

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

Form C-141
Revised August 8, 2011

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

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR Initial Report Final Report

Name of Company: Williams Four Corners LLC	Contact: Aaron Galer
Address: Arroyo 1755 Arroyo Drive, Bloomfield, NM 87413	Telephone No.: (801) 584-6746
Facility Name: Florance Gas Com J No. 16A	Facility Type: Pipeline
Surface Owner: BLM	Mineral Owner
API No. 30-045-21790	

LOCATION OF RELEASE

Unit Letter P	Section 6	Township 30N	Range 9W	Feet from the	North/South Line	Feet from the	East/West Line	County San Juan
------------------	--------------	-----------------	-------------	---------------	------------------	---------------	----------------	--------------------

Latitude 36.835162° N Longitude -107.816092° W

NATURE OF RELEASE

Type of Release: Natural Gas Condensate/Produced Water	Volume of Release:	Volume Recovered:
Source of Release: Historical natural gas gathering operations	Date and Hour of Occurrence:	Date and Hour of Discovery:
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour: N/A	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. Not Applicable	

If a Watercourse was Impacted, Describe Fully. *
Not Applicable

Describe Cause of Problem and Remedial Action Taken. *
Historical release(s) in area impacted soil and groundwater at the well location.

Describe Area Affected and Cleanup Action Taken. *
OCD required Williams to fully delineate the southern portion of the site as a condition of approval for the proposed backfill plan as described in the OCD email dated December 8, 2016. The attached remedial assessment work plan describes how Williams will complete delineation at the site.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health, or the environment. In addition, NMOCD 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.

Signature: <i>Aaron Galer</i>	OIL CONSERVATION DIVISION	
Printed Name: Aaron Galer	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Environmental Specialist	Approval Date: <i>5/8/17</i>	Expiration Date:
E-mail Address: aaron.galer@williams.com	Conditions of Approval: <i>See Attached.</i>	Attached <input checked="" type="checkbox"/>
Date: 05/03/2017	Phone: (801) 584-6746	

* Attach Additional Sheets If Necessary

*#NCS 162985 4256
3RP-364*

17

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Ken McQueen
Cabinet Secretary

Matthias Sayer
Deputy Cabinet Secretary

David R. Catanach, Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.5.11

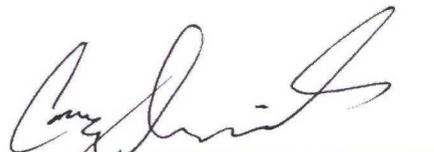
OCD has approved Williams proposed delineation plan received via email 5/3/17 with the following conditions of approval.

Conditions of Approval:

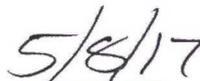
- Williams Delineation will fully delineate the release both horizontally and vertically. Boreholes that exceeded 100ppm OVM or exhibit heavy staining and/or apparent hydrocarbon impacts will be considered impacted until sampled.
- Horizontal delineation of soil impacts must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C6 thru C36). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C6 thru C36), Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below the sites closure standards must be demonstrated as existing above the water table.
- Composite sampling will not be allowed for delineation
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated).

- As per Phone conversations, the OCD is requesting Williams to include an additional Borehole(BH) to the NE outside of the excavation. OCD is also requesting that Williams reposition one of the proposed SE BH or include an additional BH to be outside the excavation. (Please see attached "Figure 3" with proposed areas final positions can be discussed onsite).
- Within 30 days of completion of delineation Williams will submit to the OCD a delineation report and proposed alternative remediation plan.
- As per the October 6, 2016 Letter upon completion of MW-3R Williams will start the recovery of Light Non-Aqueous Phase Liquids (LNAPL) from MW-3R if present.
- Following the NMOCD Guidelines for Remediation's of Leaks, Spills and Releases the remediation's levels for soils at the Florance Gas Com J 16A are as follows 10 mg/kg Benzene, 50 mg/kg BTEX and 100 mg/kg TPH (DRO-GRO-MRO)

If you have any questions, please feel free to contact me at your leisure.



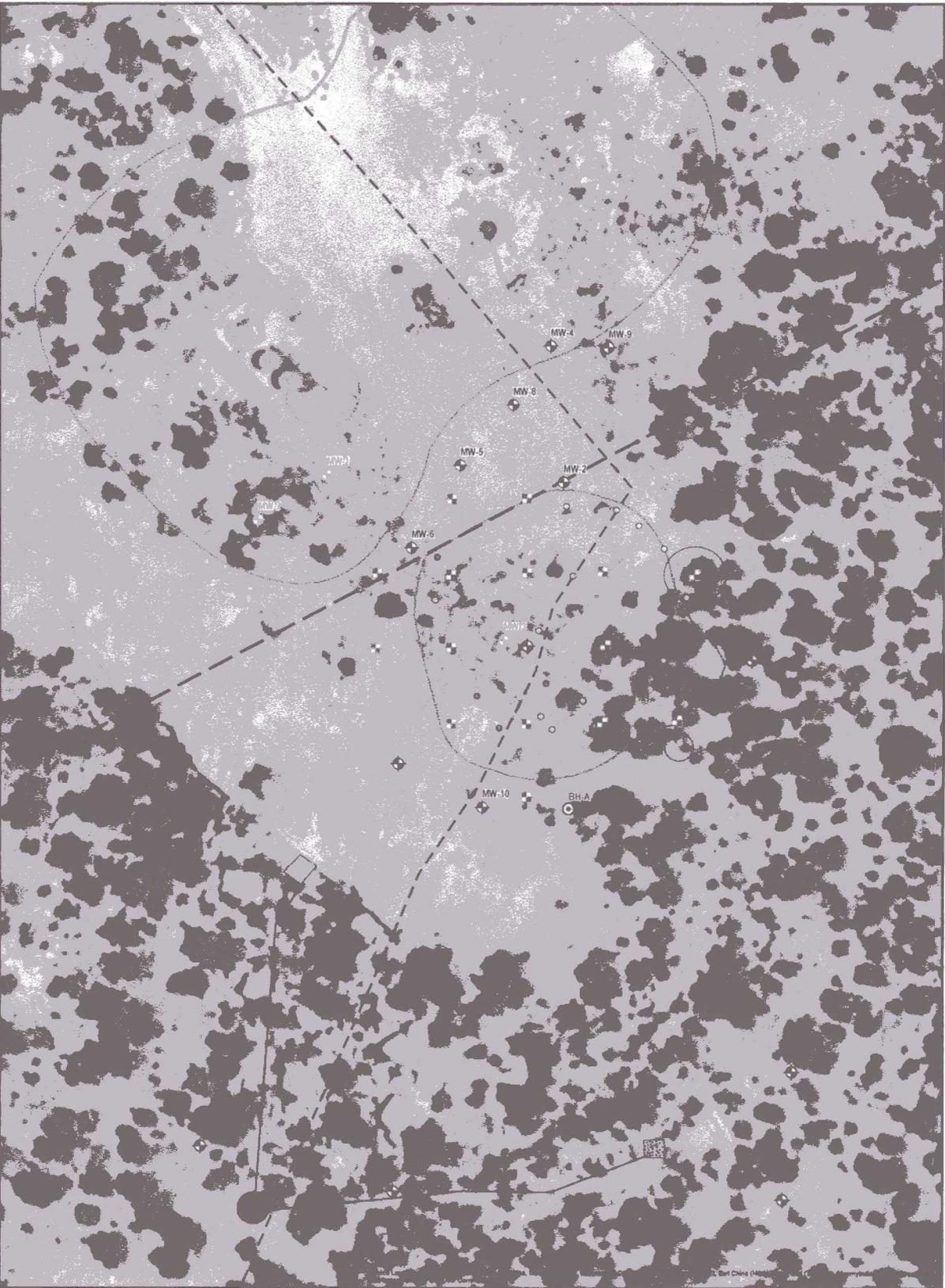
NMOCD Approved by Signature



Date

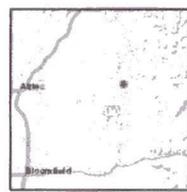
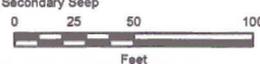
155294-GIS-SP-000000, Issued for Review, No. 1, 10/24/2017

G:\Millennium\GIS\Documents\Project_Information\155294_GIS_proposed_monitoring_mw\Analysis\cshp\analysis.mxd Date: 11/07/2017 2:26:08 PM



Legend

- ✦ Proposed Soil Boring
- ⊕ Proposed Monitor Well
- ⊕ Monitor Well
- ⊕ Plugged Monitor Well
- ⊙ Abandoned Borehole
- Excavation Soil Sample (Pass)
- Excavation Soil Sample (Fail)
- Excavation Limits
- Remediation Collection Line
- - - WFS Line
- - - Responsibility Demarcation Line
- 95 BBL Remediation Tank
- Concrete Trap
- Main Seep
- Secondary Seep



WILLIAMS FOUR CORNERS LLC	
FIGURE NUMBER 3	FLORANCE GC J 16A PROPOSED SOIL BORINGS
CBI Environmental & Infrastructure, Inc. 6380 South Fiddlers Green Circle, Suite 310 Greenwood Village, Colorado 80111	



CB&I
6380 South Fiddlers Green, Suite 310
Greenwood Village, CO 80111
Tel: +1 303 741 7700
Fax: +1 303 741 7479
www.CBI.com

Remedial Assessment Work Plan

Florance Gas Com J16A, 3RP-364

Florance Gas Com J16A, 3RP-364
San Juan County, New Mexico

Project 155624

April 19, 2017

Prepared for:



Williams Four Corners LLC

Prepared by:

CB&I Environmental & Infrastructure, Inc.

6380 South Fiddlers Green, Suite 310
Greenwood Village, CO 80111
United States
www.CBI.com



Table of Contents

1.0	INTRODUCTION	1
1.1	WORK PLAN BACKGROUND.....	1
1.2	REMEDIAL ACTIONS.....	1
1.3	WORK PLAN OBJECTIVES	2
2.0	SCOPE OF WORK.....	3
2.1	SCOPE DEVELOPMENT	3
2.2	SOIL BORING INSTALLATION	3
2.3	MONITORING WELL INSTALLATION	4
2.4	GROUNDWATER SAMPLING	4
2.5	REPORTING.....	5
3.0	IMPLEMENTATION SCHEDULE.....	6

List of Figures

- Figure 1 Site Map
- Figure 2 Excavation Limits
- Figure 3 Proposed Soil Borings
- Figure 4 Proposed Monitoring Wells



1.0 INTRODUCTION

1.1 WORK PLAN BACKGROUND

On October 6, 2016, the State of New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (OCD) issued review of prior investigation information submitted by Williams Field Services LLC (Williams) and BP America Production Company (BP) along with OCD requirements for site action at the Florance Gas Com J16A site in San Juan County, New Mexico. **Figure 1** presents a site map. Investigation data from both BP and Williams has indicated the presence of multiple locations of soil contamination at the site and potential that some of these locations could be sources of the groundwater impacts identified.

Williams' requirements include:

- Within 30 days, Williams will remediate both horizontally and vertically the area near SV-33, 34, the former below ground tank (BGT) location, and the former Public Service Company of New Mexico (PNM) earthen pit area;
- Within 30 days, Williams will start the recovery of Light Non-Aqueous Phase Liquids (LNAPL) from MW-3 or within 30 days following the excavation, Williams will drill and install a replacement well in the vicinity of MW-3 and commence the recovery of NAPL, if needed; and,
- Within 45 days Williams will provide the OCD with a Draft Groundwater Remediation plan as requested in March 2016.

With these requirements, soil excavation and treatment activities were initiated.

1.2 REMEDIAL ACTIONS

In response to these requirements, Williams and BP initiated excavation and soil treatment actions at previously identified sources. **Figure 2** shows the extent of excavation actions completed by both Williams and BP at the site.

- On October 26, 2016 Williams submitted a soil remediation work plan to OCD outlining plans for excavation and soil treatment;
- On October 28, 2016 OCD approved the soil remediation work plan;
- On November 1, 2016, Williams initiated soil excavation and treatment activities;
- On December 2, 2016 Williams submitted plans to sample, treat the excavation with MicroBlaze, and backfill;
- On December 8, 2016 OCD approved the plans with requirements to initiate any additional delineation within 30 days following BP's planned excavation and soil treatment. Within 30 days of delineation activities, Williams is required to submit a delineation report and proposed remediation plan for addressing remaining soil and groundwater impacts.
- As of December 12, 2016 Williams had excavated and treated approximately 22,100 cubic yards of soil, applied approximately 6,000 gallons of a 3% MicroBlaze to the open excavation, and completed backfill.
- On January 4, 2017, BP initiated excavation and soil treatment in areas of their operations (north).



- On January 11, 2017, BP completed additional soil boring and monitoring well installation activities at the site. Monitoring wells MW-6, 7, 8, 9, and 10 were installed. A soil boring (BH-A) was advanced east of MW-10, but subsequently not completed as a well.
- As of April 6, 2017, BP excavation activities were complete and excavated soil treatment was being completed in advance of backfill.

1.3 WORK PLAN OBJECTIVES

Remedial design will advance following final delineation of remaining soil and groundwater impacts. This Work Plan was prepared with the following objectives to comply with the December 8, 2016 directive:

- To horizontally and vertically delineate soils around and/or beneath the Williams excavation area where soil remediation was not completed;
- To delineate the groundwater contamination remaining following soil excavation and treatment activities;
- Collect data to support remedial planning efforts.



2.0 SCOPE OF WORK

2.1 SCOPE DEVELOPMENT

As a result of excavation activities, the following key observations were made:

- MW-3 was removed during excavation activities;
- No observations of LNAPL were made during excavation;
- Various intervals of grey soil staining at various depths were encountered in both excavation areas;
- A blue shale and siltstone unit was identified at approximately 40 to 43 feet below ground surface (bgs) within the limits of the well pad area. While no groundwater was visible within the horizontal strata observed on the excavation sidewalls, weeping was observed around MW-3 above this unit. This unit is likely an aquitard, restricting vertical migration of groundwater to the shallow zone above it;
- During soil excavation and treatment, soil samples were collected from the Williams excavation for analysis. Results were compared to the cleanup criteria of <50 mg/kg total BTEX and <100 mg/kg total TPH. Pass/fail criteria was used to design the soil boring program. These pass/fail results are illustrated in **Figure 3**;
- Generally, samples of excavated soils with analytical results below the cleanup criteria (50 mg/kg total BTEX and 100 mg/kg TPH) exhibited PID readings < 1,000 ppmV.
- Concurrent with their excavation activities, BP installed monitoring wells designated MW-6, 7, 8, 9, and 10. A boring was initially advanced for MW-10 in a location east of the current MW-10 location, but was subsequently abandoned. Soil contamination was identified at MW-10, but not verified at the BH-A location; and,
- MW-1 and MW-7 were plugged and abandoned during BP's excavation. MW-2, 4, 5, and 6 were cut, capped, and buried during excavation activities and their current condition is unknown.

2.2 SOIL BORING INSTALLATION

Soil delineation will be completed through the advancement of soil borings, soil sampling, and laboratory analysis. The locations of the proposed borings are presented on **Figure 3**. Locations were selected based on the extent of the excavation, clearance samples passing cleanup criteria, and clearance samples failing cleanup criteria (see **Figure 3**). Final locations will be determined in the field.

Specifically, the scope of work includes:

- The locations for the proposed borings will be marked and utility location notifications performed;
- On the pad area, 17 soil borings (**Figure 3** – 14 soil borings and 3 monitoring well borings) will be installed to an approximate total depth of 43 feet bgs (to the blue shale). Drilling will be advanced using best available techniques to obtain adequate samples and observe unsaturated and saturated lithology within the consolidated (outside of former excavation) and unconsolidated (inside the former excavation) sandstone and shales;



- The soil column from each soil boring will be screened for VOC vapors using a PID and the lithology logged;
- At each boring location, samples will be collected in 5-foot intervals. In each 5-foot interval, one soil sample from the section with the highest recorded PID reading will be submitted to the laboratory for BTEX analysis using method 8260B and TPH-GRO (C6-C10), TPH-DRO (C10-C20), and TPH-MRO (C28-C40) using method 8015;
- If PID vapor concentrations are greater than 1,000 ppmV in any of the borings, the boring will be completed as a well for remedial and/or monitoring purposes.

2.3 MONITORING WELL INSTALLATION

Groundwater contamination has historically been detected at monitoring wells MW-2, MW-3, MW-5, and MW-10 located in the central and south portions of the well pad area extending south to the Secondary Seep and Concrete Trap. The proposed scope of work includes the installation of groundwater monitoring wells and the subsequent collection of groundwater samples. The locations of the proposed groundwater monitoring wells are presented on **Figure 4**. Final locations will be determined in the field based upon ability to safely access the locations with drilling equipment given the complex terrain.

Specifically, the scope of work includes:

- The locations for the proposed borings will be marked and utility location notifications performed;
- Seven groundwater monitoring wells (**Figure 4**) will be installed. At the well pad area, three of the soil borings discussed in Section 2.2 will be completed as wells to be designated MW-3R, MW-11 and MW-12 to an approximate total depth of 43 feet bgs. Down-gradients off the pad area, the wells to be designated MW-13 through MW-16 will be advanced to the blue shale unit identified during excavation.
- Drilling will be advanced using best available techniques to obtain adequate samples and observe unsaturated and saturated lithology within the consolidated (outside of former excavation) and unconsolidated (inside the former excavation) sandstone and shales;
- The soil column at each monitoring well will be field screened for VOC vapors using a PID and the lithology logged;
- At each location, soil samples will be collected in 5-foot intervals. In each 5-foot interval, one soil sample from the section with the highest recorded PID reading will be submitted to the laboratory for BTEX analysis using method 8260B and TPH-GRO (C6-C10), TPH-DRO (C10-C20), and TPH-MRO (C28-C40) using method 8015;
- Wells will be completed with either flush-mount or stick-up surface completion;
- The monitoring wells will be developed to improve the hydraulic communication between the well and the surrounding formation; and,
- The wells will be surveyed to the site benchmark.

2.4 GROUNDWATER SAMPLING

Due to the known slow recharge of groundwater at the site, groundwater sampling activities will be performed a minimum of two weeks following well installation and development. This time period



will allow the formation to equilibrate following the disturbance and assure the potentiometric surface and groundwater samples are representative of the site condition.

Specifically, the scope of work includes:

- Recording the depth to groundwater (and LNAPL if present) in all monitoring wells using an interface probe capable of measuring to 0.01 feet;
- Purging each well of three well volumes;
- Collecting groundwater samples and analyzing the samples for BTEX using method 8260B and TPH-GRO (C6-C10), TPH-DRO (C10-C20), and TPH-MRO (C28-C40) using method 8015M;
- Collect groundwater samples from all monitoring wells for biological process parameters. Parameters to be measured in the field include oxidation-reduction potential (ORP), pH, temperature, conductivity, dissolved oxygen (DO), and ferrous iron. Additional parameters to be included and analyzed by the laboratory include alkalinity, nitrate, sulfate, and manganese.

2.5 REPORTING

Within 30 days following these delineation activities, a delineation report will be prepared and will include description of activities performed, figures of soil analytical results, figures of groundwater flow and analytical results, along with proposed plans for additional remedial actions required.

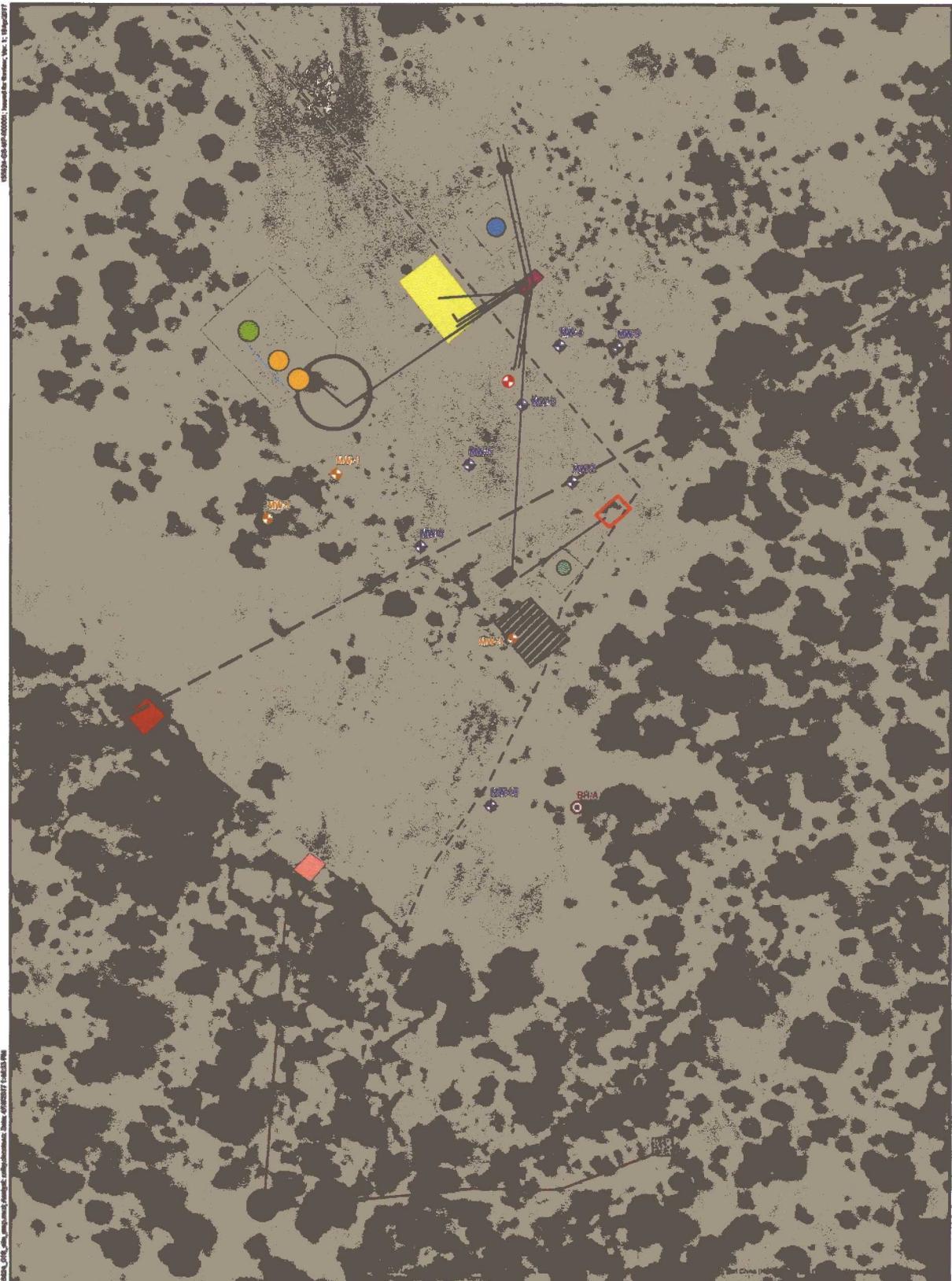


3.0 IMPLEMENTATION SCHEDULE

The schedule is anticipated to be sequenced in the following manner upon approval:

1. BP completion of excavation and backfill activities.
2. Soil boring and well installation – initiated within 30 days following completion of BP excavation activities.
3. Well Sampling – approximately 14 days following well installation.
4. Delineation Reporting and Preliminary Remedial Design – within 30 days following receipt of final analytical results.

Figures



Legend

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> Well Head Monitor Well Plugged Monitor Well Abandoned Borehole BP Gas Liquids Line BP Non-Potable Water Line Remediation Collection Line WFS Line Responsibility Demarcation Line | <ul style="list-style-type: none"> Product Tank 45 BBL Tank 95 BBL Tank A 95 BBL Tank B 95 BBL Remediation Tank Former Dehy Pit Compressor Dehydrator | <ul style="list-style-type: none"> Separator Concrete Trap Main Seep Secondary Seep Steel Containment Ring Meter |
|--|---|--|



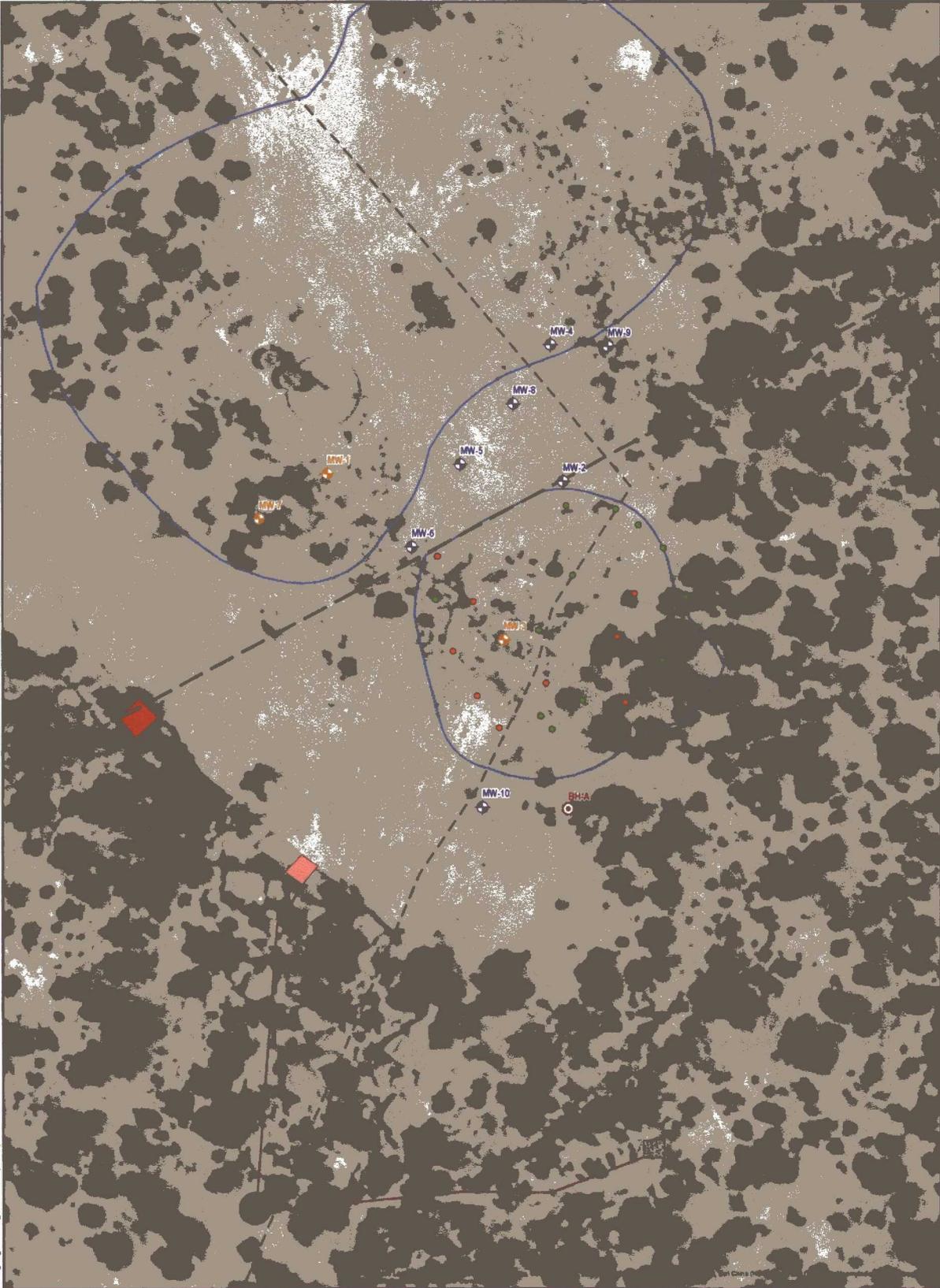
WILLIAMS FOUR CORNERS LLC

FIGURE NUMBER
1

**FLORANCE GC J 16A
SITE MAP**

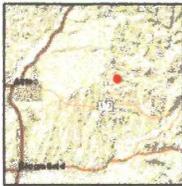
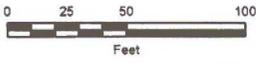


CBI Environmental & Infrastructure, Inc.
6060 South Fiddlers Green Circle, Suite 310
Greenwood Village, Colorado 80111



Legend

- Monitor Well
- Plugged Monitor Well
- Abandoned Borehole
- Excavation Soil Sample (Pass)
- Excavation Soil Sample (Fail)
- Excavation Limits
- Remediation Collection Line
- WFS Line
- Responsibility Demarcation Line
- 95 BBL Remediation Tank
- Concrete Trap
- Main Seep
- Secondary Seep



WILLIAMS FOUR CORNERS LLC

FIGURE NUMBER
2

**FLORANCE GC J 16A
EXCAVATION LIMITS**



CB&I Environmental & Infrastructure, Inc.
6380 South Fiddlers Green Circle, Suite 310
Greenwood Village, Colorado 80111

