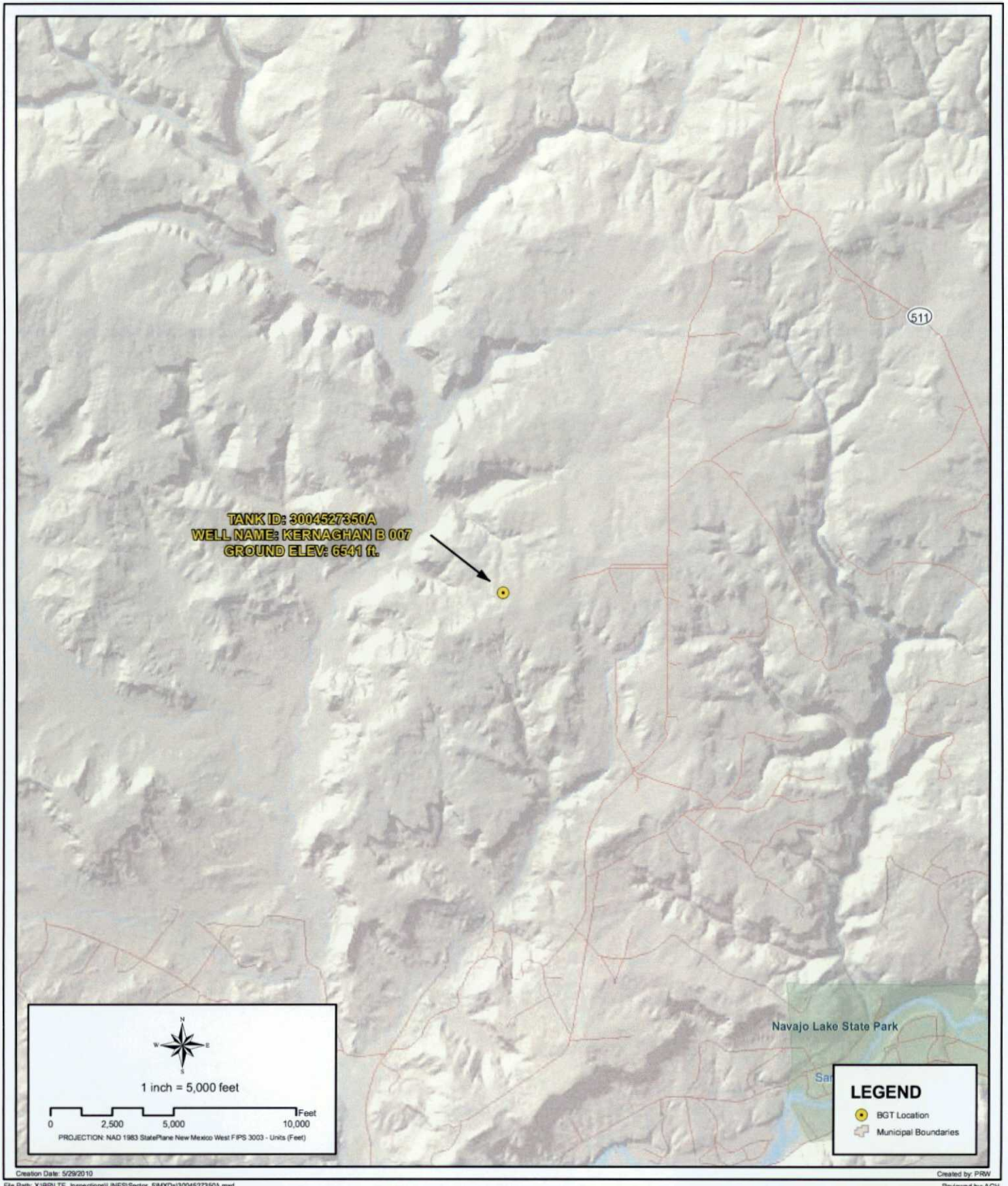
PROXIMITY TO WATER WELLS

WELL NAME: KERNAGHAN B 007

API NUMBER: 3004527350 TANK ID: 3004527350A

SECTION 30, TOWNSHIP 31.0N, RANGE 08W, P.M. NM23

FIGURE 4



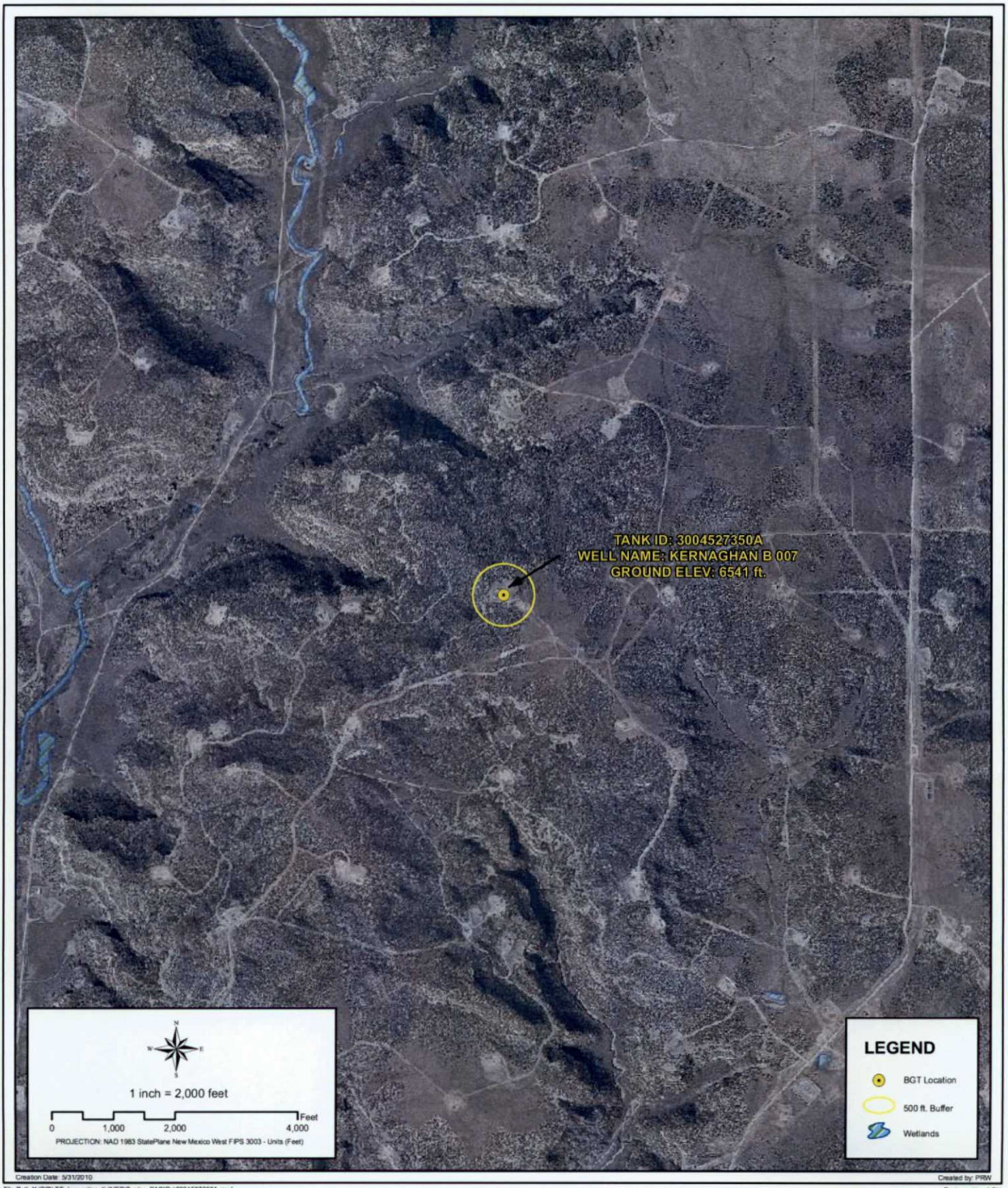
PROXIMITY TO MUNICIPAL BOUNDARY

WELL NAME: KERNAGHAN B 007

API NUMBER: 3004527350 TANK ID: 3004527350A

SECTION 30, TOWNSHIP 31.0N, RANGE 08W, P.M. NM23

FIGURE 5



bp

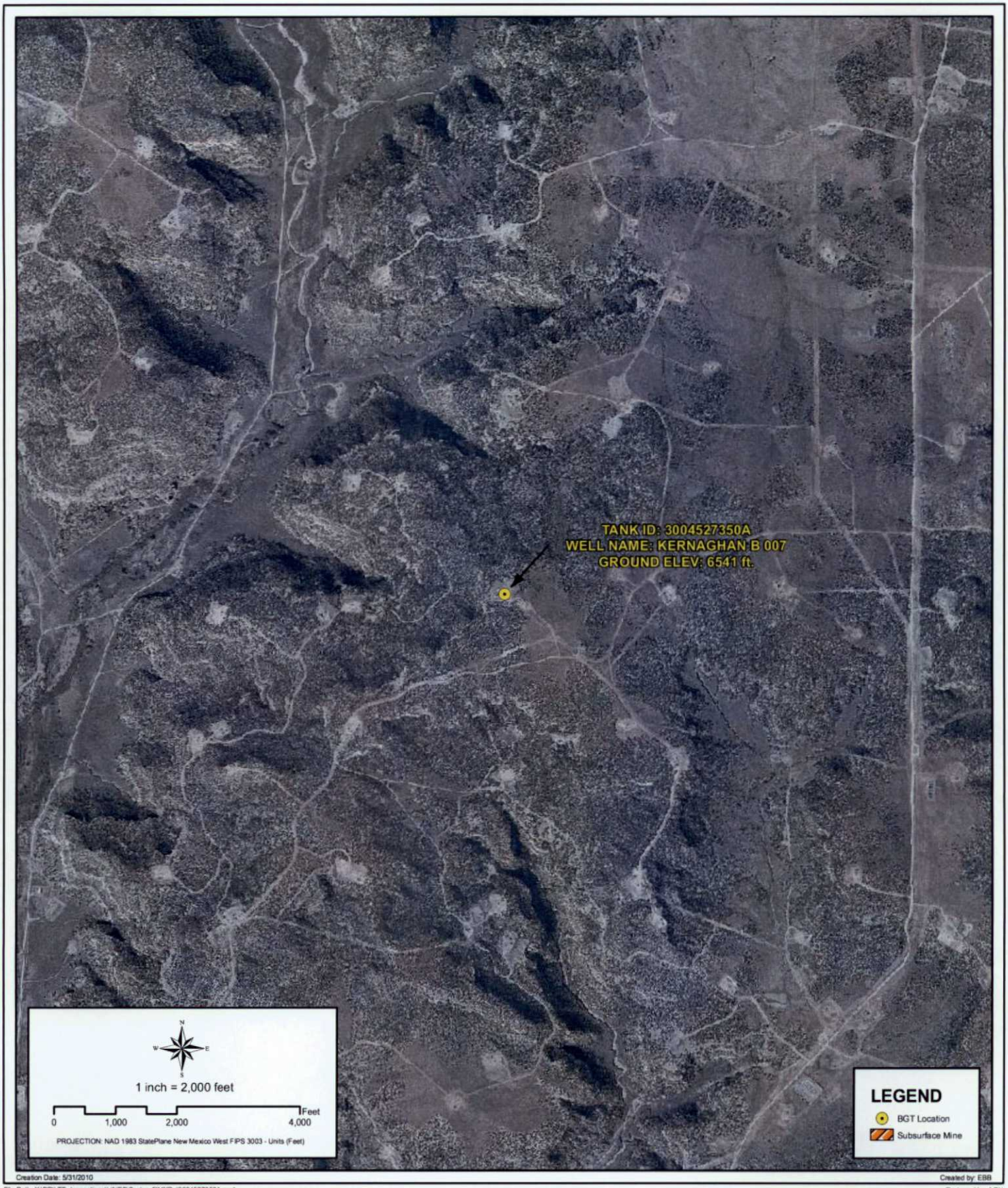
PROXIMITY TO WETLANDS

WELL NAME: KERNAGHAN B 007

API NUMBER: 3004527350 TANK ID: 3004527350A

SECTION 30, TOWNSHIP 31.0N, RANGE 08W, P.M. NM23

FIGURE 6



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PROXIMITY TO SUBSURFACE MINES

WELL NAME: KERNAGHAN B 007

API NUMBER: 3004527350 TANK ID: 3004527350A

SECTION 30, TOWNSHIP 31.0N, RANGE 08W, P.M.NM23

FIGURE 7

bp

PROXIMITY TO FLOODPLAIN

WELL NAME: KERNAGHAN B 007

API NUMBER: 3004527350 TANK ID: 3004527350A

SECTION 30, TOWNSHIP 31.0N, RANGE 08W, P.M. NM23

FIGURE 8

SOUTHERN SAN JUAN BASIN (SSJB)

Figure Citation List

March 2010

Figure 1: Groundwater Less Than 50 ft.

Layers:

Water Wells: **iWaters Database: NMOSE/ISC (Dec. 2009)**

New Mexico Office of the State Engineer (OSE) /ISC iWaters database. (Data updated: 12/2009. Data received: 03/09/2010). Data available from: http://www.ose.state.nm.us/waters_db_index.html.

Cathodic Wells: **Tierra Corrosion Control, Inc. (Aug. 2008)**

Tierra Corrosion Control, Inc. 1700 Schofield Ln. Farmington, NM 87401. Driller's Data Log. (Data collected: All data are associated with cathodic protection wells installed at BP facilities between 2008-2009. Data received: 05/06/2010).

Hydrogeological Evaluation: **Wright Water Engineers, Inc. (2008)**

Evaluation completed by Wright Water Engineers, Inc. Durango Office. Data created using digital statewide geology at 1:500,000 from USGS in combination with 10m Digital Elevation Model (DEM) from NRCS. (Data compiled: 2008.)

Results: Spatial Polygons representing "Groundwater likely to be less than 50 ft." and "Groundwater suspected to be less than 50 ft.".

Surficial Geology: **USGS (1963/1987)**

Data digitized and rectified by Geospatial Consultants. (Data digitized: 03/23/ 2010). Original hard copy maps sourced from United States Geological Survey (USGS). Data available from: http://pubs.er.usgs.gov/.

Geology, Structure and Uranium Deposits of the Shiprock Quadrangle, New Mexico and Arizonia. 1:250,000. I - 345. Compiled by Robert B. O'Sullivan and Helen M. Beikman. 1963.

Geologic Map of the Aztec 1 x 2 Quadrangle, Northwestern New Mexico and Southern Colorado. 1:250,000. I - 1730. Compiled by Kim Manley, Glenn R. Scott, and Reinhard A. Wobus. 1987.

Aerial Imagery: **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery. Projected coordinate system name: NAD_1983_StatePlane_New_Mexico_West_FIPS_3003_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

Figure 2: Proximity to Watercourses

Layers:

Perennial Streams: **NHD, USGS (2010)**

National Hydrography Dataset (NHD). U.S. Geological Survey. (Data last updated: 02/19/2010. Data received: 03/09/2010). High-resolution: 1:24,000. Digital Representation of USGS 24k Topographic map series with field updates as required. Data available from: http://nhd.usgs.gov/.

Intermittent Streams: **NHD, USGS (2010)**

National Hydrography Dataset (NHD). U.S. Geological Survey. (Data last updated: 02/19/2010. Data received: 03/09/2010). High-resolution: 1:24,000. Digital Representation of USGS 24k Topographic map series with field updates as required. Data available from: http://nhd.usgs.gov/.

Water Bodies: **NHD, USGS (2010)**

National Hydrography Dataset (NHD). U.S. Geological Survey. (Data last updated: 02/19/2010. Data received: 03/09/2010). High-resolution: 1:24,000. Digital representation of USGS 24k Topographic map series with field updates as required. Data available from: http://nhd.usgs.gov/.

USGS Topographic Maps: **USGS (2007)**

USGS 24k Topographic map series. 1:24000. Maps are seamless, scanned images of USGS paper topographic maps. Data available from: http://store.usgs.gov.

Figure 3: Proximity to Permanent Structure

Layers:

Aerial Imagery: **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery. Projected coordinate system name: NAD_1983_StatePlane_New_Mexico_West_FIPS_3003_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

Figure 4: Proximity to Water Wells

Layers:

Water Wells: **iWaters Database: NMOSE/ISC (Dec. 2009)**

New Mexico Office of the State Engineer (OSE) /ISC iWaters database. (Data updated: 12/2009. Data received: 03/09/2010). Data available from: http://www.ose.state.nm.us/waters_db_index.html.

Springs/Seeps: **NHD, USGS (2010)**

National Hydrography Dataset (NHD). U.S. Geological Survey. (Data last updated: 02/19/2010. Data received: 03/09/2010). High-resolution: 1:24,000. Digital representation of USGS 24k Topographic map series with field updates as required. Data available from: http://nhd.usgs.gov/.

Aerial Imagery: **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery. Projected coordinate system name: NAD_1983_StatePlane_New_Mexico_West_FIPS_3003_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

Figure 5: Proximity to Municipal Boundary

Layers:

Municipal Boundary: **San Juan County, New Mexico (2010)**

Data provided by San Juan County GIS Division. (Data received: 03/25/2010).

Shaded Relief: **NED, USGS (1999)**

National Elevation Dataset (NED). U.S. Geological Survey, EROS Data Center. (Data created: 1999. Data downloaded: April, 2010). Resolution: 10 meter (1/3 arc-second). Data available from: http://ned.usgs.gov/.

StreetMap North America: **Tele Atlas North America, Inc., ESRI (2008)**

Data derived from Tele Atlas Dynamap/Transportation North America, version 5.2. (Data updated: annually. Data series issue: 2008).

Figure 6: Proximity to Wetlands

Layers:

Wetlands: **NWI (2010)**

National Wetlands Inventory (NWI). U.S Fish and Wildlife Service. (Data last updated: 09/25/2009. Data received: 03/21/2010). Data available from: http://www.fws.gov/wetlands/.

Aerial Imagery: **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery. Projected coordinate system name:
NAD_1983_StatePlane_New_Mexico_West_FIPS_3003_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

Figure 7: Proximity to Subsurface Mine

Layers:

Subsurface Mine: **NM Mining and Minerals Division (2010)**

New Mexico Mining and Minerals Division. (Data received: 03/12/2010). Contact: Susan Lucas Kamat, Geologist. Provided PLSS NM locations (Sections) for the two subsurface mines located in San Juan and Rio Arriba counties.

Aerial Imagery: **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery. Projected coordinate system name:
NAD_1983_StatePlane_New_Mexico_West_FIPS_3003_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

Figure 8: Proximity to FEMA Floodplain

Layers:

FEMA Floodplain: **FEMA (varying years)**

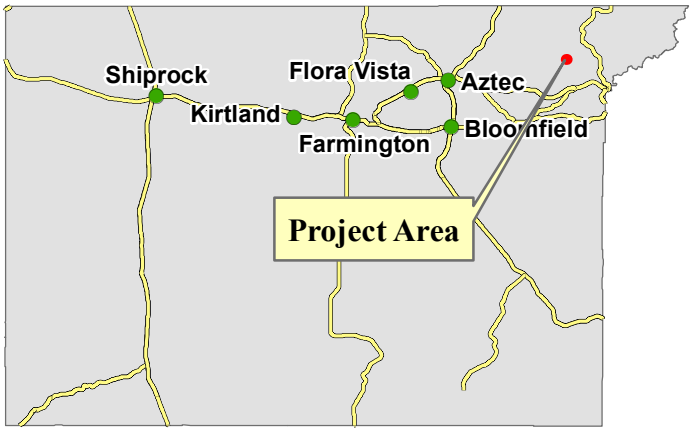
Data digitized and rectified by Wright Water Engineers, Inc. (Data digitized: August 2008).
Digitized from hard copy Flood Insurance Rate Maps (FIRMs) (varying years) of San Juan County.

Aerial Imagery: **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery.
Projected coordinate system name:
NAD_1983_StatePlane_New_Mexico_West_FIPS_3003_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

Sampling Documentation



San Juan County, New Mexico

Notes: SS01-SS13 collected 2/1/2022. FS01-FS05 collected 6/28/2022. SS01-SS13 are 5-point composite samples. FS01 and FS02 are 4-point composite field screening samples. FS03 and FS04 are 6-point composite field screening samples. FS05 is a 3-point composite field screening sample.

Legend

- Point of Release
- Chloride Soil Field Screening Area (6/28/2022)
- Wet Area (2/1/2022)
- Sample Area
- Oil & Gas Well

Cottonwood CONSULTING

Mapping by: E. Millar, 6/28/2022
Coordinate System:
NAD 1983 UTM Zone 13 N

Location: Sec 30 T31N R8W NMPM

Kernaghan B #007
Project Map
Simcoe LLC

Field Screening Process / Procedure
Provided by Cottonwood Consulting

Chloride field screening was conducted by collecting soil samples with a stainless steel shovel from depths of 0-4 inches below ground surface, mixing the sample in a stainless steel bowl, and using Hach Chloride QuanTab® Test Strips (30-600 mg/L) to field screen the samples. FS01 and FS02 were 4-point composite samples, FS03 and FS04 were 6-point composite samples, and FS05 was a 3-point composite sample.

For each chloride field screening sample, Cottonwood added 180 mL of distilled water to 20g of soil in a beaker. The sample was stirred vigorously for 30 seconds, allowed to settle for one minute, then stirred vigorously for another 30 seconds. A filter paper, folded in a cone-shaped cup, was placed in the beaker. The lower end of the Quantab® strip was placed into the filtrate. 30 seconds after the moisture signal string at the top of the titrator turned dark, the Quantab® reading was recorded to the nearest 0.1 unit on the titrator scale at the tip of the yellow-white peak. The reading was then converted to ppm (mg/kg) chloride using the calibration chart then multiplied by the appropriate dilution factor per manufacturer's recommendations.

Cottonwood CONSULTING

Soil Sampling and Field Screening Results
Kernaghan B #007
Simcoe LLC

Parameter	SS01 2/1/2022 Wet area	SS02 2/1/2022 Wet area	SS03 2/1/2022 Wet area	SS04 2/1/2022 Wet area	SS05 2/1/2022 Wet area	SS06 2/1/2022 Wet area	Units
Depth	0-4	0-4	0-4	0-4	0-4	0-4	inches bgs
Field, PID	0.0	0.0	0.0	0.0	0.0	0.0	ppm
Chloride	793	676	676	994	575	703	mg/kg
Benzene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	mg/kg
Toluene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	mg/kg
Ethylbenzene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	mg/kg
Total Xylenes	<0.150	<0.150	<0.150	<0.150	<0.150	<0.150	mg/kg
Total BTEX	<0.300	<0.300	<0.300	<0.300	<0.300	<0.300	mg/kg
TPH (GRO)	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	mg/kg
TPH (DRO)	<10.0	<10.0	15.7	<10.0	<10.0	<10.0	mg/kg
TPH (EXT DRO)	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	mg/kg

Notes: SS01-SS13 are 5-point composite samples. FS01 and FS02 are 4-point composite field screening samples. FS03 and FS04 are 6-point composite field screening samples. FS05 is a 3-point composite field screening sample.

PID - Photoionization Detector
BTEX - Benzene, Toluene, Ethylbenzene, & Total Xylenes
TPH - Total Petroleum Hydrocarbons
GRO - Gasoline Range Organics
DRO - Diesel Range Organics
EXT - Extended
NA - Not Applicable
ppm - parts per million
bgs - below ground surface
mg/kg - milligrams per kilogram

Cottonwood CONSULTING

Soil Sampling and Field Screening Results (continued)
Kernaghan B #007
Simcoe LLC

Parameter	SS07 2/1/2022 Wet area	SS08 2/1/2022 Wet area	SS09 2/1/2022 Wet area	SS10 2/1/2022 Wet area	SS11 2/1/2022 Wet area	SS12 2/1/2022 Wet area	Units
Depth	0-4	0-4	0-4	0-4	0-4	0-4	inches bgs
Field, PID	0.0	0.0	0.0	0.0	0.0	0.0	ppm
Chloride	708	734	811	1,240	910	828	mg/kg
Benzene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	mg/kg
Toluene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	mg/kg
Ethylbenzene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	mg/kg
Total Xylenes	<0.150	<0.150	<0.150	<0.150	<0.150	<0.150	mg/kg
Total BTEX	<0.300	<0.300	<0.300	<0.300	<0.300	<0.300	mg/kg
TPH (GRO)	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	mg/kg
TPH (DRO)	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	mg/kg
TPH (EXT DRO)	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	mg/kg

Notes: SS01-SS13 are 5-point composite samples. FS01 and FS02 are 4-point composite field screening samples. FS03 and FS04 are 6-point composite field screening samples. FS05 is a 3-point composite field screening sample.

PID - Photoionization Detector
BTEX - Benzene, Toluene, Ethylbenzene, & Total Xylenes
TPH - Total Petroleum Hydrocarbons
GRO - Gasoline Range Organics
DRO - Diesel Range Organics
EXT - Extended
NA - Not Applicable
ppm - parts per million
bgs - below ground surface
mg/kg - milligrams per kilogram

Cottonwood CONSULTING

Soil Sampling and Field Screening Results (continued)
Kernaghan B #007
Simcoe LLC

Parameter	SS13 2/1/2022 Wet area	FS01 6/28/2022 Outside wet area	FS02 6/28/2022 Outside wet area	FS03 6/28/2022 Outside wet area	FS04 6/28/2022 Outside wet area	FS05 6/28/2022 Outside wet area	Units
Depth	0-4	0-4	0-4	0-4	0-4	0-4	inches bgs
Field, PID	0.0	-	-	-	-	-	ppm
Chloride	422	<320	<320	<320	<320	<320	mg/kg
Benzene	<0.050	-	-	-	-	-	mg/kg
Toluene	<0.050	-	-	-	-	-	mg/kg
Ethylbenzene	<0.050	-	-	-	-	-	mg/kg
Total Xylenes	<0.150	-	-	-	-	-	mg/kg
Total BTEX	<0.300	-	-	-	-	-	mg/kg
TPH (GRO)	<10.0	-	-	-	-	-	mg/kg
TPH (DRO)	<10.0	-	-	-	-	-	mg/kg
TPH (EXT DRO)	<10.0	-	-	-	-	-	mg/kg

Notes: SS01-SS13 are 5-point composite samples. FS01 and FS02 are 4-point composite field screening samples. FS03 and FS04 are 6-point composite field screening samples. FS05 is a 3-point composite field screening sample.

PID - Photoionization Detector
BTEX - Benzene, Toluene, Ethylbenzene, & Total Xylenes
TPH - Total Petroleum Hydrocarbons
GRO - Gasoline Range Organics
DRO - Diesel Range Organics
EXT - Extended
NA - Not Applicable
ppm - parts per million
bgs - below ground surface
mg/kg - milligrams per kilogram

Cottonwood CONSULTING

Kernaghan B #007
Photographic Log
Simcoe LLC

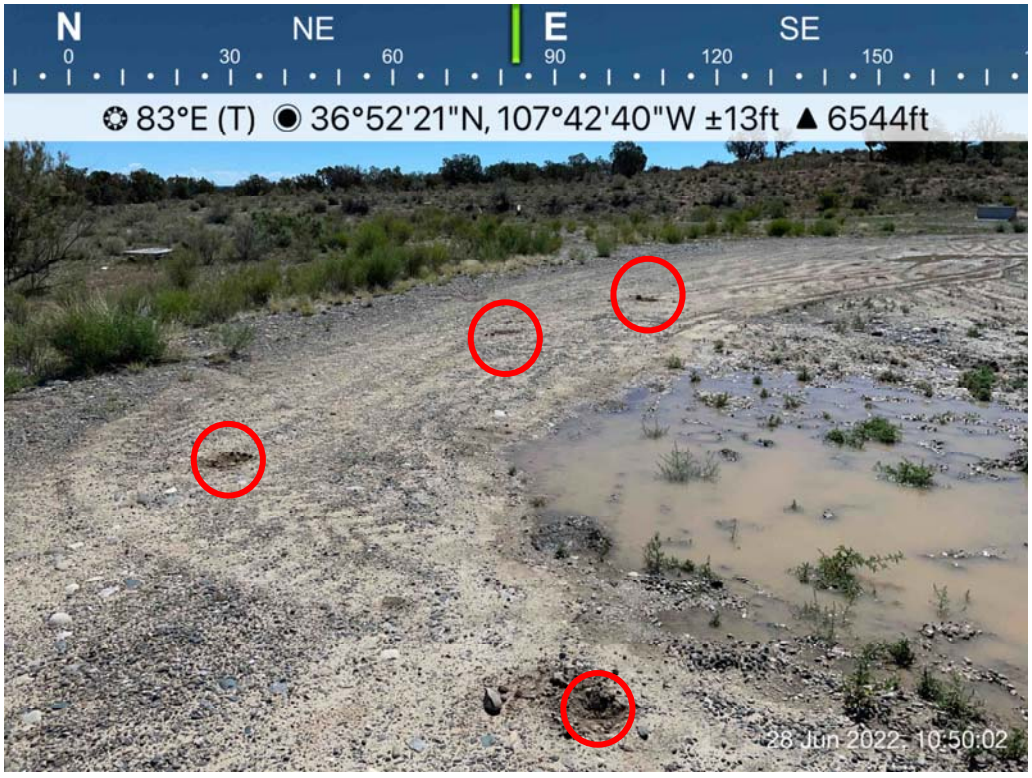


Photo 17: FS01 collected as a 4-point composite field screening sample from area adjacent to wet area, 6/28/2022.

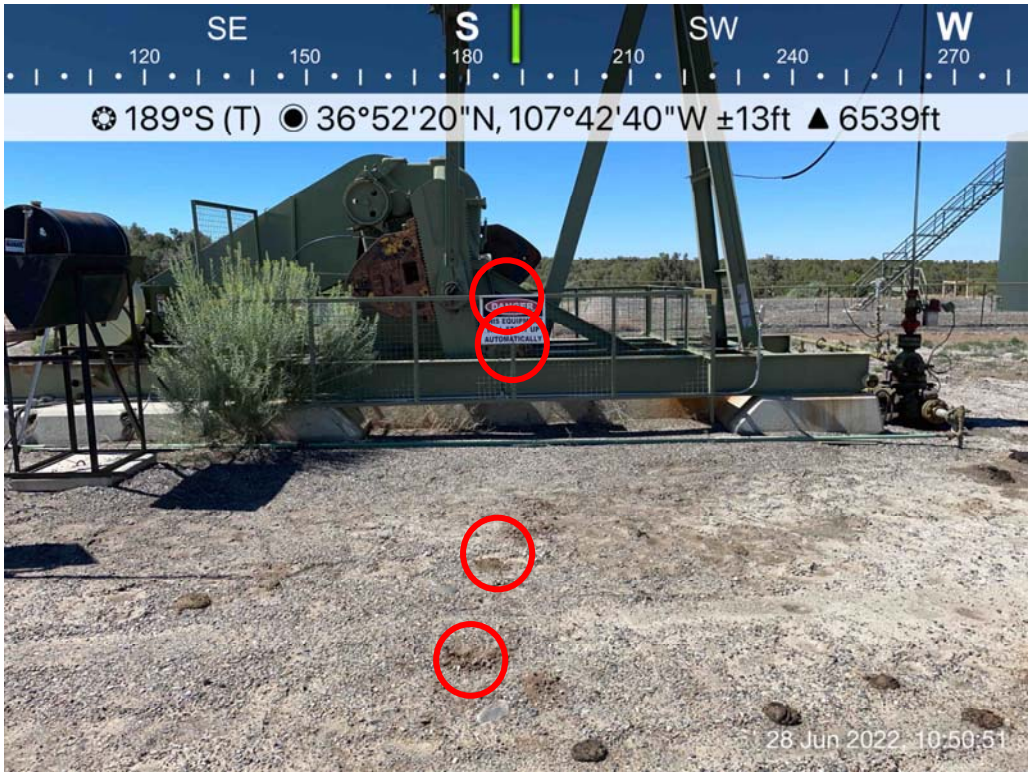


Photo 18: FS02 collected as a 4-point composite field screening sample from area adjacent to wet area, 6/28/2022.

Cottonwood CONSULTING

Kernaghan B #007
Photographic Log
Simcoe LLC

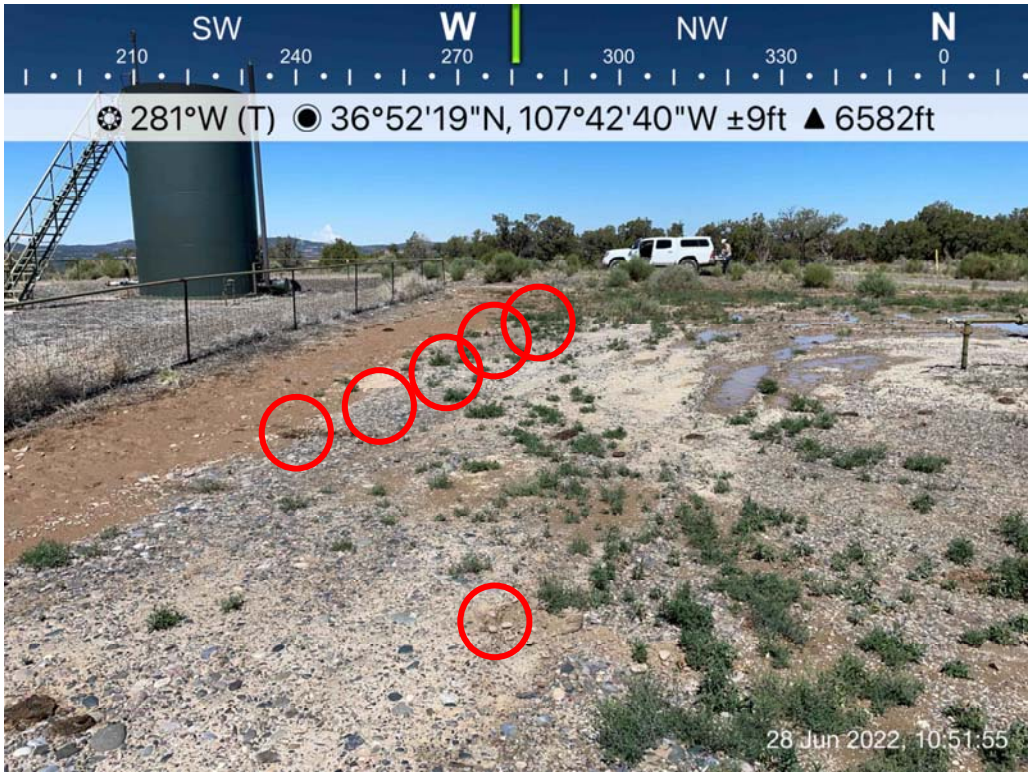


Photo 19: FS03 collected as a 6-point composite field screening sample from area adjacent to wet area, 6/28/2022.

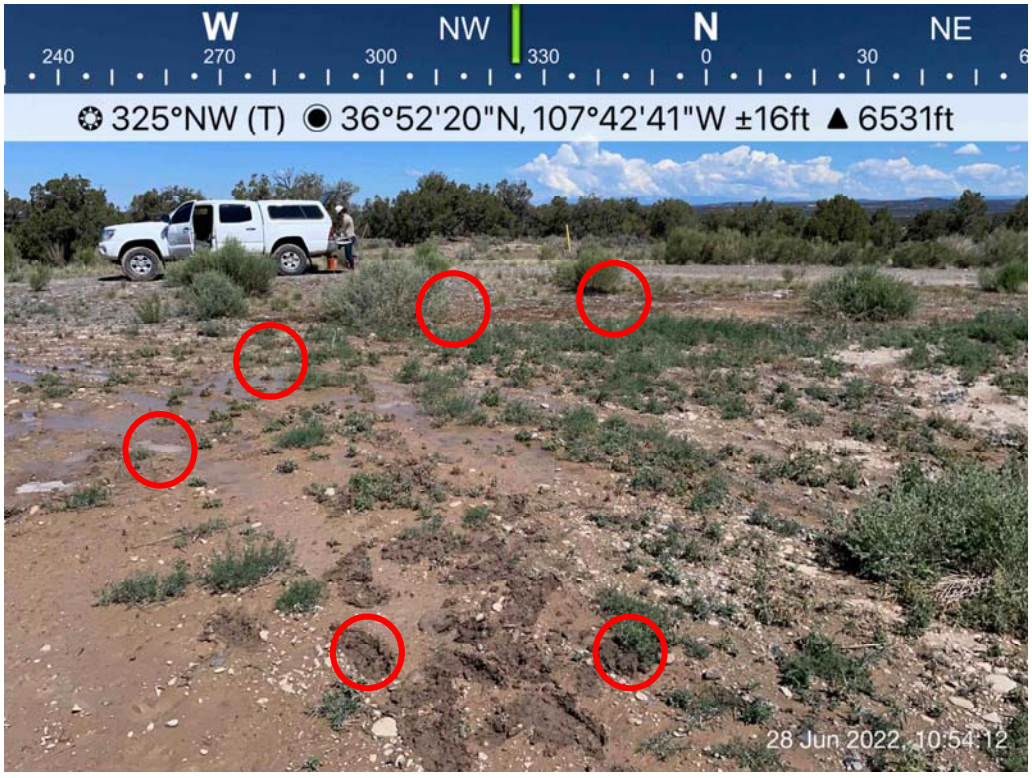


Photo 20: FS04 collected as a 6-point composite field screening sample from area adjacent to wet area, 6/28/2022.

Cottonwood CONSULTING

Kernaghan B #007
Photographic Log
Simcoe LLC

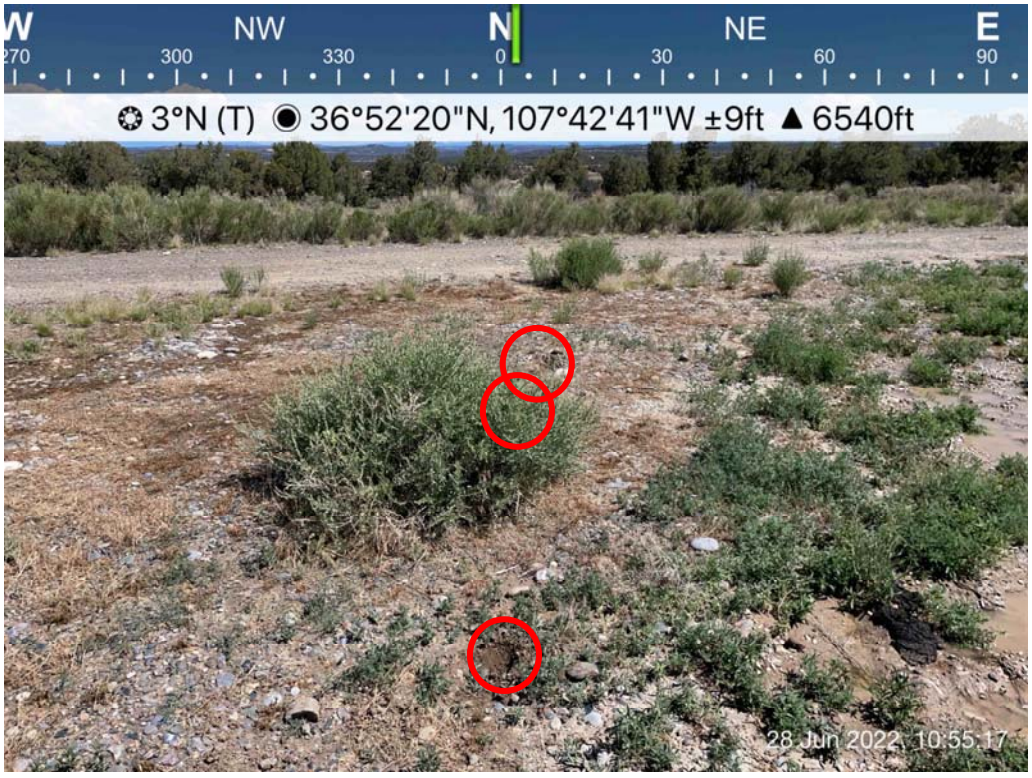


Photo 21: FS05 collected as a 3-point composite field screening sample from area adjacent to wet area, 6/28/2022.

75 Suttle Street
Durango, CO 81303
970.247.4220 Phone
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09 February 2022

Kyle Siesser
Cottonwood Consulting
PO Box 1653
Durango, CO 81302

RE: BTEX/TPH, Cl

Enclosed are the results of analyses for samples received by the laboratory on 02/01/22 14:45. The data to follow was performed, in whole or in part, by Green Analytical Laboratories. Any data that was performed by a subcontract laboratory is included within the GAL report, or with an additional report attached.

If you need any further assistance, please feel free to contact me.

Sincerely,

Debbie Zufelt
Reports Manager

All accredited analytes contained in this report are denoted by an asterisk (*). For a complete list of accredited analytes please do not hesitate to contact us via any of the contact information contained in this report. All of our certifications can be viewed at http://greenanalytical.com/certifications/

Green Analytical Laboratories is NELAP accredited through the Texas Commission on Environmental Quality. Accreditation applies to drinking water and non-potable water matrices for trace metals and a variety of inorganic parameters. Green Analytical Laboratories is also accredited through the Colorado Department of Public Health and Environment and EPA region 8 for trace metals, Cyanide, Fluoride, Nitrate, and Nitrite in drinking water. TNI Certificate Number: T104704514-22-13

Our affiliate laboratory, Cardinal Laboratories, is also NELAP accredited through the Texas Commission on Environmental Quality for a variety of organic constituents in drinking water, non-potable water and solid matrices. Cardinal is also accredited for regulated VOCs, TTHM, and HAA-5 in drinking water through the Colorado Department of Public Health and Environment and EPA region 8. TNI Certificate Number: T104704398-21-14

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
SS01	2202024-01	Solid	02/01/22 11:10	02/01/22 14:45	
SS02	2202024-02	Solid	02/01/22 11:15	02/01/22 14:45	
SS03	2202024-03	Solid	02/01/22 11:20	02/01/22 14:45	
SS04	2202024-04	Solid	02/01/22 11:25	02/01/22 14:45	
SS05	2202024-05	Solid	02/01/22 11:30	02/01/22 14:45	
SS06	2202024-06	Solid	02/01/22 11:35	02/01/22 14:45	
SS07	2202024-07	Solid	02/01/22 11:40	02/01/22 14:45	
SS08	2202024-08	Solid	02/01/22 11:50	02/01/22 14:45	
SS09	2202024-09	Solid	02/01/22 11:55	02/01/22 14:45	
SS10	2202024-10	Solid	02/01/22 12:00	02/01/22 14:45	
SS11	2202024-11	Solid	02/01/22 12:05	02/01/22 14:45	
SS12	2202024-12	Solid	02/01/22 12:10	02/01/22 14:45	
SS13	2202024-13	Solid	02/01/22 12:15	02/01/22 14:45	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

GREEN Analytical Laboratories

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

SS01

2202024-01 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
% Dry Solids	**72.4**			%	1	02/03/22 12:33	EPA160.3/1684		VJW
Soluble (DI Water Extraction)									
Chloride	**793**	69.0	2.10	mg/kg dry	50	02/05/22 21:43	EPA300.0		AES

Subcontracted -- **Cardinal Laboratories 101 East Marland Hobbs, NM 88240**

Volatile Organic Compounds by EPA Method 8021									
Benzene*	<0.050	0.050	0.004	mg/kg	50	02/03/22 20:06	8021B		JH
Toluene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 20:06	8021B		JH
Ethylbenzene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 20:06	8021B		JH
Total Xylenes*	<0.150	0.150	0.014	mg/kg	50	02/03/22 20:06	8021B		JH
Total BTEX	<0.300	0.300	0.030	mg/kg	50	02/03/22 20:06	8021B		JH
Surrogate: 4-Bromofluorobenzene (PID)			*103 %*	*69.9-140*		*02/03/22 20:06*	*8021B*		JH
Petroleum Hydrocarbons by GC FID									
GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	02/04/22 15:02	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	02/04/22 15:02	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	02/04/22 15:02	8015B		MS
Surrogate: 1-Chlorooctane			*69.9 %*	*66.9-136*		*02/04/22 15:02*	*8015B*		MS
Surrogate: 1-Chlorooctadecane			*66.7 %*	*59.5-142*		*02/04/22 15:02*	*8015B*		MS

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

SS02

2202024-02 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
% Dry Solids	**78.9**			%	1	02/03/22 12:33	EPA160.3/1684		VJW
Soluble (DI Water Extraction)									
Chloride	**676**	63.3	1.93	mg/kg dry	50	02/05/22 15:35	EPA300.0		AES
Subcontracted -- **Cardinal Laboratories 101 East Marland Hobbs, NM 88240**									
Volatile Organic Compounds by EPA Method 8021									
Benzene*	<0.050	0.050	0.004	mg/kg	50	02/03/22 19:13	8021B		MS/
Toluene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 19:13	8021B		MS/
Ethylbenzene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 19:13	8021B		MS/
Total Xylenes*	<0.150	0.150	0.014	mg/kg	50	02/03/22 19:13	8021B		MS/
Total BTEX	<0.300	0.300	0.030	mg/kg	50	02/03/22 19:13	8021B		MS/
Surrogate: 4-Bromofluorobenzene (PID)			*101 %*	*69.9-140*		*02/03/22 19:13*	*8021B*		MS/
Petroleum Hydrocarbons by GC FID									
GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	02/04/22 15:17	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	02/04/22 15:17	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	02/04/22 15:17	8015B		MS
Surrogate: 1-Chlorooctane			*72.6 %*	*66.9-136*		*02/04/22 15:17*	*8015B*		MS
Surrogate: 1-Chlorooctadecane			*69.9 %*	*59.5-142*		*02/04/22 15:17*	*8015B*		MS

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

GREEN Analytical Laboratories

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

SS03

2202024-03 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
% Dry Solids	**80.4**			%	1	02/03/22 12:33	EPA160.3/1684		VJW
Soluble (DI Water Extraction)									
Chloride	**676**	62.2	1.89	mg/kg dry	50	02/05/22 15:55	EPA300.0		AES

Subcontracted -- **Cardinal Laboratories 101 East Marland Hobbs, NM 88240**

Volatile Organic Compounds by EPA Method 8021									
Benzene*	<0.050	0.050	0.004	mg/kg	50	02/03/22 19:30	8021B		MS/
Toluene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 19:30	8021B		MS/
Ethylbenzene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 19:30	8021B		MS/
Total Xylenes*	<0.150	0.150	0.014	mg/kg	50	02/03/22 19:30	8021B		MS/
Total BTEX	<0.300	0.300	0.030	mg/kg	50	02/03/22 19:30	8021B		MS/
Surrogate: 4-Bromofluorobenzene (PID)			*101 %*	*69.9-140*		*02/03/22 19:30*	*8021B*		MS/
Petroleum Hydrocarbons by GC FID									
GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	02/04/22 15:31	8015B		MS
DRO >C10-C28*	**15.7**	10.0	4.26	mg/kg	1	02/04/22 15:31	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	02/04/22 15:31	8015B		MS
Surrogate: 1-Chlorooctane			*72.8 %*	*66.9-136*		*02/04/22 15:31*	*8015B*		MS
Surrogate: 1-Chlorooctadecane			*69.4 %*	*59.5-142*		*02/04/22 15:31*	*8015B*		MS

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Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

SS04

2202024-04 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
% Dry Solids	**69.5**			%	1	02/03/22 12:33	EPA160.3/1684		VJW
Soluble (DI Water Extraction)									
Chloride	**994**	71.9	2.19	mg/kg dry	50	02/05/22 16:16	EPA300.0		AES

Subcontracted -- **Cardinal Laboratories 101 East Marland Hobbs, NM 88240**

Volatile Organic Compounds by EPA Method 8021									
Benzene*	<0.050	0.050	0.004	mg/kg	50	02/03/22 19:46	8021B		MS/
Toluene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 19:46	8021B		MS/
Ethylbenzene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 19:46	8021B		MS/
Total Xylenes*	<0.150	0.150	0.014	mg/kg	50	02/03/22 19:46	8021B		MS/
Total BTEX	<0.300	0.300	0.030	mg/kg	50	02/03/22 19:46	8021B		MS/
Surrogate: 4-Bromofluorobenzene (PID)			*101 %*	*69.9-140*		*02/03/22 19:46*	*8021B*		MS/
Petroleum Hydrocarbons by GC FID									
GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	02/04/22 15:45	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	02/04/22 15:45	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	02/04/22 15:45	8015B		MS
Surrogate: 1-Chlorooctane			*94.5 %*	*66.9-136*		*02/04/22 15:45*	*8015B*		MS
Surrogate: 1-Chlorooctadecane			*90.6 %*	*59.5-142*		*02/04/22 15:45*	*8015B*		MS

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Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

SS05

2202024-05 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
% Dry Solids	**78.2**			%	1	02/03/22 12:33	EPA160.3/1684		VJW
Soluble (DI Water Extraction)									
Chloride	**575**	25.6	0.777	mg/kg dry	20	02/05/22 16:36	EPA300.0		AES

Subcontracted -- **Cardinal Laboratories 101 East Marland Hobbs, NM 88240**

Volatile Organic Compounds by EPA Method 8021									
Benzene*	<0.050	0.050	0.004	mg/kg	50	02/03/22 20:03	8021B		MS/
Toluene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 20:03	8021B		MS/
Ethylbenzene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 20:03	8021B		MS/
Total Xylenes*	<0.150	0.150	0.014	mg/kg	50	02/03/22 20:03	8021B		MS/
Total BTEX	<0.300	0.300	0.030	mg/kg	50	02/03/22 20:03	8021B		MS/
Surrogate: 4-Bromofluorobenzene (PID)			*100 %*	*69.9-140*		*02/03/22 20:03*	*8021B*		MS/
Petroleum Hydrocarbons by GC FID									
GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	02/04/22 16:00	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	02/04/22 16:00	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	02/04/22 16:00	8015B		MS
Surrogate: 1-Chlorooctane			*93.6 %*	*66.9-136*		*02/04/22 16:00*	*8015B*		MS
Surrogate: 1-Chlorooctadecane			*87.6 %*	*59.5-142*		*02/04/22 16:00*	*8015B*		MS

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Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

SS06

2202024-06 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
% Dry Solids	**79.9**			%	1	02/03/22 12:33	EPA160.3/1684		VJW
Soluble (DI Water Extraction)									
Chloride	**703**	62.6	1.90	mg/kg dry	50	02/05/22 16:57	EPA300.0		AES
Subcontracted -- **Cardinal Laboratories 101 East Marland Hobbs, NM 88240**									
Volatile Organic Compounds by EPA Method 8021									
Benzene*	<0.050	0.050	0.004	mg/kg	50	02/03/22 20:20	8021B		MS/
Toluene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 20:20	8021B		MS/
Ethylbenzene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 20:20	8021B		MS/
Total Xylenes*	<0.150	0.150	0.014	mg/kg	50	02/03/22 20:20	8021B		MS/
Total BTEX	<0.300	0.300	0.030	mg/kg	50	02/03/22 20:20	8021B		MS/
Surrogate: 4-Bromofluorobenzene (PID)			*101 %*	*69.9-140*		*02/03/22 20:20*	*8021B*		MS/
Petroleum Hydrocarbons by GC FID									
GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	02/04/22 16:14	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	02/04/22 16:14	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	02/04/22 16:14	8015B		MS
Surrogate: 1-Chlorooctane			*81.8 %*	*66.9-136*		*02/04/22 16:14*	*8015B*		MS
Surrogate: 1-Chlorooctadecane			*75.8 %*	*59.5-142*		*02/04/22 16:14*	*8015B*		MS

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Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

SS07

2202024-07 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
% Dry Solids	**74.0**			%	1	02/03/22 12:33	EPA160.3/1684		VJW
Soluble (DI Water Extraction)									
Chloride	**708**	67.6	2.06	mg/kg dry	50	02/05/22 17:17	EPA300.0		AES

Subcontracted -- **Cardinal Laboratories 101 East Marland Hobbs, NM 88240**

Volatile Organic Compounds by EPA Method 8021									
Benzene*	<0.050	0.050	0.004	mg/kg	50	02/03/22 20:36	8021B		MS/
Toluene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 20:36	8021B		MS/
Ethylbenzene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 20:36	8021B		MS/
Total Xylenes*	<0.150	0.150	0.014	mg/kg	50	02/03/22 20:36	8021B		MS/
Total BTEX	<0.300	0.300	0.030	mg/kg	50	02/03/22 20:36	8021B		MS/
Surrogate: 4-Bromofluorobenzene (PID)			*101 %*	*69.9-140*		*02/03/22 20:36*	*8021B*		MS/
Petroleum Hydrocarbons by GC FID									
GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	02/04/22 16:28	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	02/04/22 16:28	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	02/04/22 16:28	8015B		MS
Surrogate: 1-Chlorooctane			*74.1 %*	*66.9-136*		*02/04/22 16:28*	*8015B*		MS
Surrogate: 1-Chlorooctadecane			*68.3 %*	*59.5-142*		*02/04/22 16:28*	*8015B*		MS

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PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

SS08

2202024-08 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
% Dry Solids	**75.1**			%	1	02/03/22 12:33	EPA160.3/1684		VJW
Soluble (DI Water Extraction)									
Chloride	**734**	66.6	2.02	mg/kg dry	50	02/05/22 17:37	EPA300.0		AES

Subcontracted -- **Cardinal Laboratories 101 East Marland Hobbs, NM 88240**

Volatile Organic Compounds by EPA Method 8021									
Benzene*	<0.050	0.050	0.004	mg/kg	50	02/03/22 20:52	8021B		MS/
Toluene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 20:52	8021B		MS/
Ethylbenzene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 20:52	8021B		MS/
Total Xylenes*	<0.150	0.150	0.014	mg/kg	50	02/03/22 20:52	8021B		MS/
Total BTEX	<0.300	0.300	0.030	mg/kg	50	02/03/22 20:52	8021B		MS/
Surrogate: 4-Bromofluorobenzene (PID)			*101 %*	*69.9-140*		*02/03/22 20:52*	*8021B*		MS/
Petroleum Hydrocarbons by GC FID									
GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	02/04/22 16:43	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	02/04/22 16:43	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	02/04/22 16:43	8015B		MS
Surrogate: 1-Chlorooctane			*71.9 %*	*66.9-136*		*02/04/22 16:43*	*8015B*		MS
Surrogate: 1-Chlorooctadecane			*67.5 %*	*59.5-142*		*02/04/22 16:43*	*8015B*		MS

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Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

SS09

2202024-09 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
% Dry Solids	**71.2**			%	1	02/03/22 12:33	EPA160.3/1684		VJW
Soluble (DI Water Extraction)									
Chloride	**811**	70.2	2.14	mg/kg dry	50	02/05/22 17:58	EPA300.0		AES

Subcontracted -- **Cardinal Laboratories 101 East Marland Hobbs, NM 88240**

Volatile Organic Compounds by EPA Method 8021									
Benzene*	<0.050	0.050	0.004	mg/kg	50	02/03/22 21:09	8021B		MS/
Toluene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 21:09	8021B		MS/
Ethylbenzene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 21:09	8021B		MS/
Total Xylenes*	<0.150	0.150	0.014	mg/kg	50	02/03/22 21:09	8021B		MS/
Total BTEX	<0.300	0.300	0.030	mg/kg	50	02/03/22 21:09	8021B		MS/
Surrogate: 4-Bromofluorobenzene (PID)			*99.4 %*	*69.9-140*		*02/03/22 21:09*	*8021B*		MS/
Petroleum Hydrocarbons by GC FID									
GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	02/04/22 16:56	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	02/04/22 16:56	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	02/04/22 16:56	8015B		MS
Surrogate: 1-Chlorooctane			*68.3 %*	*66.9-136*		*02/04/22 16:56*	*8015B*		MS
Surrogate: 1-Chlorooctadecane			*64.1 %*	*59.5-142*		*02/04/22 16:56*	*8015B*		MS

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Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

SS10

2202024-10 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
% Dry Solids	**70.3**			%	1	02/03/22 12:33	EPA160.3/1684		VJW
Soluble (DI Water Extraction)									
Chloride	**1240**	71.1	2.16	mg/kg dry	50	02/05/22 18:18	EPA300.0		AES

Subcontracted -- **Cardinal Laboratories 101 East Marland Hobbs, NM 88240**

Volatile Organic Compounds by EPA Method 8021									
Benzene*	<0.050	0.050	0.004	mg/kg	50	02/03/22 21:25	8021B		MS/
Toluene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 21:25	8021B		MS/
Ethylbenzene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 21:25	8021B		MS/
Total Xylenes*	<0.150	0.150	0.014	mg/kg	50	02/03/22 21:25	8021B		MS/
Total BTEX	<0.300	0.300	0.030	mg/kg	50	02/03/22 21:25	8021B		MS/
Surrogate: 4-Bromofluorobenzene (PID)			*102 %*	*69.9-140*		*02/03/22 21:25*	*8021B*		MS/
Petroleum Hydrocarbons by GC FID									
GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	02/04/22 17:11	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	02/04/22 17:11	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	02/04/22 17:11	8015B		MS
Surrogate: 1-Chlorooctane			*102 %*	*66.9-136*		*02/04/22 17:11*	*8015B*		MS
Surrogate: 1-Chlorooctadecane			*104 %*	*59.5-142*		*02/04/22 17:11*	*8015B*		MS

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Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

SS11

2202024-11 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
% Dry Solids	**70.2**			%	1	02/03/22 12:33	EPA160.3/1684		VJW
Soluble (DI Water Extraction)									
Chloride	**910**	71.3	2.17	mg/kg dry	50	02/05/22 18:39	EPA300.0		AES

Subcontracted -- **Cardinal Laboratories 101 East Marland Hobbs, NM 88240**

Volatile Organic Compounds by EPA Method 8021									
Benzene*	<0.050	0.050	0.004	mg/kg	50	02/03/22 21:41	8021B		MS/
Toluene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 21:41	8021B		MS/
Ethylbenzene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 21:41	8021B		MS/
Total Xylenes*	<0.150	0.150	0.014	mg/kg	50	02/03/22 21:41	8021B		MS/
Total BTEX	<0.300	0.300	0.030	mg/kg	50	02/03/22 21:41	8021B		MS/
Surrogate: 4-Bromofluorobenzene (PID)			*101 %*	*69.9-140*		*02/03/22 21:41*	*8021B*		MS/
Petroleum Hydrocarbons by GC FID									
GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	02/04/22 17:26	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	02/04/22 17:26	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	02/04/22 17:26	8015B		MS
Surrogate: 1-Chlorooctane			*86.7 %*	*66.9-136*		*02/04/22 17:26*	*8015B*		MS
Surrogate: 1-Chlorooctadecane			*86.4 %*	*59.5-142*		*02/04/22 17:26*	*8015B*		MS

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PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

SS12

2202024-12 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
% Dry Solids	**73.7**			%	1	02/03/22 12:33	EPA160.3/1684		VJW
Soluble (DI Water Extraction)									
Chloride	**828**	67.8	2.06	mg/kg dry	50	02/05/22 19:40	EPA300.0		AES

Subcontracted -- **Cardinal Laboratories 101 East Marland Hobbs, NM 88240**

Volatile Organic Compounds by EPA Method 8021									
Benzene*	<0.050	0.050	0.004	mg/kg	50	02/03/22 21:58	8021B		MS/
Toluene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 21:58	8021B		MS/
Ethylbenzene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 21:58	8021B		MS/
Total Xylenes*	<0.150	0.150	0.014	mg/kg	50	02/03/22 21:58	8021B		MS/
Total BTEX	<0.300	0.300	0.030	mg/kg	50	02/03/22 21:58	8021B		MS/
Surrogate: 4-Bromofluorobenzene (PID)			*101 %*	*69.9-140*		*02/03/22 21:58*	*8021B*		MS/
Petroleum Hydrocarbons by GC FID									
GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	02/04/22 17:40	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	02/04/22 17:40	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	02/04/22 17:40	8015B		MS
Surrogate: 1-Chlorooctane			*87.5 %*	*66.9-136*		*02/04/22 17:40*	*8015B*		MS
Surrogate: 1-Chlorooctadecane			*87.3 %*	*59.5-142*		*02/04/22 17:40*	*8015B*		MS

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Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

SS13

2202024-13 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
% Dry Solids	**82.5**			%	1	02/03/22 12:33	EPA160.3/1684		VJW
Soluble (DI Water Extraction)									
Chloride	**422**	24.2	0.737	mg/kg dry	20	02/05/22 20:01	EPA300.0		AES

Subcontracted -- **Cardinal Laboratories 101 East Marland Hobbs, NM 88240**

Volatile Organic Compounds by EPA Method 8021									
Benzene*	<0.050	0.050	0.004	mg/kg	50	02/03/22 22:15	8021B		MS/
Toluene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 22:15	8021B		MS/
Ethylbenzene*	<0.050	0.050	0.006	mg/kg	50	02/03/22 22:15	8021B		MS/
Total Xylenes*	<0.150	0.150	0.014	mg/kg	50	02/03/22 22:15	8021B		MS/
Total BTEX	<0.300	0.300	0.030	mg/kg	50	02/03/22 22:15	8021B		MS/
Surrogate: 4-Bromofluorobenzene (PID)			*100 %*	*69.9-140*		*02/03/22 22:15*	*8021B*		MS/
Petroleum Hydrocarbons by GC FID									
GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	02/04/22 17:55	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	02/04/22 17:55	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	02/04/22 17:55	8015B		MS
Surrogate: 1-Chlorooctane			*84.9 %*	*66.9-136*		*02/04/22 17:55*	*8015B*		MS
Surrogate: 1-Chlorooctadecane			*83.3 %*	*59.5-142*		*02/04/22 17:55*	*8015B*		MS

Green Analytical Laboratories

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Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B220313 - General Prep - Wet Chem										
Duplicate (B220313-DUP1)		**Source: 2202024-01**		Prepared: 02/02/22 Analyzed: 02/03/22						
% Dry Solids	73.5		%		72.4			1.43	20	
Duplicate (B220313-DUP2)		**Source: 2202042-01**		Prepared: 02/02/22 Analyzed: 02/03/22						
% Dry Solids	58.9		%		58.8			0.212	20	

Soluble (DI Water Extraction) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B220337 - IC- Ion Chromatograph										
Blank (B220337-BLK1)				Prepared: 02/04/22 Analyzed: 02/05/22						
Chloride	ND	10.0	mg/kg wet							
LCS (B220337-BS1)				Prepared: 02/04/22 Analyzed: 02/05/22						
Chloride	252	10.0	mg/kg wet	250		101	85-115			
LCS Dup (B220337-BSD1)				Prepared: 02/04/22 Analyzed: 02/05/22						
Chloride	260	10.0	mg/kg wet	250		104	85-115	3.34	20	

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Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2020301 - Volatiles										
Blank (2020301-BLK1)			Prepared & Analyzed: 02/03/22							
Surrogate: 4-Bromofluorobenzene (PID)	*0.0523*		mg/kg	*0.0500*		*105*	*69.9-140*			
Benzene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
LCS (2020301-BS1)			Prepared & Analyzed: 02/03/22							
Surrogate: 4-Bromofluorobenzene (PID)	*0.0514*		mg/kg	*0.0500*		*103*	*69.9-140*			
Benzene	1.95	0.050	mg/kg	2.00		97.7	85.1-114			
Ethylbenzene	1.92	0.050	mg/kg	2.00		96.2	84.4-115			
m,p-Xylene	3.98	0.100	mg/kg	4.00		99.4	85.5-116			
o-Xylene	1.99	0.050	mg/kg	2.00		99.4	85.2-111			
Toluene	2.08	0.050	mg/kg	2.00		104	88.6-116			
Total Xylenes	5.96	0.150	mg/kg	6.00		99.4	86.2-113			
LCS Dup (2020301-BSD1)			Prepared: 02/03/22 Analyzed: 02/04/22							
Surrogate: 4-Bromofluorobenzene (PID)	*0.0536*		mg/kg	*0.0500*		*107*	*69.9-140*			
Benzene	1.86	0.050	mg/kg	2.00		92.9	85.1-114	4.97	12.6	
Ethylbenzene	1.90	0.050	mg/kg	2.00		95.2	84.4-115	1.03	13.9	
m,p-Xylene	3.96	0.100	mg/kg	4.00		99.0	85.5-116	0.474	13.6	
o-Xylene	1.96	0.050	mg/kg	2.00		98.2	85.2-111	1.14	14.1	
Toluene	2.07	0.050	mg/kg	2.00		103	88.6-116	0.518	13.3	
Total Xylenes	5.92	0.150	mg/kg	6.00		98.7	86.2-113	0.695	13.4	
Batch 2020302 - Volatiles										
Blank (2020302-BLK1)			Prepared & Analyzed: 02/03/22							
Surrogate: 4-Bromofluorobenzene (PID)	*ND*		mg/kg	*0.0500*		*99.3*	*69.9-140*			
Benzene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
LCS (2020302-BS1)			Prepared & Analyzed: 02/03/22							
Surrogate: 4-Bromofluorobenzene (PID)	*0.0495*		mg/kg	*0.0500*		*99.1*	*69.9-140*			
Benzene	1.94	0.050	mg/kg	2.00		96.8	85.1-114			
Ethylbenzene	1.85	0.050	mg/kg	2.00		92.3	84.4-115			

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Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

Volatile Organic Compounds by EPA Method 8021 - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2020302 - Volatiles (Continued)										
LCS (2020302-BS1) (Continued)				Prepared & Analyzed: 02/03/22						
m,p-Xylene	3.76	0.100	mg/kg	4.00		94.1	85.5-116			
o-Xylene	1.83	0.050	mg/kg	2.00		91.7	85.2-111			
Toluene	1.84	0.050	mg/kg	2.00		92.0	88.6-116			
Total Xylenes	5.60	0.150	mg/kg	6.00		93.3	86.2-113			
LCS Dup (2020302-BSD1)				Prepared & Analyzed: 02/03/22						
Surrogate: 4-Bromofluorobenzene (PID)	*0.0492*		mg/kg	*0.0500*		*98.4*	*69.9-140*			
Benzene	2.17	0.050	mg/kg	2.00		109	85.1-114	11.5	12.6	
Ethylbenzene	2.07	0.050	mg/kg	2.00		103	84.4-115	11.2	13.9	
m,p-Xylene	4.20	0.100	mg/kg	4.00		105	85.5-116	10.9	13.6	
o-Xylene	2.04	0.050	mg/kg	2.00		102	85.2-111	10.5	14.1	
Toluene	2.08	0.050	mg/kg	2.00		104	88.6-116	12.3	13.3	
Total Xylenes	6.23	0.150	mg/kg	6.00		104	86.2-113	10.8	13.4	

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Cottonwood Consulting	Project: BTEX/TPH, Cl	
PO Box 1653	Project Name / Number: Kernaghan B #007	**Reported:**
Durango CO, 81302	Project Manager: Kyle Siesser	02/09/22 10:43

Petroleum Hydrocarbons by GC FID - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2020401 - General Prep - Organics										
Blank (2020401-BLK1)				Prepared & Analyzed: 02/04/22						
Surrogate: 1-Chlorooctadecane	*49.6*		mg/kg	*50.0*		*99.2*	*59.5-142*			
Surrogate: 1-Chlorooctane	*49.5*		mg/kg	*50.0*		*99.1*	*66.9-136*			
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
GRO C6-C10	ND	10.0	mg/kg							
LCS (2020401-BS1)				Prepared & Analyzed: 02/04/22						
Surrogate: 1-Chlorooctadecane	*47.9*		mg/kg	*50.0*		*95.8*	*59.5-142*			
Surrogate: 1-Chlorooctane	*49.2*		mg/kg	*50.0*		*98.3*	*66.9-136*			
DRO >C10-C28	197	10.0	mg/kg	200		98.4	83-129			
GRO C6-C10	200	10.0	mg/kg	200		100	81.6-129			
Total TPH C6-C28	397	10.0	mg/kg	400		99.2	84.5-127			
LCS Dup (2020401-BSD1)				Prepared & Analyzed: 02/04/22						
Surrogate: 1-Chlorooctadecane	*49.4*		mg/kg	*50.0*		*98.8*	*59.5-142*			
Surrogate: 1-Chlorooctane	*49.4*		mg/kg	*50.0*		*98.7*	*66.9-136*			
DRO >C10-C28	200	10.0	mg/kg	200		100	83-129	1.81	17.9	
GRO C6-C10	199	10.0	mg/kg	200		99.4	81.6-129	0.593	21.4	
Total TPH C6-C28	399	10.0	mg/kg	400		99.8	84.5-127	0.607	17.6	

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
	*Results reported on as received basis unless designated as dry.
RPD	Relative Percent Difference
LCS	Laboratory Control Sample (Blank Spike)
RL	Report Limit
MDL	Method Detection Limit

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Green Analytical Laboratories
(970) 247-4220
Fax: (970) 247-4227
service@greenanalytical.com or dzufelt@greenanalytical.com
75 Suttle St Durango, CO 81303

Company Name: Cottonwood Consulting LLC	Bill to (if different):
Project Manager: Kyle Siesser	P.O. #:
Address: PO Box 1653	Company:
City: Durango **State:** CO **Zip:** 81302	Attn:
Phone #: 970-764-7356 **Email:** ksiesser@cottonwoodconsulting.com	Address:
Additional Report To:	City:
Project Name: KERNAGHAN B #007	State: Zip:
Project Number:	Phone #:
Sampler Name (Print): Emma Millar/Jacob Harter	Fax or Email:

FOR LAB USE ONLY Lab I.D.	Sample Name or Location	Collected Date	Collected Time	Matrix (check one) GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	OTHER :	# of containers No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	ANALYSIS REQUEST BTEX	TPH	Chlorides (300.0)
2202-0240	SS01	2/1/2022	1110					X		3						X	X	X
-02	SS02		1115					X		3						X	X	X
-03	SS03		1120					X		3						X	X	X
-04	SS04		1125					X		3						X	X	X
-05	SS05		1130					X		3						X	X	X
-06	SS06		1135					X		3						X	X	X
-07	SS07		1140					X		3						X	X	X
-08	SS08		1150					X		3						X	X	X
-09	SS09		1155					X		3						X	X	X
-10	SS10		1200					X		3						X	X	X

Relinquished By:	**Date:** 2/1/22 **Time:** 1445	Received By: Linda Gumper	ADDITIONAL REMARKS: Report to State? (Circle) Yes (No)
Relinquished By:	Date: Time:	Received By:	
Relinquished By:	Date: Time:	Received By:	
Delivered By: (Circle One) Sampler UPS - FedEx - Kangaroo - Other: Lacon#3		Temperature at receipt: 2/1/22 8:00 4.2 /4.1 8.6/8.5	CHECKED BY: LBS on Ice

† GAL cannot always accept verbal changes. Please fax or email written change requests.
* Chain of Custody must be signed in "Reliquished By:" as an acceptance of services and all applicable charges.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Analytical Laboratories
(970) 247-4220
Fax: (970) 247-4227
service@greenanalytical.com or dzufelt@greenanalytical.com
75 Suttle St Durango, CO 81303

Company Name: Cottonwood Consulting LLC
Project Manager: Kyle Siesser
Address: PO Box 1653
City: Durango State: CO Zip: 81302
Phone #: 970-764-7356 Email: ksiesser@cottonwoodconsulting.com
Additional Report To:
Project Name: KERNAGHAN B #007
Project Number:
Sampler Name (Print): Emma Millar/Jacob Harter

Bill to (if different):
P.O. #:
Company:
Attn:
Address:
City:
State: Zip:
Phone #:
Fax or Email:

FOR LAB USE ONLY Lab I.D.	Sample Name or Location	Collected Date	Collected Time	Matrix (check one) GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	OTHER :	# of containers No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	ANALYSIS REQUEST BTEX	TPH	Chlorides (300.0)
2201-024-11	SS11	2/1/2022	1205					X		3						X	X	X
-12	SS12	↓	1210					X		3						X	X	X
-13	SS13	↓	1215					X		3						X	X	X

Relinquished By:	Date: 2/1/22 Time: 1445	Received By: Linda Gompert
Relinquished By:	Date: Time:	Received By:
Relinquished By:	Date: Time:	Received By:

ADDITIONAL REMARKS:

Report to State? (Circle) Yes (No)

Delivered By: (Circle One) (Sampler) UPS - FedEx - Kangaroo - Other: Tasett3

Temperature at reciept: 4.2/4.1

CHECKED BY: LDG

on Ice

† GAL cannot always accept verbal changes. Please fax or email written change requests.

* Chain of Custody must be signed in "Reliquished By:" as an acceptance of services and all applicable charges.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 139276

CONDITIONS

Operator: SIMCOE LLC 1199 Main Ave., Suite 101 Durango, CO 81301	OGRID: 329736
	Action Number: 139276
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	9/6/2022